

21st International Conference on IT Applications and Management

New developments in hyper-tourism in the age of digital intelligence

February 13 - 15, 2019



Supported by:
Korea Database Strategy Society (KDSS)



Universidad
de Huelva

21th International Conference on IT Applications and Management

New developments in hyper-tourism in the age of digital intelligence

February 13 ~ 15, 2019

Host and venue: Huelva University, Huelva, Spain

Co-host: Korea Data Strategy Society, International ITAM Society

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Preface

The ITAM international conference has now passed through 10 years of history. We went through a very active and agile interaction during the last decade, holding two conferences a year. We finished 20 wonderful conferences in many different places. Most of the locations include Asian countries such as China, India, Indonesia, Japan, Korea, Nepal, Taiwan, Thailand and Vietnam. We also had very memorable events in Africa, Nairobi, Kenya.

Our 21st conference is hosted by the University of Huelva, Spain. This is our second meeting in European continent after the conference in Dijon, France. We all know Spain is a great country, rich in cultural and historical artifacts and industrial achievements. Andalusia province, where Huelva belongs, has unique artistic and gastronomic traditions that delegates from all over the world can enjoy. University of Huelva lies at the central part of the gorgeous city of Huelva. I am very pleased that we ended up having this conference at the beautiful campus of this university. I wholeheartedly appreciate this hosting by my respected colleague, Professor Alfonso Vargas-Sanchez. His devotion made this wonderful event happen. My appreciation extends to Professor Pilar Marin-Mateos, Dean of the Faculty of Work Science of the University of Huelva for his generous support.

The theme of the 21st ITAM conference is “New Developments in Hyper-tourism in the Age of Digital Intelligence.” We have three renowned keynote speakers who prepared a wonderful speech on this topic for the conference, Professor José Ignacio-Castillo Manzano from Spain and Professor Luiz Moutinho and Kanes Rajah from the United Kingdom. Most of all, about 49 articles on and around this issue will be presented during the conference. I truly appreciate the contribution and active participation of all the delegates as well as the team of people who prepared all the details of the event behind the scene. Prof. Sateesh Kumar Ojha from Nepal prepared the proceeding book by compiling and editing papers we collected in Korea from many different countries and brought all the copies printed in Nepal to Spain. In this vein, the preparation of the conference has now become the exemplar of global collaboration. We are making histories.

I hope the delegates enjoy the wonderful academic interactions among the participants and all the arrangements prepared by the hosting team. In the end, let's cherish this wonderful memory not only for the sake of memory, but for further development of our future activities.

Namjae Cho

Chairman, International ITAM Society
Professor, School of Busienss, Hanyang University, Korea

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**NEW DEVELOPMENTS IN HYPER-TOURISM
IN THE AGE OF DIGITAL INTELLIGENCE
FEBRUARY 13 ~ 15, 2019**

Host and venue: Huelva University, Huelva, Spain

Co-host: Korea Data Strategy Society, International ITAM Society

[PROGRAM]

Pre-Congress Symposium (February 13, WEDNESDAY)

Time	Future of Asia Symposium (assembly hall, first floor)
16:00~17:30	Venue: Faculty of Work Sciences, Huelva University: https://goo.gl/maps/Ji9jpBawidC2 Chair: Namjae Cho (Chairman, International ITAM Society, Hanyang U. Korea) Keynote Speech Speaker: Professor José Ignacio Castillo-Manzano (U. of Seville, Spain) Theme: Trends in the Spanish economy and its tourist industry.
17.30-18.00	IMPORTANT NOTE: Participants will move by their own means (public bus or taxi) to the departing point of the cultural visit.
18:00~19:00	Walking tour to historical Huelva Downtown <u>Starting point:</u> Tourism Office, “Casa Colón”, https://goo.gl/maps/XfHnFbzfArr Afterwards, free time for participants to have dinner by their own in Huelva downtown and enjoy local life style.

Conference Plenary and Technical Sessions(February 14, THURSDAY)

Time	Program
08:15~09:00	Registration (ground floor)
09:00~10:30	Inauguration Session(assembly hall, first floor)
	Opening Announcement and Welcoming Remarks - Pilar Marin-Mateos (Dean of the Faculty of Work Sciences, Huelva U., Spain) -Alfonso Vargas-Sánchez (General Chair, Huelva U., Spain) Greetings -Gyungmin Kim (Conference General Chair, President of KDSS, Ewha U., Korea) -Namjae Cho (Chairman, International ITAM Society, Hanyang U. Korea) Keynote Speech: Speaker: Professor Honoris Luiz Moutinho (U. of Suffolk, UK) Theme: Fatiloquence of Tourism, Technology and the Human Frontier

Conference Plenary and Technical Sessions(February 14, Thursday)

Time	Track A (Classroom IB1, Ground floor)	Track B (Classroom DB3, Ground floor)	Track C (Classroom D14, First floor)
11:00 ~12:30	Session A1 New Developments In Tourism Chair: Inmaculada Rabadán-martín (U. of Huelva, Spain)	Session B1 Social Changes Chair: Uthai Tanlamai (Chulalongkorn U., Thailand)	Session C1 Creativity and Managing Emotions Chair: Santosh Rangnekar (IIT Roorkee, India)
	Analysis of the use of online reputation by 4- and 5-star hotels in Andalusia Inmaculada Rabadán-Martín, Francisco Aguiar-Correa, Nuria Padilla-Garrido (U. of Huelva, Spain) Tourism and IT connection in trekking business of Nepal Chandra Bahadur Gurung (Tribhuvan U., Nepal) Bi-nations pilgrimage tour mobility in tourism industry Ajay Khadka, Dinesh Basnet (Lincoln U. College, Malaysia) Adventure tourism and implication of ICT use in Nepal Tej Bahadur Gurung (Lincoln U., Malaysia) A study on tourist satisfaction level at Chitwan National Park Dinesh Basnet and Ajay Khadka (Lincoln U. College, Malaysia)	Innovative job service model for elder's lifestyle and quality of life: A review of the literature Nichamon Sithiponporn, Uthai Tanlamai, Sipat Triukose, Achara Chandrachai (Chulalongkorn U., Thailand) An innovative process model for elderly health promotion using a personal health record platform Warangkhan Ngakooapatipat, Uthai Tanlamai, Sipat Triukose (Chulalongkorn U., Thailand) Challenges and opportunities of practicing federalism in Nepal Tul Bahadur Budhathoki (Himalaya College, Nepal) Precision fitness for the elderly based on artificial intelligence technology Lanqing Dong¹, Meilin Li¹, Yizu Wang¹, Changcheng Chen¹, Jinzhao Wang², Guobin Dai¹ and Weihui Dai² (1: Shanghai U. of Sport, 2: Fudan U., China) Speech intelligent monitoring for early warning of depression recurrence Shenyue Han, Tianyang Chen, Ke Gao, Jinzhao Wang and Weihui Dai(Fudan U., China)	The innovative city development through place marketing, branding and co-creation as a new perspective for Slovakia Marica Mazurek (Žilina U., Slovakia) Expanding on lessons from Hollywood: Using Hollywood video-clips and movies to integrate creativity, innovation, and technology in entrepreneurship Ji-Hee Kim (Canisius College, U.S.A.) Effect of compensation on employees' motivation to overtime Milan Pant (Nepal Mega College, Nepal) An effect of OCB on the effectiveness of information security Myeonggil Choi(Chung-Ang U., Korea), Jaehoon Whang(Yonsei U., Korea) Challenges and opportunities of Nepalese women politicians Sunita Kunwar (Himalaya College, Nepal)
12:30~13:30	Lunch (cafeteria, ground floor; see menu below)		

13:30~15:00	Session A2: Performance Management Chair: Ali Abdulbaqi Ameen (Lincoln U. Col., Malaysia)	Session B2 Entrepreneurship and Family Business Chair: Ji-Hee Kim (Canisius College, U.S.A.)	Session C2: ICT Applications and Media Effects Chair: Weihui Dai (Fudan U., China)
	Impact of employee job satisfaction on employee performance Jyoti Arya and Santosh Rangnekar (IIT Roorkee, India) Who are willing to tell the truth? The impact of controllability and management experience on unfavorable earnings forecast disclosure Kanjana Phonsumlissakul, Juthathip Audsabumrungrat (Chulalongkorn U., Thailand) Practices recommended for effective training and Development of Nepalese Five Star Hotels Roopesh Shrestha (Lincoln U., Malaysia) Successful fundraising: Does equity-based crowd-funding platform matter? Aranya Narklor, Ra-pee Pattanapanyasat, Uthai Tanlamai (Chulalongkorn U., Thailand) Job satisfaction of teaching faculties in Tribhuvan University affiliated colleges Dhundi Bhattarai (Nepal Mega College, Nepal) The impact of socio-economic development and Terai movement Anup Raj Kharel (College of Business Management, Nepal)	An institutional approach to comprehensive factors leading to global entrepreneurial activity Ji-Hee Kim (Canisius College, U.S.A.) A study on priority of factors that affect the successors in the family firm using AHP Namjae Cho, Yunseok Lee, Giseob Yu (Hanyang U. Korea) Innovative model for the promotion of caring and relationship between caregivers and people with dementia Taksaya Watcharasarnsap, Uthai Tanlamai, Rajalida Lipikorn (Chulalongkorn U., Thailand)) Role of learning and motivation on creativity Aditi Bisht and Santosh Rangnekar (IIT Roorkee, India) Teaching critical thinking and problem solving skills Yashodham Tripathi (Kathmandu City Education Foundation, Nepal) The application of information network for health poverty alleviation Jinzhao Wang¹, Na Lyu², Meilin Li³, Shuangshuang Dai⁴, Wenhui Dai⁵ and Weihui Dai¹(1. Fudan U.; 2. Shanghai Jiaotong U.; 3. Shanghai U. of Sport; 4. Shanghai U. of Med & Health Sci.; 5. Shanghai Billow Info Sci and Tech., China)	Exploring the effect of online time sales on actual purchase in China Mengmeng Wang and Daihwan Min (Korea U., Korea) On defensive behaviors in IT purchasing Sung Kun Kim, Nam Gyu Ahn (Chung-Ang U., Korea) A study on the effects of techno-stress on intermittent discontinuance of wearable devices Namjae Cho, Juyoung Park (Hanyang U. Korea) Design of an in-house cryptocurrency information service based on blockchain Hyun Joo Kim (Dan-kook U., Korea) Min Sun Kim (Hyupsung U., Korea) An activity-centric quality model of software Seokha Koh (Chungbuk National U. Korea) Research design to compare the impacts of two different types of chat bots: rule-based and natural language processing-based Namjae Cho, Yeji Lim, Jeonghun Lim (Hanyang U. Korea)
15:00~15:30	Coffee Break (cafeteria, ground floor)		

15:30~17:00	Session A3 Analytics and Management Chair: Miyoung Lee (Konkuk U., Korea)	Session B3 Education, Technology and Management Chair: Min Sun Kim (Hyupsung U., Korea)	Session C3 Service Transformation Chair: Daihwan Min (Korea U., Korea)
	Predicting corporate bankruptcy using media information in Korea Miyoung Lee, Jungwon Choi, Sekyung Oh (Konkuk U., Korea) Study on Chinese "Feng Shui" characteristics of commercial community based on big data analytics Wenyu Lin¹, YimingJiang¹, Jingchen Fu¹, Hao Hao², Le Hu¹, Yufeng Zou¹ and Weihui Dai¹(1:Fudan U., 2:Shanghai U. of Fin and Econ, China) Meta-analysis of the fMRI observations of brain emotional responses Xiao Chen¹, Xinyu Dai¹, Hai Sun¹, Huajuan Mao², Xiaohua Hu²and Weihui Dai¹(1:Fudan University; 2:Second Military Medical U., China) The semantic expression characteristics of sign language and intelligent recognition method Chun Wang¹, Xuelin Liao¹, Yuxin Han¹, Yahuan Dai², Yahui Sun¹ and Weihui Dai¹(1: Fudan U., 2: Anhui U., China) Factors affecting choice of data analysis software used by students and practitioners while doing quantitative research Sateesh Kumar Ojha (Tribhuvan U. Nepal)	Cyber education, from a substitute to a core for learning in the fourth industrial revolution era Jihwan Yum (Hanyang Cyber U., Korea) Interactive language teaching methods and approaches - The use, techniques and positive effects of the Callan Method in the English classroom Paulina Mazurek (U. of Waterloo, Canada) The effect technology readiness on the actual usage among open distance learning on the public universities in Nepal Pradeep Bastola and Ali Abdulbaqi Ameen (Lincoln U. College, Malaysia) Management education in India: from a state of quandary to a promising roadmap Siddharth Chaudhrya and Santosh Rangnekar (IIT Roorkee, India) Management education in India: issues and concerns Shruti Sarkar and Santosh Rangnekar (IIT Roorkee, India) An assessment of technical and vocational education: essentiality from Nepalese perspective Ramhari Silwal (Lincoln U., Malaysia)	The impact of the system and information quality of smart government in UAE on user satisfaction Ali Ameen, Dawoud Al-Ali, Ahmed Al-Shibami (Lincoln U. College, Malaysia) Smart energy service modeling and implementation: Case of Korea Telecom Junghwan Lee (Chungbuk National U. Korea) SungBum Kim (Kumho National Inst. of Tech., Korea) Factors affecting guest's perceived value of dinning services in Nepalese restaurant Dwarika Upreti (Nepal Mega College, Nepal) The role of internal control practices, social innovation and digitalization of intelligence in sustaining non-governmental organizations' operations in Nepal Causes and consequences of vulture population decline worldwide: a case study of Jatayu (vulture) restaurant in Nepal Neupane Chanda (Lincoln U. College, Malaysia)

17:00~18:00	Valedictory Session (assembly hall, first floor)
	Keynote Speech Speaker: Kanes Rajah (CEPD London, UK) Theme: Digital Age Technologies and Their Impact on Tourism, Terrorism, and Teenage Fantasies 1) Closing Address - Alfonso Vargas-Sánchez (General Chair, Huelva U., Spain) - Namjae Cho (Chairman of International ITAM Society) 2) Announcement of the Next Conference - Myung Gil Choi (Chung Ang University, Korea)
19:00~21:00	Banquet(see menu below) IMPORTANT NOTE: bus departs at 18.30 from the conference venue to “La Mirta” restaurant, in “Bellavista” golf club. https://goo.gl/maps/W2Vwjz8g5Au

Post-Congress Event(February 15, FRIDAY)

Time	Industrial Visit
09:00~12:00	CEPSA, La Rábida Spanish Multinational Oil Refinery Company(site: https://www.cepsa.com/en/) IMPORTANT NOTE: Bus departs at 09.00 from the conference venue.
 (ITAMS) International ITAM Society	 Korea Data Strategy Society  Universidad de Huelva

Conference LUNCH MENU

First course

Fried aubergines with honey and fried almonds

Or

Garlic soup with asparagus and egg

Second course

Breast chicken with pepper sauce and basmati rice

Or

Grilled tuna with potatoes

Dessert

Eggs custard

Or

Fresh fruit

Beverages

Mineral water, soft drinks, beer, white/red wine.

Conference BANQUET MENU

Starters

Boiled white prawns from Huelva

Fried anchovies

Seafood croquettes

Portions of fried marinade fish and pumpkin fondue

Main course

Confit duck and mashed potatoes and mango

Or

Sea bass fillets stuffed with shrimps and cream of mussels

Dessert

Assorted desserts and decoration of traditional local sweets

Beverages

Mineral water, soft drinks, fruit juices, beer, white/red wine.

Successful Fundraising: Does Equity-Based Crowdfunding Platform Matter?

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Abstract

Equity-based Crowdfunding (ECF) is a means to raise money for startups and entrepreneurs. The popularity of crowdfunding has spread out almost a decade ago. Different types of crowdfunding platforms are set up in different countries. There are pros and cons on these variations. For Thailand, the ECF platform model is akin to the one from South Korea, which is supported by the regulated bodies. Given its influence and importance to startup's financial vitality, this paper will present a comparison of the formation among ECF platforms from South Korea and Thailand and elaborate on their regulatory requirements that cast the ECF operations in both countries. The paper will also focus on Thailand's newly established ECF platform called Launchpad and Investment Vehicle for Enterprises (LIVE). This platform is unique because of its ownership structure and its formative tie with the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET).

Keywords

Crowdfunding success, startups, formation of a crowdfunding platform, regulator

Equity-based Crowdfunding

The emergence of crowdfunding has tentatively promised that startups and entrepreneurs, who might not be able to raise fund from traditional channels such as a loan from a bank or an investment from a venture capital, can have an opportunity to secure the money needed to pursue their business endeavors. The popularity of crowdfunding activities comes with much research interest in different crowdfunding models. Nevertheless, despite an increase in crowdfunding studies, prior research (between 2006 and 2016) has generally studied lending-based and reward-based crowdfunding, 31 and 25 percent, respectively. Only 8 percent has explored equity-based crowdfunding (ECF), through which investors receive equity ownership in a company in exchange for investment (Kim & De Moor, 2017; Moritz & Block, 2016). Among these different types of crowdfunding models, the drivers of investment decisions differ (Ahlers, Cumming, Günther, & Schweizer, 2015; Mollick, 2014). For example, reward-based model appeals to investors by offering early product / discounts / special options. The motivation behind donation-based

model is benevolent and philanthropic. On the other hand, ECF is primarily interested in financial gain by investors. According to Ahlers et al. (2015), two factors that relate to the fundraising success in ECF are the human capital and quality of startups/venture, i.e., management experience and skills and the investment risk level as portrayed by the amount of equity offering and disclosure of financial projections.

Recently, ECF has been a focus of regulators worldwide because investing in ECF is relatively more complicated than other types of crowdfunding. In 2012, the “Jumpstart Our Business Startups (JOBS) Act” is released in the United States of America. In 2015, the Chinese regulator releases the “Equity-based crowdfunding Regulations”; in the same year, the Malaysian regulator releases the “Guidelines on Regulation of Markets under Section 34 of CMSA.” In 2016, the South Korean regulator releases the “Financial Investment Services & Capital Markets Act.” Similar to regulations in other capital markets, the abovementioned regulations aim to govern fundraising activities of startups and SMEs, with the ultimate goal of protecting investors (ASEAN, 2017; IOSCO, 2014).

Despite rules and regulations in place, the amount of money invested in ECF is relatively high, inevitably posing high risks and impacts on a large group of investors. The finding from Hornuf and Schmitt (2016) asserts that investing in the ECF are likely risky. They study 303 campaigns from 22 different ECF platforms in Germany, starting from September 2011 to December 2015. The results indicate that 210 (69%) campaigns are successfully funded, 54 (18%) campaigns fail, and 39 (13%) campaigns had no publicly available information about funding success on the portal website at the end of the observation period.

Rechtman and O'Callaghan (2014), Valanciene and Jegeleviciute (2013), and Tomboc (2013) identify that there are many risks in the ECF, including stealing ideas, market rejection, campaign failure, administration and accounting problems, regulatory and compliance risks, and fraud.

Equity-based Crowdfunding regulation

Since ECF concentrates on sharing future profits or offering returns from a business operations, if not regulated carefully, the risk facing naive investors can be detrimental. ECF regulators need to create conditions and must address policies and regulations for founders, investors, and ECF platforms. Founders are required to disclose sufficient information of their businesses and related risks (The World Bank, 2013). A survey by Cumming and Johan (2013) reports that investors seek tighten regulation on ECF for their risk protection. Thus, they prefer financial statements which are audited. Bergset (2015) reveals that an ECF platform, the intermediary between fund seekers and potential investors, should increase trustworthiness and reduce the perceived uncertainty and an adverse selection problem in the ECF market.

Although regulations regarding ECF varies among different countries, South Korea and Thailand are similar and yet different in many ways. Being the role model of having Over the Counter (OTC) trading to mitigate the risks of investors and founders, the ECF setup in Thailand follows. Table 1 compares the characteristics of ECF setups of the two countries. From the timing of ECF regulatory initiation standpoint, both countries are not far behind in timing of initiation. Nevertheless, Thailand was three years behind in the launching its first ECF platform—South Korea in 2015 and Thailand in 2018. In July 2015, the South Korean Parliament releases the “Financial Investment Services and Capital Markets Act” (the Capital Markets Act) which opens up a new phenomenon for South Korean startups to raise funds online. It also provides retail investors opportunity to invest in early stage companies. The Capital Market Act is effective in January 2016, which determines the

framework for investment crowdfunding in South Korea¹. In Thailand, the Securities and Exchange Commission (SEC) announces the provisions relating to the offering of securities via electronic systems or networks in May 2015.

It should be noted that most of the stringent regulatory requirements in both countries are imposed on only the high value fund raising of general/retail investors. This is to protect crowd investors from making risky investment which might result in a large amount of loss. Nonetheless, the conditions enforced on funding portal or ECF platform for South Korea is more lenient than that of Thailand. This is perhaps due to the fact that South Korea has a highly developed financial market and the majority of investors are educated. Thai law requires the ECF platform operator to have at least 5 million Baht (roughly 150,000 USD) of paid-in capital, a license from the Security Exchange Commission (SEC) and the duty to advice investors as well as being the custodian for the fund being raised.

Equity-based Crowdfunding platform

A crowdfunding platform is important to successful crowd funding activities. The right platform can assure its participants that their dealings are in good hands (Forbes & Schaefer, 2017). Crowdfunding participants, both founders and investors, seek a distinctive platform which has excellent reputation. Investors are likely to make an investment decision with the platform with well-known reputation, transparency, and high level of risk-averse. Prior research examines the factors contributing to a superior crowdfunding platform. In the reward-based crowdfunding, Forbes and Schaefer (2017), Koch and Cheng (2016) and Mollick (2014) reveal that video presentation captures an audience's attention, especially investors. They also suggest that platform operators should use high quality video with impressive title and maintain succinct content in a professional manner. Moreover, crowdfunding platforms are responsible for carrying out effective marketing and public relation activities. For example, the screening of spelling errors, actively promotion of a campaign/project, and diligently searching for products and campaigns which are suitable for the platform. After launching the campaign, the crowdfunding platform should encourage the fund seeker/founder to communicate with its investors on project update, project status, and detailed action plan. Gabison (2014) states that platforms can help prevent fraud or decrease the likelihood of project failure because they have a responsibility to maintain a clear campaign's information and design extensive anti-fraud procedures to protect potential investors so as to increase the trustworthiness of the platform itself.

1 www.crowdfundinsider.com, *The Development of Investment Crowdfunding in South Korea*

Table 1: Comparison of South Korea and Thai regulations on ECF

ECF Participants		South Korea			Thailand	
Investor	Type	General investor	Qualified investor	Professional investor	Individual / retail investor	Non-retail investor
	Investment constraint	• = 2 million KRW (roughly 1,700 USD) per issuer • a maximum of 5 million KRW (roughly 4,400 USD) per year	• = 10 million KRW (roughly 8,900 USD) per issuer • a maximum of 20 million KRW (roughly 17,800 USD) per year	Unlimited	• = 50,000 THB (roughly 1,500 USD) per issuer • a maximum of 500,000 THB (roughly 15,000 USD) per year	Unlimited
Issuer/ Founder (Startups)	Qualification	• Unlisted small and medium-sized company • Must have been in operation for not more than 7 years • Finance or insurance, real estate, and gambling or betting businesses are not allowed			• Company limited under Thai law • Unlisted company • Must have a business plan • Passing the check by the funding portal	
	Offering amount	• Up to 700 million KRW (roughly 623,000 USD) in 1 year			• Up to 20 million THB (roughly 612,000 USD) in 1 year and total investment amount up to 40 million THB (roughly 1.2 million USD)	
	Investor protection	• The whole issue will be cancelled if less than 80% of the target amount is sold and subscribed • Lock-up period: An issuer and major shareholders are required to hold their shares for at least one year after the issuance.			• Using All-or-Nothing threshold model (AON)	
	Exit market for investor	• Selling at Korea Over-The-Counter Bulletin Board (K-OTC BB)			• Not required	
Funding portal/ platform	Qualification	• Approved by the Financial Services Commission (FSC) • Submit monthly, quarterly, and annual governance reports to the Financial Supervisory Services (FSS) • Receive annual audits			• Company established under Thai law as company limited • Paid-in capital not less than 5 million THB (roughly 150,000 USD) • Obtain a license from the SEC • Receive annual audits	
	Advising service to investor	• Not required			• Required • Investment knowledge test required for individual / retail investor	
	Statistics from the 1 st year of implementing ECF countrywide	At November, 2016 • 14 portals are registered with the FSC ➢ 6 portals are operated by investment banks or financial broker-dealers ➢ 8 portals operated full-time crowdfunding portals • 166 total crowdfunding campaigns ➢ 88 have successfully raised a total of 13.9 billion KRW from 4,463 investors			At November, 2018 • 2 portals are registered with the SEC ➢ Launchpad and Investment Vehicle for Enterprises (LIVE) is powered by the Stock Exchange of Thailand (SET). There are 19 companies and 23 investors registered on the LIVE platform ➢ Sinwattana is a non-affiliated investment crowdfunding platform	

Source: Adapted from CrowdNet (<https://www.crowdnet.or.kr>) and the Securities and Exchange Commission, Thailand (<https://www.sec.or.th>)

Table 2: Examples of ownership of the ECF platforms in different countries

Australia	Yr	Owner	Europe	Yr	Owner
Enable Funding	2005	Rodney Payne, Greg Goodman, Will Leitch, Norm Virgo & Ashley Zimpel	WiSEED (France)	2008	Nicolas SÈRES & Thierry MERQUIOL
Birchal	2010	Alan Crabbe, Matt Vitale & Joshua Stewart	Seedmatch (Germany)	2009	Jens-Uwe Sauer
Equitise	2014	Chris Gilbert, Jonathon Wilkinson, Panche Gjorgjevski & Will Mahon-Heap	MyMicroInvest (Belgium)	2011	Charles-Albert de Raditzky, Guillaume Desclée, José Zurstrassen & Olivier de Duve
Capital Labs	2018	Dr George Symalis, Spiro Sakiris & Christina Seppelt	FundedByMe (Sweden)	2011	Arno Smit and Daniel Daboczy
Malaysia	Yr	Owner	Companisto (Germany)	2012	David Rhotert & Tamo Zwinge
PitchIN	2012	Sam Shafie, Megat Ishak & Kashminder Singh	Invesdor (Finland)	2012	Jouni Leskinen, Lare Lekman, Lasse Mäkelä, Miikka Poutiainen, Petteri Poutiainen & Timo Lappi
Crowdo	2013	Leo Shimada & Nicola Castelnovo	Startupxplore (Spain)	2014	Javier Megias, Nacho Ormeño
Eureeca	2013	Chris Thomas & Sam Quawasmi	South Korea	Yr	Owner
CrowdPlus.asia	2015	Kim Seng The	Tumblbug	2011	Jaeseung Yeom
USA	Yr	Owner	Wadiz	2012	Shin Hye Sung
EquityNet	2005	James Murphy & James Murphy	OpenTrade	2012	Kevin Azzouz
AngelList	2010	Naval Ravikant, Babak Nivi & Venture Hacks, Inc.	Crowdy	2015	Scott H. Jung
Crowdfunder	2010	Dawn Bebe	Yinc	2015	Hoon Ko
CircleUp	2011	Ryan Caldbeck & Rory Eakin	OHMYCOMPANY	2015	Jack Sung
Wefunder	2011	Nick Tommarello, Mike Norman & Greg Belote	AsiaCrowd	2015	Chun Gu Park
EarlyShares	2011	Steve Temes, Heather Schwarz & Mark Gillanders	Funding4u	2015	Kyu Jin Lee
Fundable	2012	Wil Schroter & Eric Corl	UK	Yr	Owner
SeedInvest	2012	Ryan Feit & James Han	Angels Den	2007	Bill Morrow & Lois Cook
PeerRealty	2014	Jordan Fishfeld & Juan Hernandez	Seedrs	2009	Jeff Lynn
			Crowdcube	2011	Darren Westlake & Luke Lang
			Syndicatoroom	2013	Gonçalo de Vasconcelos & Tom Britton
			Crowd2Fund	2014	Chris Hancock

Source: Websites of <https://crowdfundingpr.wordpress.com/>, <https://www.moneycrashers.com>, <https://www.eu-startups.com>, <https://www.crowdnet.or.kr>, and <https://www.forbes.com>

Table 2 lists the owner(s) of the ECF platform operators in six countries. As shown, the majority of the ECF platforms are privately owned. The owner can be a founder, a co-founder or a management team. The takeoff of a platform goes back to the year 2005 when the idea of raising funds through crowdfunding became materialized. Being one of the originators, the USA has more platforms than any other countries. Malaysia and South Korea catch on the band wagon in the early part of the present decade with four and eight platform operators, respectively. The next two sections will describe the ECF platform in South Korea and Thailand. A brief conclusion of interaction between the ECF of the two countries will follow.

ECF platform in South Korea

In December 2018 there are 15 ECF platforms in South Korea – 6 platforms are operated by investment banks or financial broker-dealers whereas 9 platforms by regular crowdfunding companies. The statistics from CrowdNet² starting from January 2016 to December 2018 show that 476 (57%) campaigns are successfully funded and 352 (43%) campaigns fail. The total amount of funding being raised is 73.9 billion KRW (roughly 65 million USD). The statistics also state that the majority of investment amount in ECF campaigns are done by professional investors (83%), followed by qualified investors (70%), and general investors (50%). Males (69%) are interested in ECF investment more than females (31%). Furthermore, as presented in Figure 1, the investors in their 30s are likely to invest in the ECF campaigns more than any other age groups – under 30 (26%), 30s (41%), 40s (23%), 50s (8%), and over 60 (2%).

2 <https://www.crowdnet.or.kr>



Figure 1: Summary of the South Korea crowdfunding statistics

The funding options for ECF investors in South Korea occurred in November 2016 when the Korea Exchange (KRX) opened the Korea Startup Market (KSM). The primary purpose of KSM is to promote investment in startups. This is done by giving an investor the opportunity to use over-the-counter (OTC) trading the stocks of a startup firm, and to enable an investment exit function. KSM also helps guard against information asymmetry between sellers and buyers since KSM is open to retail investors. Trading of stocks in the KSM is limited to shares of startups with a focus on technology or innovation.³ This KSM market is expected to facilitate funding sources for startups as they step up from crowdfunding platforms to KSM, Korea New Exchange (KONEX), and eventually Korean Securities Dealers Automated Quotations (KOSDAQ). Figure 2 depicts the market structure of funding sources as startups grow stronger to become SMEs and perhaps a publicly owned company later.

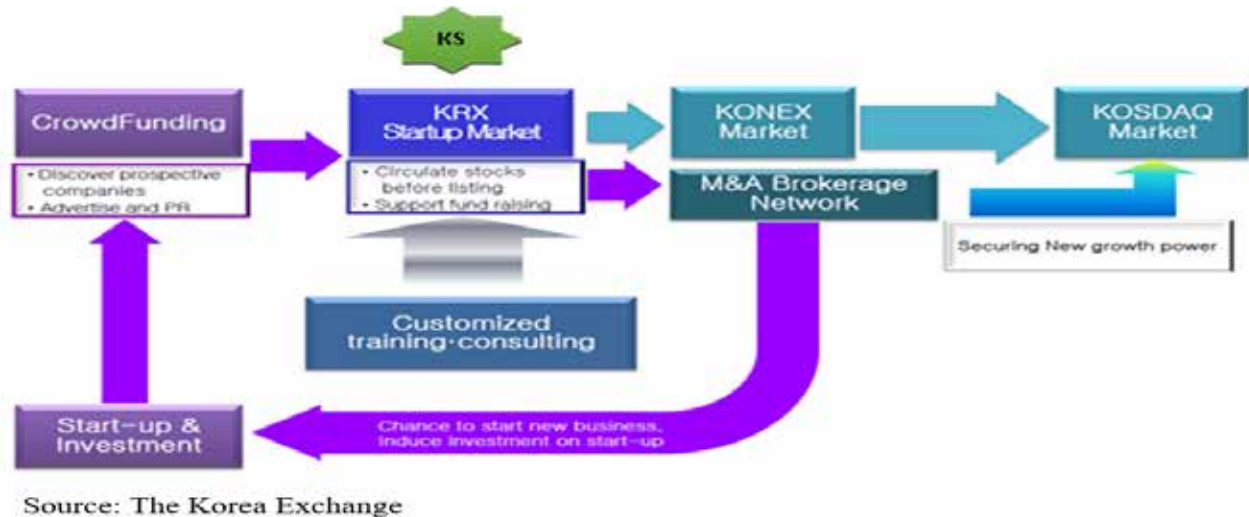


Figure 2: Overview of the South Korea supporting structure for startups

Ecf platform in Thailand

An ECF platform in Thailand is quite unique as compared to those of other countries because it is own by the Stock of Exchange of Thailand (SET). Launchpad and Investment Vehicle for Enterprises (LIVE) platform is the first ECF platform approved by the Securities and Exchange Commission (SEC) for startups and SMEs in Thailand. The “LIVE” platform is operated by LiveFin Corp Co., Ltd. and has 99.99% of its shares held by the SET. The LIVE platform’s main stakeholders includes founders (Startups / SMEs), investors, and escrow agent (Krungthai Bank, KTB). The information flows among these stakeholders through SEC Registered Funding Portal and related Back Office support systems is presented in Figure 3.

3 Korea Institute of Finance, Key Considerations in Launching KRX Startup Market (KSM), (<http://www.kif.re.kr>)

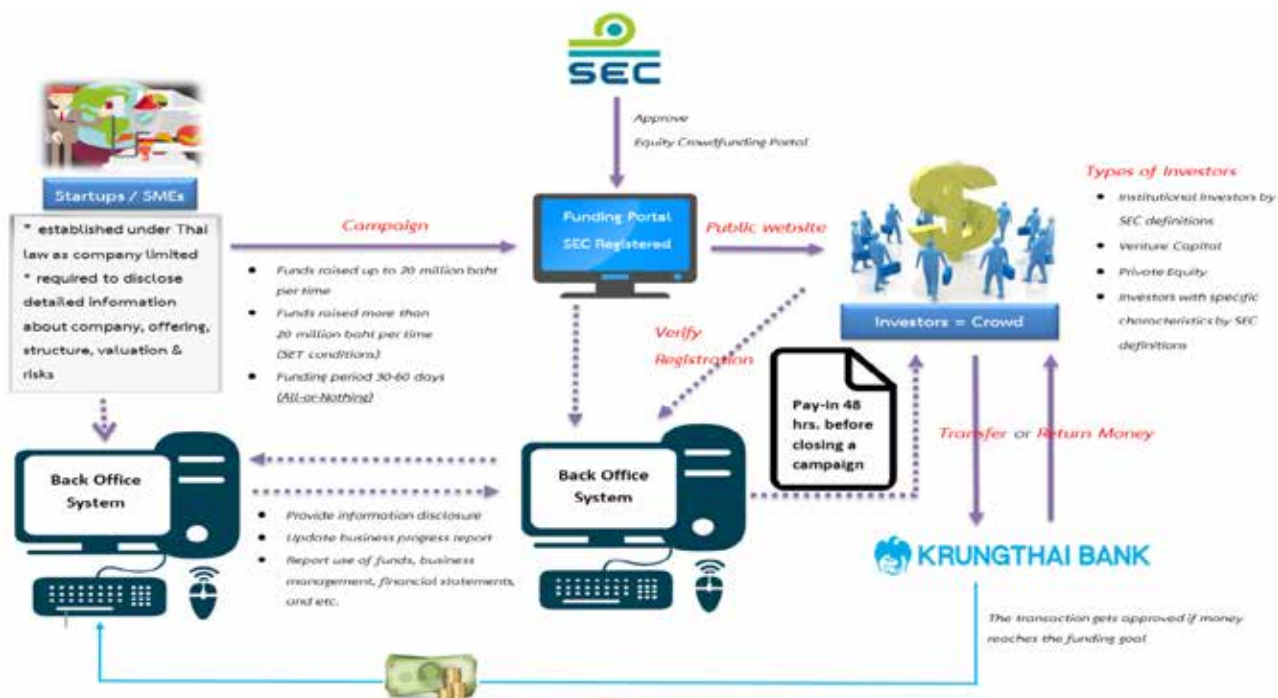


Figure 3: LIVE platform ecosystem

In Thailand, there are two capital trading markets, the Stock Exchange of Thailand (SET) and Market for Alternative Investment (MAI), the former is for large publicly owned companies and the latter for small and medium sized enterprises. Nevertheless, the regulatory requirements imposed on the LIVE platform is more lenient than those required for SET and MAI. Table 3 compares characteristics among the SET, MAI, and LIVE platform. Although the SET, MAI and LIVE support secondary trading, the LIVE platform relies on dealing mechanism allowing more flexibility between sellers and buyers.

Table 3: Comparison of SET, MAI, and LIVE platform characteristic

	Characteristic		
	SET	MAI	LIVE platform
Status	Public company or Corporate entities established by Thai law		Company Limited
Paid-in capital	= 300 million baht	= 50 million baht	Not required
Performance	To have net profit in the latest 2 years or 3 years combined > 50 million baht, and last year > 30 million baht	To have net profit in the last year > 10 million baht	Not required
Public offering	> 15% / 10% of paid-in capital, depends on capital	> 15% of paid-in capital	Not required
Others	Corporate Governance and Internal Control of Provident Fund It is forbidden to sell shares.		The prohibition on the sale of shares is subject to an agreement between the company and its shareholders.
Secondary market trading	Auto-matching		Dealing
Payment Date	T+3		T+1

Source: Stock Exchange of Thailand

In February 2018, there is a renewal of memorandum of understanding (MoU) between The Stock Exchange of Thailand (SET) and The Korea Exchange (KRX). The MoU is spanning for another five years from February 2018 to February 2023. It aims to continue the synergized efforts on capital market development and business opportunities between SET and KRX including product and services development, IT infrastructure cooperation, and information exchange. This opportunity also encourages SET to improve the viability of the equity crowdfunding platform so as to increase the percentage of successful ECF funding which is instrumental to the longevity of Thai startups and SMEs.

Conclusion

This paper provides a narrative of difference types of ECF platforms, focusing on those from South Korea and Thailand. Regulations regarding ECF in South Korea and Thailand share certain similarities and yet differ in many ways. The overall goal of these countries is to facilitate fundraising for startups and entrepreneurs with relatively more relaxed regulations than the traditional capital markets. In addition, it is a collaboration to create a suitable model and an appropriate systematic of secondary market trading for ECF investors. This could improve investment exit function for investors who interested in startups with excellent business ideas or smart SMEs with new technologies.

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Who Is Willing To Tell The Truth? The Impact of Controllability and Management Experience on Unfavorable Earnings Forecast Disclosures

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Abstract

This study investigates the impact of controllability on management's decisions to voluntarily disclose negative earnings forecasts, specifically whether or not management experience strengthens managers' awareness of the importance of earnings forecasts, leading them to be more willing to issue negative earnings forecasts. The interactive effect of controllability and management experience is studied. The presented results indicate that managers are more willing to disclose unfavorable earnings forecasts when they emanate from a controllable cause rather than from an uncontrollable cause. Additionally, we found that more experienced managers are more likely than less experienced managers to disclose negative earnings forecasts regardless of whether the cause is controllable and uncontrollable. This study has implications for understanding the ex-ante factor of controllability and management experience on voluntary disclosure decisions under negative prospects.

Keywords

Management earnings forecast; management experience; controllability

Introduction

Managers use voluntary forecast disclosures to signal positive outcomes to the market regarding future performance information (Lev & Penman, 1990; Miller, 2002). In contrast, results of the association between negative outcomes and disclosures are ambiguous. Previous studies suggest that litigation risk and reputation costs motivate managers to disclose future unfavorable earnings early (Skinner, 1994). On the other hand, managers withhold bad news due to career-related concerns and stock price effects (Kothari, Shu, & Wysocki, 2009). Managers, sometimes, hold back information to provide time for improving a firm's performance before announcing bad news (Graham, Harvey, & Rajgopal, 2005). Since it remains unclear whether or not managers are willing to publicly disclose unfavorable earnings voluntarily, this study focuses on disappointing performance outcomes.

Prior research shows the linkage between performance outcomes and causal attribution in management

disclosures (Baginski, Hassell, & Kimbrough, 2004; Soffer, Thiagarajan, & Walther, 2000; Staw, McKechnie, & Puffer, 1983). Particularly, prior literature has found that there is a strong relationship between low performance and causal attribution documents (Staw et al., 1983). Management attempts to sway market participants' perception by using attribution to justify their unfavorable performances. Attribution theory suggests that success and failure outcomes can be classified according to dimensions of controllability (Weiner, 1979). If a success or failure is attributed to controllable causes, greater responsibility is attached to decision makers (Kelley & Michela, 1980). One objective of this study is to investigate whether controllability impacts management's disclosure decisions relative to negative outcomes. This study posits that when a controllable factor is determined as a cause of an unfavorable outcome, managers will accept more responsibility for the earnings failure, but they will distance themselves from failure resulting from an uncontrollable cause. For these reasons, managers will

more likely to reveal their future earnings information when it is related to a controllable cause rather than an uncontrollable cause.

According to Libby and Luft (1993), experience is an antecedent of knowledge and can affect an individual's decisions. Experience is accumulated by practice, and it helps decision makers bring more knowledge to do their dedicated tasks. For example, prior literature suggests that more experienced auditors are more likely than less experienced auditors to recognize potential errors in financial statement explanations (Libby & Frederick, 1990). While many considerable studies explore the advantage of experience on accounting tasks (Bonner & Lewis, 1990; Libby & Frederick, 1990), how experience levels impact management's disclosure decisions remains relatively unexplored territory. Management experience may help managers focusing on the long-term benefits of bad news forecast disclosure regarding management credibility and transparency rather than short-term effects of withholding bad news concerning forthcoming stock price relevant events. Since investors and analysts respond to bad news more than good news, this can be interpreted that bad news is more credible than good news (Rogers & Stocken, 2005). Correspondingly, this study anticipates that a high level of management experience could help managers to focus on the benefit of disclosure credibility in the long run. That is, the propensity of more experienced decision makers to issue earnings forecast information should increase in a failed outcome situation. In addition, this study also investigates how experience level moderates the effect of controllability on management disclosure decisions.

To test our predictions, we engaged 54 MBA students as participants in our experiment. We manipulated controllability as an independent variable of either a controllable or uncontrollable cause. The level of management experience was categorized based on the mean of self-assessment scores. The results indicate that managers with an unfavorable earnings forecast due to a controllable cause are more likely to disclose that information than when the unfavorable forecast is due to an uncontrollable cause. In addition, more experienced managers are more willing than less experienced managers to reveal their earnings forecasts.

The results also suggest that more experienced managers take more responsibility than less experienced managers for failure to meet outcomes by revealing earnings forecasts

regardless of whether they result from a controllable or an uncontrollable cause. In contrast, less experienced managers are more willing to disclose earnings forecasts when they are the result of a controllable cause rather than an uncontrollable cause. Specifically, when a failure to meet outcomes is due to uncontrollable factor, less experienced managers tend to avoid their responsibility and hide the failure from outsiders by not disclosing the information.

The findings of this study contribute to academic research by illustrating the impact of controllability on management disclosure decisions. Moreover, this study also extends the prior literature and improves understanding by taking advantage of the accumulated experience of decision makers. A high level of experience motivates managers to be more willing to disclose private information, even when it is negative, regardless of controllability. On the other hand, less experienced decision makers seem to avoid responsibility when the cause of failing to meet outcomes is uncontrollable and exhibit *ex ante* nondisclosure behavior, which is a consequence of myopic management concerns. Among less experienced decision makers, the likelihood of disclosing unfavorable earnings forecasts resulting from limited controllability is significantly lower than their likelihood of disclosing unfavorable earnings forecasts resulting from controllability.

These results also have implications for regulators by illustrating that managers might manipulate earnings forecasts by participating in *ex ante* disclosure behavior. The results suggest that less experienced managers tend to use their discretion to communicate inside information about firm performance depending on whether that performance is related to controllable or uncontrollable events. When the causes are uncontrollable, less experienced managers tend not to disclose disappointing outcomes, while they are more likely to disclose disappointing results when the causes were controllable. Regulators should consider these findings when developing voluntary disclosure guidelines in the future.

Hypothesis development

Controllability

Controllability refers to the level of control that decision makers have over the outcome of particular events (Tan & Lipe, 1997). Decision makers may reveal or hide their actions regarding the outcome (Heider, 1958). Attribution theory in psychology suggests that an outcome's effects (success or failure) can be attributed to the outcome's controllability (Weiner, 1979).

Since it is not mandatory to disclose management earnings forecasts, a situation of information asymmetry exists between corporate managers and outsiders such as investors. Prior studies indicate such asymmetric disclosure behavior of management earnings forecasts (Healy & Palepu, 2001). The controllability of an unfavorable earnings forecast gainfully exploits the asymmetric disclosure behavior of managers to withhold or reveal such information. For instance, managers strategically disclose all good news but not all bad news (Hirst, Koonce, & Venkataraman, 2008). Moreover, when outcomes are disappointing, executives are more likely to make causal attributions to justify such unfavorable outcomes (Baginski et al., 2004; Staw et al., 1983). According to Chen, Han, and Tan (2016), when the results are controllable, managers take responsibility for control to boost their credibility by signaling their ability to mitigate negative earnings outcomes. In contrast, when they cannot control the outcome, they provide an uncontrollable locus to distance themselves from the negative outcome even though this action could ruin their credibility (Chen et al., 2016). However, the analysis of blame in psychology (Shaver, 1985) suggests that individuals are blamed less and more likely to be given a chance to correct their mistakes when they have the capacity to control the situation. This is because other people expect them to do something to change the negative consequences (Karasawa, 1991; Schwarzer & Weiner, 1991). In addition, uncontrollable factors are usually surrounding events that occur randomly. No one can take responsibility for everything that happens (Gibbs, Merchant, Stede, & Vargus, 2004). However, an individual should have greater responsibility if the cause of the outcome is controllable (Kelley & Michela, 1980). This study expects that the controllability of a failed outcome could motivate managers to accept responsibility for the failed outcome under their controllability, which might influence managers to be more willing to disclose their private information. This leads to the first hypothesis that:

H1: Managers are more likely to voluntarily disclose unfavorable earnings forecasts resulting from a controllable cause than those resulting from an uncontrollable cause.

Management experience

Previous behavioral studies show the effect of experience on performance in accounting-related tasks (Bonner, 1990; Bonner & Lewis, 1990). For example, Libby and Luft

(1993) suggest that more experienced decision makers make better task-related decisions than their counterparts with less work experience, because experience embodies knowledge (Libby & Luft, 1993). As experience embodies various types of knowledge and develops cognitive structures, managers with more experience can utilize better information to solve problems.

Studies of judgment in managerial decision-making literature suggests that people compare the net benefits of short-term prospects to those of long-term prospects and select the better choice for themselves (Bazerman & Moore, 2013). According to the literature about disclosure, stock markets react more strongly to forthcoming negative information than positive information, which means that negative information is more informative than positive information (Roychowdhury & Sletten, 2012; Skinner, 1994). In other words, market participants behave as if the disclosure of bad news is more credible than the disclosure of good news. However, this price effect is not persistent.

More important than price-relevant event effects, an accurate signal will establish credibility and reduce adverse selection due to information asymmetry between managers and outside parties (Rogers & Stocken, 2005). The creditability of management takes a long time to establish. Although managers often disclose good news early and tend to withhold or delay bad news (Kothari et al., 2009), more experienced managers should recognize the long-term benefits of building and maintaining management credibility and understand that the price effect of bad news is temporary. They should focus more on future benefits instead of current effects. This study anticipates that experience should play an *ex ante* role in the voluntary disclosure behavior of corporate management. Specifically, more experienced decision makers will be more likely to disclose their private information in order to establish and maintain their credibility. On the other hand, less experienced managers are myopic regarding the short-term effects of missed market expectations, thus they may hide unfavorable information as long as they can. This leads to the second hypothesis that:

H2: Experienced managers are more likely than less experienced managers to voluntarily disclose unfavorable earnings forecasts.

The interactive effect of controllability and management experience

Many studies examine managers' reasons for voluntarily disclosing earnings forecasts (e.g., Kothari et al., 2009; Lev & Penman, 1990; Skinner, 1994). However, prior literature has provided relatively limited evidence concerning the causes of management's distortion behaviors, particularly regarding nondisclosure decisions. Even though responsible acceptance is generally incorporated when individuals provide justifications for negative outcomes, the extent of acceptance varies depending on individuals and situations. The greater the amount of controllability that individuals have over such outcomes, the more likely they are to take responsibility for it (Tan & Lipe, 1997). Therefore, controllability plays an important role in individuals' judgment in situations with bad outcomes. This study expects that when the cause of a failed outcome can be controlled by corporate management, both more and less experienced managers will be more likely to disclose bad news information and accept responsibility.

Moreover, this study anticipates that when an unfavorable outcome is caused by an environmental or random event over which management's control is limited, an individual will be less likely to accept responsibility. However, more experienced decision makers should think more deeply about the short-term and long-term consequences of disclosure decisions. As discussed earlier, more experienced decision makers should be concerned with long-term credibility and also recognize that the price effects of negative news are short term. Thus, more experienced managers should be more willing to disclose the bad outcome even when their control over the situation is limited. In contrast, less experienced managers seem to use the doubt of uncontrollable causes to justify hiding the bad outcome. They may be less likely to disclose unfavorable outcomes due to uncontrollable causes. Taken together, this leads to the last hypothesis, as follows:

H3: The likelihood of less experienced managers to disclose earnings information based on whether or not the cause of unfavorable earnings is controllable or uncontrollable will differ more than the likelihood of more experienced managers in the same situations.

Research method

Participants

To test our hypotheses, we conducted an experiment with

54 Master of Business Administration (MBA) students in a major university in Thailand. The participants had a mean (median) working experience of 9.14 (7.50) years, and they had attended 3.39 accounting courses and 2.29 finance and business courses.¹ Sixty-five per cent of them had previously invested in individual common stocks, and their mean investment experience was 2.48 years. We classified participants into either more or less experienced groups based on the mean score of their self-reported work experience. Twenty-one participants were categorized in the more experienced group, and 33 participants were categorized in the less experienced group.²

Design and manipulations

This study employed a 2x2 between-subject design with controllability (controllable versus uncontrollable cause) and management experience (more versus less) as the independent variables. There four possible conditions are presented in Table 1.

Table 1: Classification of groups in treatment conditions

Controllability	Management Experience	
	More	Less
Controllable cause	CM	CL
Uncontrollable cause	UM	UL

CM = controllable cause and more management experience

CL = controllable cause and less management experience

UM = uncontrollable cause and more management experience

UL = uncontrollable cause and less management experience

All participants assumed the role of an executive manager responsible for deciding whether to voluntarily disclose an earnings forecast based on available information. We withheld background information, quarterly forecast numbers, and analysts' earnings forecasts, but controllability was manipulated. Participants randomly received a failed future earnings outcome that was attributed to either a controllable or an uncontrollable cause. For the controllable cause condition, participants were informed that the earnings forecast for the next quarter (0.90 THB) would be lower than the last quarter's actual earnings (1.10 THB) due to the company's market initiatives. Meanwhile, for the uncontrollable cause condition, the lower earnings forecast was attributed to the company's main competitor's new marketing activity.

1 The number of accounting and business courses were insignificantly different between more and less experienced groups ($p = 0.22$ and $p = 0.14$, respectively).

2 The results of analysis were unchanged if participants were classified by median score of work experience.

Procedures

To ensure voluntary participation, the participants were informed of the purposes of this study and the required tasks and asked to sign a consent form at the beginning of the experimental process.³ The participants were randomly assigned either a controllable or an uncontrollable treatment condition. The case was separated into two parts. The first part presented background information regarding the hypothetical company called We Electronics – a listed company in the technology industry. The second part described the cause of the management earnings forecast (controllability manipulation), analysts' consensus, and the actual quarterly earnings (earnings benchmark). Participants in all conditions were asked to use an 11-point Likert scale rating from 0 (not at all likely) to 10 (extremely likely) to indicate the likelihood that they would issue a management earnings forecast for the next quarter. After the participants finished answering the response variable and returned all of the case materials to the experimenters, demographic information and answers to a post-experimental questionnaire for knowledge testing were collected. The entire task took approximately 30 minutes, and the participants were given a 100-Baht Starbucks card for their participation (1 USD = THB 33).

Results

Manipulation checks

To assess controllability manipulation, participants were asked to rate the cause of the next quarter's earnings forecast on an 11-point Likert scale (-5 to 5), where -5 indicated an internal controllable cause and 5 indicated an external uncontrollable cause. The mean responses were -0.48 and 3.03 for controllable and uncontrollable causes ($p = 0.00$). The results suggest that the participants perceived that the company's marketing initiative was related to a controllable cause while the competitor's new marketing activity was linked to an uncontrollable cause. Thus, the manipulation checks were successful.

In addition, participants were asked two questions to determine whether the earnings forecast numbers in the case materials were above or below the earnings benchmarks (previous quarter's actual earnings and analysts' consensus earnings forecasts). Ninety-six

percent and 93% of participants, respectively, correctly answered both questions. The results suggest that participants realized that the company's management earnings forecasts missed market expectations.

Descriptive statistics

Table 2 presents the descriptive statistics of the 54 participants according to the experimental treatment conditions. The total means (SD) of the likelihood of issuing management earnings forecasts when the causal condition is controllable or uncontrollable are 6.66 (1.95) and 5.09 (2.97), respectively. The total means (SD) of the likelihood of issuing management earnings forecasts among more and less experienced managers are 6.85 (2.03) and 5.16 (2.81), respectively.

Table 2: The likelihood of issuing management earnings forecasts - Descriptive statistics: Mean (SD), N = sample size

Controllability	Management Experience		
	More	Less	Total
Controllable	7.24	6.28	6.66
	(1.80)	(2.02)	(1.95)
	N=10	N = 15	N=25
Uncontrollable	6.50	4.23	5.09
	(2.24)	(3.08)	(2.97)
	N=11	N=18	N=29
Total	6.85	5.16	5.82
	(2.03)	(2.81)	(2.65)
	N=21	N=33	N=54

The participants were asked to use an 11-point Likert scale, where 0 and 10 respectively denote not at all likely and extremely likely, to indicate the likelihood that they would issue a management earnings forecast. Total likelihood is 100%.

Test of hypotheses

H1 predicts that managers will be more likely to disclose unfavorable earnings forecasts that are due to a controllable cause rather than those that are due to an uncontrollable cause. Table 3 shows that the effect of controllability on the likelihood of issuing management earnings forecasts is significantly different ($p = 0.05$). The likelihood of issuing management earnings forecasts when the outcomes are due to a controllable cause is significantly greater than when the outcomes are due to an uncontrollable cause (6.66 vs. 5.09). Therefore, the results are consistent with H1. Managers are more willing

³ This study was conducted under strict review by the Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University. The participants were protected from harm, and the information was kept confidential. There was minimal risk involved for participants in this study.

to disclose unfavorable future earnings information when it results from a controllable cause than when it results from an uncontrollable cause because they can accept responsibility for the failures.

H2 predicts that more experienced managers will be more likely to disclose unfavorable earnings forecasts than less experienced managers. The findings presented in Table 3 also suggest that the effect of experience is statistically significant ($p = 0.02$). More experienced managers are more willing than less experienced managers (6.85 vs. 5.16) to disclose unfavorable earnings forecasts because they understand the importance of maintaining long-term credibility. In contrast, less experienced managers are more likely to withhold bad news, sacrificing long-term credibility for short-term stock price effects. The results are consistent with our prediction, thereby showing that level of experience influences managers' judgment and decision making regarding the voluntary disclosure of firms' future prospects.

Table 3: The likelihood of issuing management earnings forecasts – Two-way ANOVA

Source	Sum of squares	Df	Mean square	F-statistics	p-value
Controllability	24.80	1	24.80	4.16	0.05**
Experience	33.25	1	33.25		
Control x Exp.	5.45	1	5.45	5.57	0.02**
Error	298.25	50		0.91	0.34

The participants were asked to use an 11-point Likert scale, where 0 and 10 respectively denote not at all likely and extremely likely, to indicate the likelihood that they would issue a management earnings forecast. Total likelihood is 100%. Two-tailed equivalent given directional prediction.

***, **, and * respectively denote 1%, 5% and 10%.

H3 predicts that the likelihood of less experienced managers to disclose earnings information based on whether or not the cause of unfavorable earnings is controllable or uncontrollable will differ more than the likelihood of more experienced managers in the same situations. Table 4 contrast testing presents the effect of controllability on the likelihood of more and less experienced managers issuing management earnings forecasts. The results indicate that the likelihood to disclose earnings forecast of more experienced managers when faced with the different causes is statistically insignificant (7.24 vs. 6.50, $p = 0.21$).

In contrast, less experienced managers are less willing

to disclose their failure when it is due to a controllable rather than an uncontrollable cause (6.28 vs. 4.23, $p = 0.01$). The results are consistent with our hypothesis. More experienced managers are more willing to disclose future negative performance information when it is due to either a controllable or an uncontrollable cause, while less experienced decision makers use the ambiguity of uncontrollable causes to hide their outcome failures. Figure 1 shows a summary of these results in graphic form.

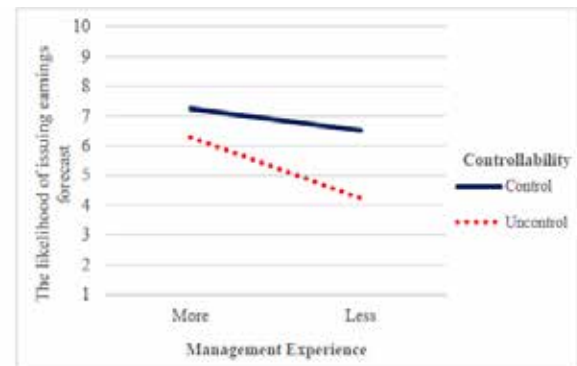
Table 4: The likelihood of issuing management earnings forecasts – Contrast testing

Source	Mean difference	t-statistics	p-value
The effect of controllability among <i>more</i> experienced managers			
Control vs. Uncontrol	0.74	0.84	0.21
The effect of controllability among <i>less</i> experienced managers			
Control vs. Uncontrol	2.05	2.29	0.01**

The participants were asked to use a Likert scale, where 0 and 10, respectively, denote not at all likely and extremely likely, to indicate the likelihood of issuing management earnings forecasts. Total likelihood is 100%. Two-tailed equivalent given directional prediction.

***, **, and *, respectively, denote 1%, 5%, and 10%.

Figure 1: The effect of controllability and management experience on the likelihood of issuing management earnings forecasts



Discussion and conclusion

This study used an experimental methodology to address how controllability and management experience influence managers' propensity to disclose their proprietary information in voluntary earnings forecasts. In an experiment, 54 MBA students played executive managers

and were asked to use an 11-point Likert scale to indicate the likelihood that they would issue an earnings forecast based on the available information. Controllability was manipulated into a controllable and an uncontrollable cause, and the management experience of each participant was based on their mean self-assessment scores.

In a negative outcome situation, both controllability and experience level played important roles in management's decision to disclose unfavorable future earnings information. Specifically, managers were more willing to disclose unfavorable earnings forecast when the cause was controllable than when it was uncontrollable. In addition, more experienced managers were more likely than less experienced managers to issue earnings forecasts regardless of whether or not the cause of the negative outcomes was controllable. Meanwhile, less experienced managers were more willing to disclose earnings forecasts when the cause of the negative outcomes was controllable than when it was uncontrollable.

These results have several implications for academics as well as practitioners. Firstly, this study shows that controllability impacts management's judgment when making voluntary disclosure decisions. Our findings are consistent with prior literature that suggests that when an individual has greater control over the circumstances, others assign less blame (Karasawa, 1991; Schwarzer & Weiner, 1991). Hence, managers are more willing to voluntarily disclose an unfavorable outcome when it is due to a controllable cause for which they can accept responsibility and avoid blame from market participants. Nevertheless, this study demonstrates that an uncontrollable cause of a failed outcome may cause management to withhold their private information from voluntary earnings forecasts.

Secondly, our findings compliment prior work regarding the benefits of experience on management disclosure decisions. This research provides rich insights into management practices regarding voluntary disclosure decisions, specifically the role that experience plays in management's decision-making behaviors. As psychology literature suggests, the attribution of blame and credit in specific situations are related to the actions that people choose to make (Baron & Ritov, 1994). In this case, more experienced managers strategically reveal disappointing future earnings in order to get less blame from market participants and gain more credit due to their willingness to communicate bad news in a timely manner.

Finally, this study contributes to the relevant regulators by illuminating how the experience levels of decision makers impact their voluntary disclosure decisions. Experience can reduce the effect of uncontrollability on disclosure behavior. More experienced decision makers are willing to disclose unfavorable outcomes regardless of whether the cause is controllable or uncontrollable. In contrast, less experienced managers are less likely to disclose negative earnings when the cause is uncontrollable than when it is controllable. Enhancing knowledge and experience via training programs offered by regulators may help less experienced managers to have greater consideration for the long-term consequences and be less myopic in their decision-making.

The limitations of this study should be noted. Firstly, this study bases the level of experience on the number of years of participants' working experience rather than experience in relevant management knowledge. Nevertheless, we used an experimental methodology to control for the effect of management knowledge including accounting, finance, and business strategy knowledge and show the impact of experience level *per se*. Secondly, this study does not account for the impact of forecast frequency on management disclosure decisions, as has been documented in a previous study (Wang & Tan, 2013). Despite these limitations, we believe that our analysis can contribute to future research on the impact of controllability and management experience on management disclosure decisions in other contexts.

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Innovative Job Service Model for Elder's Lifestyle and Quality of Life: A Review of the Literature

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Abstract

Easing into super-aged society is one of the most significant social transformations in Thailand during this decade. Baby boomer generation has become a major market segment of this ageing society. The demographic change has resulted in a new demand for variety of services because these come-to-be elders may have specific lifestyles and diverse characteristics. Therefore, the development of a desirable service that can enhance quality of life for these baby boomers can be quite challenging. The present manuscript reviews the literature on elderly lifestyle and quality of life. A service innovation model focusing on quality of life is proposed by matching the job with an elder's individual lifestyle.

Keywords

Elder, baby boomer, quality of life, lifestyle segmentation, service innovation

Introduction

To cope with ageing society, European Commission (2015) suggests that enhancing the capability of the old age people to prolong active and healthy stage may considerably reduce dependency on healthcare and social service, as well as increase society's growth and productivity. Pernambuco et al. (2012) also shows the same opinion that Active Lifestyle can help improving quality of life, especially when people are still able to perform their daily tasks well and independently during old age. This also comply with the Activity Theory which Havinghurst, Neugarten, and Tobin (1963) mentioned in 1963 that the elderly are satisfied in life, if they participate in activities and do not leave themselves lifeless. Havinghurst, Neugarten, and Tobin also suggests that people who stay vigorous and active would extend middle age period and decelerate impact of entering into old age. Many academicians also support this concept. Lemon, Bengtson, and Peterson (1972) found that vigor

and activeness affect directly on elder's life satisfaction. Likewise, Menec (2003) found that an increase in overall activity level results in an increase of happiness and ability to do activities. Besides, Pernambuco et al. (2012) found that physical activity improves well-being. Physical activity enhances physical movement, strength and the ability to perform routines without having to rely on others. Therefore, activity and independency are important factors of elderly life satisfaction.

According to an opinion poll conducted by "NIDA Poll" and "Center for Aging Society Research", the National Institute of Development Administration (NIDA) indicated that some elders still need to do self-employment. The result is consistent with the finding of Choorat, Sawangdee, and Arunraksombat (2012), which indicates that the elder does not only require care from their children or society. They attempt to help themselves in term of career, income, and well-being while some of them are still able to take care of themselves. There

are a number of retired elderly people who still have the knowledge, rich experiences and ability to be benefit for the society. Moreover, it found that elderly people are efficient employees. They tend to find new job opportunities that are different from their working experience after retirement. They have an ability to learn new skills and find new solutions effectively (Lohman, Byers-Connon, & Padilla, 2017).

Lohman et al. (2017) found that elderly people in the United States tend to work more. It is expected that from the year 2010 to the year 2020, the number of employees aged 55 or over 55 years old will increase from 31.4% to 36.6%. After retirement, the majority of elders participate in social activities, for example, be a volunteer for the community and society, be part-time employees or specialists in various fields in order to feel self-worth and be beneficial. In addition, 29 % of the elder working after retirement, works for the enjoyment and the other 23% works temporarily or part-time to earn extra income. Working after retirement is not only a hobby in spare time or socializing but working also allows the elderly to live their own way of life, encourage them to interact with the society in order to have better mental health and more stable income including enhancing their quality of life.

According to the literature review on job service for aging people, it shows that the studies on job recommendation suitable for the elderly focus on the overall characteristics of work. Sumalrot and Nochi Suksawai (2015) researched and recommended suitable job characteristics for senior people. They include less stress jobs, volunteer work, social well-known work, work with one's own interests, or welfare- oriented work. Although each elderly is likely to have a different need, past studies did not take individual differences into account for determining the right job.

Elderly lifestyle

The way of people live or we call as "Lifestyle", the scholars defined it as follows: Chaney (2002) describes that lifestyle is individuals and their different action plans. Therefore, by knowing a person's lifestyle, it helps to understand what people do, why they do, and what meaning of lifestyle they see themselves or project to others. Moreover, it has often been used to describe a living plan, time spending, and shopping (Kaynak & Kara, 2001). Peter and Olson (1996) describe that lifestyle is people's living plan which compile of how people engage in activities, interests, and opinions. In other words, lifestyle is the total definition of behavioral patterns which

influence consumer behaviors. Nonetheless, lifestyle is also influenced by consumer behavior. In summary, lifestyle is a system that combines attitudes, values, opinions, interests, and obvious behavior (Berkman & Gilson, 1986).

The concept of lifestyle was first established in the Marketing field by Lazer (1963). The lifestyle is based on the concept that each individual has a unique lifestyle plan. Each plan affects motivation in product and service selection. Plummer (1974) suggests that lifestyle research helps to understand a target customer and to develop viable marketing and communication plan with the target customer better.

Furthermore, Moschis and Pettigrew (2011) indicate that the way of living or the lifestyle of each person is a factor that affects the quality of later life. People are happy when they do things that they feel they can do and can manage well. Various activities can heal feelings such as depression and boredom. Subsequently, the vigorous way of life, doing various things all the time, especially the activities that involve and interact with the society such as volunteering and adult education, etc.; these activities all promote the satisfaction of life because the achievement of goals and things like the environment are in the control of the elderly. Elderly people can do so through different roles, whether volunteer, student or employee. Most people in the middle age or old age enjoys learning new things, for example, doing new hobbies or learning a new field.

Lifestyle + Activity = Life satisfaction → Quality of life

Based on the above literature review, it could be summarized as follows. Any activity that matches individual lifestyle can increase happiness and life satisfaction which in turn leads to a better quality of life.

In the marketing field, attention has been paid on lifestyle studies and research in order to explore consumer behavior and to study the factors that affect the consumer's life, work and leisure. Therefore, there are many studies and the development of tools to evaluate lifestyle. These tools will focus on evaluating the value of life, attitude, living status, etc. (Fong, Matsumoto, Lun, & Kimura, 2007). AIOs (Activities, Interest and Opinion is one of the most well-known methods of lifestyle study which has the following details.

The most widely used lifestyle model (Myriam Töpfer & Bug, 2015; Plummer, 1974) is the AIOs or AIO approach.

This approach is a quantitative measure in the form of activities, interests, and opinions about one selves and others. Invented by Wells and Tigert (1971), the AIOs measure is psychographics with the idea that lifestyle is about a person and the thing in the past, the nature of the living and the action that represents the time spent by individual (Activity), attention to the surrounding (Interest), and self-opinion (Opinion) relating to revealed behavior.

Table1 and Table 2 summarize the dimensions of lifestyles. The former with three dimensions is developed by Wells and Tigert (1971) and the latter by Plummer (1974) who expands the AIO approach to incorporate demographics and come up with four dimensions of lifestyle.

Table 1: Three Lifestyle-Dimensions in The AIO approach

Activities	Interests	Opinions
Work	Family	Themselves
Hobbies	Home	Social Issues
Social Events	Job	Politics
Vacation	Community	Business
Entertainment	Recreation	Economics
Club Member	Fashion	Educations
Community	Food	Products
Shopping	Media	Future
Sports	Achievements	Culture

- **Activities:** An action taken on various occasions, including work, hobbies, social events, vacation, entertainment, club membership, community activities, shopping, sports, etc.
- **Interests:** An interest on various things, events, and issues such as family, home, job, community, food, media, and success, etc.
- **Opinions:** A descriptive belief towards themselves, social issues, politics, business, economics, educations, products, future, and culture, etc.

A : Activities	I : Interests	O : Opinions	Demographics
Work	Family	Themselves	Age
Hobbies	Home	Social Issues	Education
Social Event	Job	Politics	Income
Vacation	Community	Business	Occupation
Entertainment	Fashion	Economy	Family Size
Club Membership	Food	Education	Dwelling
Community	Media	Product	City Size
Shopping	Achievement	Future	Life Cycle
Sport		Culture	

to WHO, quality of life is defined as an individual's perception of his or her place of existence in a society with a cultural and valued context. It involves goal, expectation, standard, and own idea. The concept of quality of life is influenced by physical health, mental health, personal beliefs, social relations as well as environment. Similarly, Chang and Lin (2015) define quality of life as a measure of physical and mental well-being through assessment of individual embedded in cultural contexts and social contexts. Coining a little bit difference, Diener and Seligman (2004) explain that quality of life involves various factors, including desirable physical and mental condition, and social outcomes which inclusive of participation in society, higher income level, increase of work satisfaction, longevity of life, and reduction of mental problem. Inoguchi and Fujii (2012) state that quality of life is an identification of individual physical, mental, and social status. Quality of life has a broader meaning than happiness and satisfaction. This is because quality of life also take

achievement, ambition, and memory into account. However, Seedsman (2002) has especially defined aging quality of life as an interaction of three factors: income security, level of physical and mental health, and kinship and social networks-living arrangements. Table 3 compared the elements of quality of life discussed in the literature. In sum, quality of life is a measure of the perceived self-esteem of four dimensions, including physical health, mental health, social network, and environment including income levels.

Table 3: Elements of quality of life

Elements of quality of life	WHO (1997)	Chang and Lin (2015)	Diener and Seligman (2004)	Inoguchi and Fujii (2012)	Seedsman (2002)
Physical health	/	/	/	/	/
Mental health	/	/	/	/	/
Social network	/		/	/	/
Environment (i.e. Revenue)	/	/	/		/
Culture		/			

In Thailand, research about the Thai elder's quality of life during the period of 2007 – 2017 is mostly quantitative study. The main tool being used to measure quality of life is drawn from WHO. The tool, “WHOQOL-BREF-THAI”, is developed from WHOQOL-BREF quality of life assessment (World Health Organization, 1996) by Mahatnirunkul, Tantipiwataskul, Phoompaisalchai, Wongsuwan, and Pornmanajirungkul (1997). This tool measures the quality of life in Thai people using 4 elements as follows:

- 1) Physical health such as daily activities, working ability, movement, and leisure.
- 2) Mental health such as self-esteem, optimistic, pessimistic, personal beliefs, and learning.
- 3) Social network such as personal relationship, and social support.
- 4) Environment such as income source, security, opportunity to learn new skills, and participation in recreation activity.

Conclusion

The researcher is interested in developing **innovative job service model** by elder's lifestyle for elderly quality of life. The proposed model, as shown in Figure 1, provides a new dimension of services that are developed to serve the needs of elderlies and to solve their quality of life issue. This job recommendation service consider not only the personal background, including demographics, geographic, but also elderly lifestyle and current quality of life. The model can help determine suitable job characteristics for each older person and in turns respond any problematic quality of life dimension of an elderly.

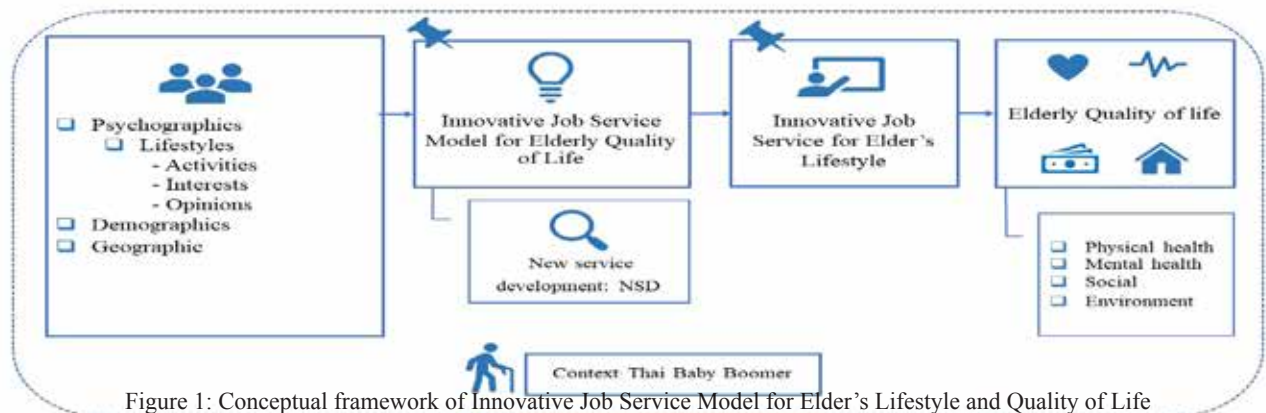


Figure 1: Conceptual framework of Innovative Job Service Model for Elder's Lifestyle and Quality of Life

The proposed innovative service model can be used by organizations that are responsible for elderly as a guideline to promote and improve quality of life for aging population in terms of physical health, mental health, and environment. It is expected that the implementation of this framework will result in an effective encouragement of aging people to take care of themselves and live happily during their sunset years.

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Innovative Model for the Promotion of Caring and Relationship between Caregivers and People with Dementia

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Abstract

The aging society in the 21st century has significantly changed the way an elderly lives. Although older people can live longer, some of them faces the brain disorder problem called dementia. At present in Thailand, there is approximately 229,000 people with dementia and it may reach as many as 450,000 in 2020. People with dementia suffer the loss of latency and memory-related problems, for example, losing things, forgetfulness, losing memory and knowledge, and indecisiveness. They also have behavior and communication problems such as depression, lack of concentration, verbal aggression, and behavior dangerous to self or others.

From the standpoint of the caregivers, the care taking of people with dementia for a long time can be very stressful because they may have encountered physical and verbal abuses. Therefore, caregivers require psychological care of their own. The present research aims to develop a communication means to promoting the relationship between caregivers and people with dementia. Memory therapy or Reminiscence therapy is used in conjunction with effective interpersonal communication method with the Speech to Text and Natural Language Processing (NLP) technology. This paper will review related literature, namely the reminiscence therapy and interpersonal communications with the enabling technologies.

Introduction

Even though the medical advances can prolong life, the body has to confront with degeneration, especially disorder of the brain; hence, dementia is the brain disorder and frequently found in elderly patients (Assantachai, 2013). Dementia causes elder people to lose their ability in terms of ideas, knowledge, memory, decision, emotional and behavioral problems (Muangpaisarn, 2010). Dementia is a chronic disease requiring caregivers to provide ongoing care Chansirikarn (2009) and to help them with basic routines, particularly those who have behavioral and emotional problems. With these problems, caregivers need management techniques to cope with them (Chansirikarn, 2009). Confrontation problems in caring dementia patients are likely to cause stress in caregivers (Dickens et al., 2009). Caregivers have their own personal

life and may have other work responsibility and the caring of dementia patients increases their workload. Moreover, caring for patients is a difficult and time-consuming task affecting on body and mind of caregivers. It has an effect on the efficiency of caring for people with dementia. If the caregivers have no knowledge and understanding of the disease, the treatment or the care. This can cause conflict, anger, no compassion toward the patient which may lead to abandonment and hurting patient physically and verbally (Sasat, 2008).

One of the studies of dementia caregivers shows that the stress of patients is associated with psychological well-being in various contexts (Ryff, 2014). In that study, a positive relationship between caregivers and patients directly involve the social factor support, especially the relationship with family members. Having good family relationships will affect psychological well-being of

a patient. Nevertheless, the study does not mention the process of how to build a good relationship. Neither does it address the importance of communication as the process of promoting good relationships between caregivers and dementia patients. Research in communication between caregivers and people with dementia (Thongyindee, et al., 2009) indicates that since the dementia patients have the difficulty with spoken languages, caregivers may use different methods to facilitate communication (Sukyist, 2001) along with interpersonal communication process (Hargie, 2016).

Effective communication between caregivers and patients means creating closeness, establishing good relationship and maintaining consistency so that the meanings of the information is completely received by the recipients. In the context of dementia, the roles of caregivers (Guzmán-García et al., 2013) is very important. Caregivers should have positive attitude towards caring for people with dementia. They must have patience and be creative in finding ways to deal with specific behavior problems of a patient. They should also have nursing skills that consistent with the stage or symptom of the people with dementia.

People with dementia should practice their brains by doing activities, they prefer participation in social events. At the same time, there should be advanced brain training including mindfulness and meditation, imaginative thinking or creating a picture, cognitive stimulation, and remembrance. Caregivers should use pictures and written message description as the communication media. Both caregivers and patients need to talk and do activities that the patient likes, these will help making the mood of both parties better and forget what they might have preoccupied about the situation. Thus, caregivers should always communicate to people with dementia in order to improve their relationships.

The literature review reveals that there is a lack of linkage and development in terms of the introduction of these communication elements to enhance the relationship between caregivers and patients in the context of dementia. This present innovative research aims at promoting interpersonal relationships between caregivers and people with dementia. The research proposes an implementation of the Reminiscence Therapy (Lazar et al., 2014) in which patients are reminded of past events. This therapy requires the cooperation of the caregivers to provide accurate information for the benefit of treatment. The most commonly used Reminiscence Therapy today is to gather

participants at a certain place and get them to take part in activities. However, this method of engagement can put a burden on caregivers because of its inconvenience. Thus, an alternative way of promoting interactions between a caregiver and a patient is to develop an application that can be self-used within a household. The proposed application will be designed to combine the formal Reminiscence Therapy that uses only visual and narration with Speech Recognition system (Besacier et al., 2013). In turns, this system will capture the audio and translates the interactions into texts (Speech to Text). The system will have a feature of storing recording information in order to verify the accuracy and analyze the patient's disease progression. The underlying technology includes the Natural Language Processing (NLP) (Machiraju & Modi, 2017), which is a way to study and understand the linguistic structure. The proposed application system will apply the knowledge of artificial intelligence using knowledge representation with the corpus for messages that analyze the sentence patterns or catch words in order to develop the most effective and successful, innovative application.

Reminiscence therapy

In this research, we will develop the product model innovation for caring and promoting the relationship between the caregivers and the dementia people so that both parties can develop mental well-being by using Reminiscence Therapy, which is a remembrance by the concept of Hamilton (1985). The reminiscence aims for people to restore past experiences that help the elderly proud, feel that they are valuable, happy, and hope to survive for the next day.

The remembrance is also a process of thinking about their past experiences in many areas and makes the elderly feels proud because they feel that they have value, happy, and be able to reminisce. According to Hamilton (1992, cited in Buchanan, 2016), a remembrance consists of 4 phases as follows:

1. Memory is the selection of events, the thoughts, past satisfied and that feeling remained in memory forever.
2. Experiencing is the stage of finding the meaning of an event, thinking of one's own feelings toward that event, and telling the impression that the event has meaning or value to the person. Therefore, it allows the person to remember that memory all the time and choose to share.
3. Social Interaction is a period of sharing experiences of

feelings, emotions and thoughts that people have with that memory to others and also consider to help enhance social interaction and encourage self-expression.

4. Closure is the time for relationship termination, which is the significant phrase. When it reaches at the time to terminate the agreement, it is an opportunity for the elderly to summarize what happens during the relationship building process.

The types of reminiscence were proposed by Wong and Watt (1991, cited in Meléndez, 2015). They classify reminiscence that can be used for data analysis as follows:

1. *Integrative Reminiscence* focuses on the integration between past and present in order to indicate the meaning of feelings, self-worth, self-acceptance and others as well as self-conflict.
2. *Instrumental Reminiscence* is a reminder of the latter by drawing past experiences that affect the current problem solving and can draw past experiences by using media.
3. *Transmissive Reminiscence* is a storytelling and reminiscence of experiences with the purpose of exchanging information and pleasantness.
4. *Escapist Reminiscence* is a mechanism with self-defense emphasizing on past praise and current criticism.
5. *Obsessive reminiscence* is a form of reminiscence defined as a reminder of past events. These events remain unresolved and made the people feel failure combining negative feelings and past problem experiences and current positive feelings for expecting to add more positive feelings to the present life.
6. *Narrative reminiscence* is a reminiscence, using the nature of the lecture rather than the interpretation or meaning evaluation. It still retains the autobiographical style or text without adding, encouraging elderly people to think about past events as their independent roles (Hamilton, 1992, cited in Buchanan, 2016).

The skills in operating the reminiscence program in facilitating the elderly to the past remembrance. It is necessary to start by creating a good relationship between the elderly and the caregivers which the principle of good relationship building requires various basic skills of counseling in many areas, such as listening skills with the attention to repetition, feeling reflection, observation, interpretation and encouragement as well as questioning skills (Hamilton, 1992, cited in Buchanan, 2016).

According to Capuzzi and Gross (1998, cited in Haight & Burnside, 2005), the subject or topic selection of reminiscence has the following guidelines: 1. The process starts from memories of past experiences related to age, culture, education, ethics, and a different gender. The previous research will choose the subject according to the life span, including children, young people, late-teens, middle-aged, or elderly. 2. The selection of subjects or topics should emphasize people in the same age group. 3. Other selections include seasonal or festival topics, hobbies, landmarks, special days, special events, food, home and garden, beloved cars, and adherence by using sensory stimulation, vision, hearing, smell and taste (Haight & Burnside, 2005).

The reminiscence in the elderly with dementia can reduce cognitive decline. This is because the dementia elderly at the early stages will have a short-term memory deficiency but their long-term memory remains good. By stimulating memory that allows the elderly to think about the past is an easier way than to let the elderly remember new things. Many studies find that the cognitive ability of the elderly increases with this method. The reminiscence effects both the increase in Psychological well-being and enhancement of cognitive ability to think better. In contrast, the number of studies on reminiscence therapy of dementia is still small in Thailand.

Interpersonal communications

Based on a literature review of the communication needs of caregivers and chronic disease patients (Fried et al., 2005), caregivers and patients have the need to communicate. In addition, communications also affect the relationship between caregivers and patients and stress conditions for both parties. Harry Sullivan's interpersonal theory (2013) begins to study psychoanalysis by emphasizing that behavior is the result of a person's relationship with another person in the society. As humans, society is the product of social interactions. Physiological change is indicative of the individual's needs and the direction of growth. Early life experiences have a great influence on the mental health of individuals in their later life. An important experience is anxiety received from childhood raising and interpersonal relationships. The interpersonal relationship theory believes that a person is motivated to reach 2 goals: one goal is for satisfaction which includes physiological needs such as hunger, rest and sleep, sexual needs, etc.; the other goal is for security which is a need for a happy existence and the want for recognition in the society as a

result from having an interpersonal relationship. Both of these needs reside in a relationship. If a person receives sufficient achievement in both aspects of the goals, he will not be anxious. The development of relationships has the elements of social and psychological environments such as, time to build a relationship between each other, sharing of information, mutual trust, and love and mutual control (Chuang, 2005). A frequent communication will help the building of a long-lasting relationship.

Based on the literature review in the communication between the people (Hargie, 2016), effective communication would mean the closeness of relationship. The consistency of information exchanges between messengers and recipients will lead to immaculate meaning of communication. Consequently, interpersonal communication is meant to:

1. Communication is to creating mutual understanding. The emphasis is on correctly understand the content or information by people working together, such as internal communication for a joint working group.
2. Communication is for creating a passion. General communication is not only focused on communication but also information. Having a shared mood and satisfaction will enhance the building of relationships and feelings of mutual commitment.
3. Communication is for influencing attitude. Failure in communication is sometimes caused by a lack of understanding of different ideas and attitudes. Therefore, creating a mutual understanding can make them survive together.
4. Communication is to enhance the relationship. Another important factor that can affect communication success is good feelings. Therefore, communication to create a relationship between each other will help to communicate efficiently in the future.
5. Communication is to cause action as needed. One of the objective of communication is to create a common purpose, to share opinions and to act together toward what all of them want.

Based on the literature review of interpersonal communication factors, creating familiarity and friendly communications between people would make convincing and persuasion easier. Face-to-face communication can make it possible to modify the content, issue, and method that are appropriate to the conversation. Face-to-face is one of the most used channels of interpersonal communication in promoting interpersonal relationships

between two persons. However, interpersonal communication process for promoting relationships is not mentioned in caregivers and patients, especially those with dementia, who often have communication problems because of their memory systems. As a result, this becomes an interest topic to study the way interpersonal communications can be used to promote the relationship between caregivers and people with dementia such that psychological well-beings can be achieved by both parties.

Conclusion

Communication is an important process in relationship promotion between caregivers and people with dementia. Since people with dementia would have a difficulty in speaking, caregivers must use various methods to communicate in the easiest possible manner. Effective interpersonal communication between caregivers and people with dementia can directly influence this dyadic relationship. To develop a more efficient model of this unique interpersonal communication process, technologies such as Speech to text and Natural Language Processing will be incorporated into the by Reminiscence Therapy framework. Specifically, a caregiver will input relevant personal information for people with dementia and use the information to help them do a brain exercise with a reminiscence of their past. It is hoped that the innovative mobile application to be developed to promote interpersonal relationship and psychological well-being between caregivers and people with dementia will become one of the most sought after product in dementia home healthcare.

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An Innovative Process Model for Elderly Health Promotion Using a Personal Health Record Platform

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Abstract

Similar to many countries around the world, Thailand is accelerating into an aging society. Thus, the self-care behavior of an elderly is becoming very important. One of the key factors to promote self-care and health behavior change of an elderly is to digitize the personal health information so that it is readily available when needed by all parties involved, especially for health promotion purpose. This study aims to identify a conceptual framework that supports the development of an elderly personal health record platform which innovatively promote elderly's health. The development of the framework draws from persuasive technology design and personal health record literature. Both research areas are integrated into a proposed framework that can serve as a foundation for the behavioral and technological development in the digital health industry so that an effective health promotion strategy can be generated.

Keywords

Innovative process model, health promotion, personal health record platform, elderly people, conceptual framework

Introduction

The population aged 60 or older accounts for 19% of the entire population in Thailand as of 2017 and is expected to account for 31% by 2030. Thailand is accelerating into an aging society, also common in other countries of the world. How to improve the self-care behavior of the elderly is becoming more important. Health promotion is a concept that focuses on the process of preventing, curing, or recovering from diseases that is appropriate for each person condition. Health Belief Model (Becker et al., 1977; Rosenstock, 1974) is a psychological model that attempts to explain and preventive health behavior. Personal health information management is a key factor to promote self-care awareness and health behavior change. There are many researchers have developed technology for health promotion tools which mostly focus on physical activities. (Carroll, Fiscella, Epstein, Sanders,

& Williams, 2012; Chung et al., 2017)

However, the current situation of health information management is largely in the form of electronic medical records (EHRs) which is recorded in the hospital by healthcare providers like doctors or nurses. They use many methods as a questionnaire, interview, observation, etc. In addition, daily life behaviors which are a background of illness happen is not focused. The health promotion project may be ineffective.

Personal Health Record (PHR) is an integrated tool of health information across multiple channels which are managed by an individual to self-care and self-monitoring of their health. PHR could help the user to retain own health data standardization which could be exchanged with others immediately. Moreover, the user can access own data anywhere and anytime. The data which is recorded in the PHR system can efficiently improve the solution

design, implementation, guidelines, and evaluation. In the past, several studies about PHP is focused on topics such as adoption, acceptance, implementation, and the structure of the PHP system. (Archer, Fevrier-Thomas, Lokker, McKibbin, & Straus, 2011; Roehrs, da Costa, da Rosa Righi, & de Oliveira, 2017)

This study aims to propose an innovative process model for elderly health promotion using a personal health record platform. The self-recorded data will become effective information that can be used to explore opportunities for creating innovation in the future. The proposed model will apply theories, principles, concepts, strategies, and integrate with an appropriate persuasive technology in order to promote and encourage the elderly to become more self-awareness of their own healthcare. Analysis of health information which is recorded by elderly people can be a guideline for health agencies and healthcare providers to improve the way to support quality of life for the elderly in terms of health and well-being, both physically and mentally.

Persuasive technology design

Technology has become a part of human life because they are easier and more convenient to access a wide range of communication network and connected devices including mobile phones, computers, tablets, smartphones or smart watches. We spend a lot of times with those devices like an addiction.

Technology developers follow the principle of behavioral design as an attractive tool. The concept of behavioral design has been invented by BJ Fogg using a conceptual framework called the Fogg Behavior Model (FBM), which describes the influence of digital interfaces or the intersection between computer technology such as video games, devices or intermediaries, and persuasive concepts like behavioral change, motivation, opinion change, compliance, or attitude change. The intercepted areas are called "CAPTOLOGY", stands for Computers As Persuasive Technologies (Figure 1), which design interactions for change as behavior change, feeling change, reinforcement, or thoughts about some issues or actions (Fogg, 1999; Hamari, Koivisto, & Pakkanen, 2014).

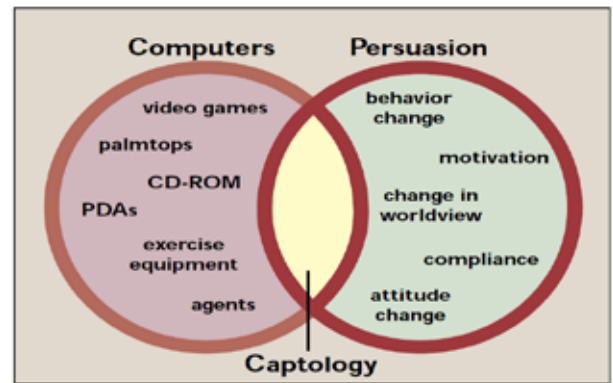


Figure 1 – CAPTOLOGY (Fogg, 1999)

Fogg (2009a) describes that successful designers must understand the factors that could change their target behavior. The design will combine between the benefits and capabilities of technology with psychological factors for changing to target behavior systematically.

To persuade someone doing something or creating the target behavior comes from their motivation, ability, and trigger which are occurring at the same time. In addition, the benefits of persuasive technology can encourage users to engage with technology or the system. It can also influence the user in a different way such as behavior change, attitude change, or lifestyle changes.

The persuasive technology design has three key factors to consider for changing to the target behavior (Figure 2) as follows:

Motivation is aimed at convincing people. Motivation can be determined by pleasure or pain, hope or fear, social acceptance or rejection.

Ability or readiness to do, the goal is the same as the motivation which increases the level of effort by a simple design. Ability can be determined by time, money, physical effort, brain cycles, social deviance or non-routine.

Trigger which is sparking, facilitating, signaling, etc. The stimulus is most important.



Figure 2 - The Fogg Behavior Model has three factors: motivation, ability, and triggers (Fogg, 2009a)

The persuasive technology design (Fogg, 2009b) is a guideline for setting milestone to track and control. There are 8 interconnected steps as shown in Figure 3 is beginning with choosing a simple behavior to target, choosing a target audience, finding what is preventing the target behavior, choosing an appropriate channel, finding relevant examples of persuasive technology, imitating it, testing and iterating quickly, and evaluation based on behavior, also expanding on success.

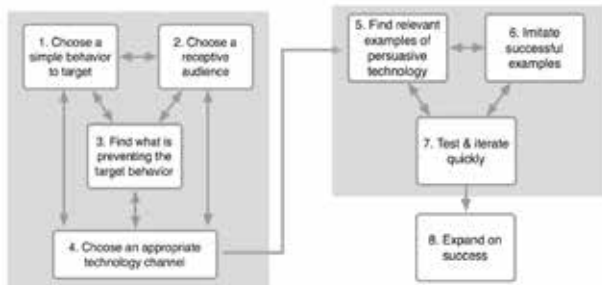


Figure 3 – Interconnected phases of the persuasive technology design (Fogg, 2009b)

The successful technologies have been developed by Google, Facebook, and Yahoo. Most companies start with a small scale of experimental or offering or limited service approach. They are willing to fail fast, learn and adapt quickly. When more users adopt the technology, more information would be available. Then they can change the design, increase usability, or add new services later.

By the way, health behaviors can be determined by the elements of the *Health Belief Model* or the health model (Becker et al., 1977; Rosenstock, 1974). The model is developed from social psychology to explain how people deciding about their health behavior. The components of the health belief system are 6 factors as shown in Figure 4 (Hochbaum, Rosenstock, & Kegels, 1952).



Figure 4 – Health Belief Model (Hochbaum et al., 1952)

In previous studies, the technology development was aimed at promoting and interfering with health as well

as managing many diseases. In addition, they focused on a one-size-fits-all approach, specifically the persuasion process, which suggests that there is only one suitable way for everyone or for many user groups rather than a tailor-made approach for each individual person (Orji, 2014). Some studies addresses the technology development for specific users (Purpura, Schwanda, Williams, Stubler, & Sengers, 2011) and in particular cultural groups (Oyibo, 2016). However, they did not study the motivational strategies to stimulate health behavior change based on personality differences or individual motivation. Mostly, the study of technology platform development included the use of mobile, game, website, and social network. Moreover, the limitation of persuasive technology study is the integration between behavioral theory and technology design (Orji & Moffatt, 2016).

In conclusion, persuasive technology design is a concept that combines technology with behavioral and psychological concepts to define, modify or change behaviors and/or attitude little by little for systematic goal achievement (Fogg, 2002; Oinas-Kukkonen & Harjumaa, 2009). The target behavior comes from motivation, ability, and triggers by the eight development steps of persuasive technology design (Fogg, 2009b).

Personal health record: PHR

Information is an important factor in health promotion and healthcare systems, particularly data collection, applications, communications and data storage. Most of the health information is in a hospital where the medical or health care providers record and collect information about demographics, treatment history, drug therapy, drug allergy, immunization, laboratory analysis, X-ray film, vital signs, also personal data such as age, weight, height, etc.

Medical or health care providers need to continually plan healthcare for promoting their patients or users to concern about their health by self-care management. Apart from electronic medical records (EHR) or files in hospital, there are contained several ways to study and collect health information that are adapted from the human factors engineering tool: learning the limitations of people to design systems (Gurses, 2016) such as cognitive walkthrough, contextual inquiry, observation, interviews, questionnaires and surveys, focus group, and prototyping. However, advancement in information technology and consumer behavior change (Roehrs et al., 2017) are likely

to boost up the self-care management of one's health, the important starting point to promote well-being. The *Personal Health Record* (PHR) is one of the tools to promote self-care behavior. Many organizations focus on the value of this tool, for example, the Digital Economy Promotion Agency in Thailand, National Electronics and Computer Technology Center in Thailand, etc. These organizations have developed the information technology system for collecting personal health record to support the healthcare system such that individuals can access, manage and edit their own data. They can also get the right to share information with authorized persons such as family members or health care providers. The information is useful for the individual, caregivers, and health care providers to develop tools, processes or methods to promote self-care management about health, disease prevention or appropriate treatment. Recorded health data such as weight, height, blood pressure monitor, daily activities, doctor's appointment, medical conditions or treatment, etc. can be used to communicate with a health care provider (Archer et al., 2011; Roehrs et al., 2017; Tang, Ash, Bates, Overhage, & Sands, 2006)

Tang et al. (2006) classifies personal health data collection using complexity and independence and divide the characteristics of personal health records into 3 types (Figure 5) as follows:

Standalone, each person can record data and manage the information by themselves but cannot share information with others. Data can be collected and recorded in a computer, electronic devices or paper storage. The advantage of this type of data collection method is that the patients or users can fully manage their own information with utmost controllability.

Tethered is an extension of the file or electronic medical records from the hospital or a health service provider sharing to the patients or users. The advantage is reliable information. The disadvantage is that patients or users will have less control power.

Interconnected is in the middle between standalone and tethered where patients or users can manage their own information and can retrieve information from the hospital. However, the disadvantage is the connections between multiple channels or many providers may result in an additional system sophistication.

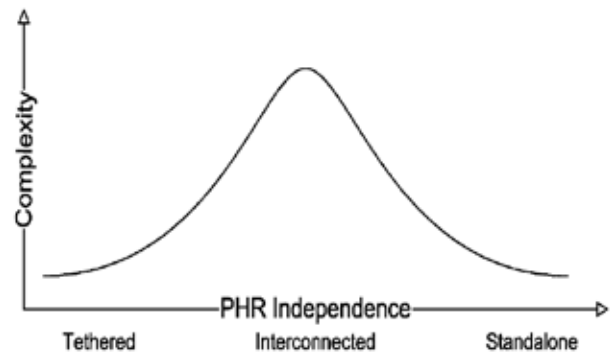


Figure 5 – Classification of personal health data collection
(Tang et al., 2006)

PHR is a type of information technology for managing health information which includes 3 main components (Kaelber, Jha, Johnston, Middleton, & Bates, 2008) as follows:

Data is a component that is exchanged, analyzed, and stored in diverse information sources such as health information, laboratory analysis results, drug historical data, and drug allergy, etc.

Infrastructure is a computer platform, software, a website that can exchange information and process health data.

Applications are the capabilities and outcomes of health information systems. In addition, this is an intermediate tool which links between information and infrastructure to show doctor's appointment, treatment or self-care guidelines, also knowledge sharing about the disease.

Therefore, the personal health record is a central system that patients or users can control by themselves regarding data collection, information sharing, information exchange, and self-management system. This system is useful and will connect with many stakeholders of health service providers such as pharmacists, radiology equipment, laboratories, and life insurance.

The concept of personal health record structure (Figure 6) shows that it will be connected, exchanged and linked information between EHR files in the hospital and medical providers in various fields. However, the limitation of the personal health record system is about the standard, data reliability, security, and privacy.

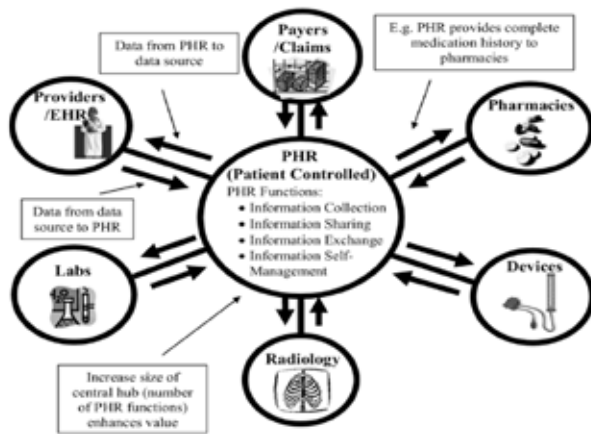


Figure 6 – The concept of a personal health record structure
(Kaelber et al., 2008)

When individuals record their own health data systematically through electronic tools, the information will be available and further developed by connecting to other types of health-supporting technology as Health Blockchain (Figure 7). Blockchain technology is a peer-to-peer computing or network which is distributed or delegated away from a central, authoritative location or group.

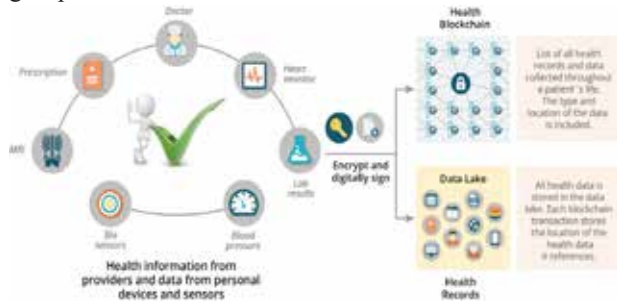


Figure 7 – An example of connectivity between personal health record and health blockchain for the health care system
(Kaelber et al., 2008)

Starting with doctors, caregivers, health services providers, individual create health information in many forms, including normal document or automatic data processing then record it into the system which will create a digital signature or encryption via mobile applications. After that, data will be sent to a data lake or a variety of storage which will be registered to the individual blockchain system. When the health information is changed, it will alert to the owner and related persons (Ekblaw, Azaria, Halamka, & Lippman, 2016; Linn & Koo, 2016).

Alloghani et al. (2016) showed the process of data collection using various technologies to support health (Figure 8). This research focused on using the mobile application system to monitor the health of children

for preventing obesity. It can check the location and share information via social network such as Instagram, Facebook, etc. which can share information with friends or parents coupled with Internet of Things (IoT) technology, such as calorie measuring machines and monitoring devices via bluetooth, for example, temperature sensor, motion detection, or sleep tracking, blood pressure monitor, body weight scale, etc. The data can be transferred to the back-end or central system that can be shared with the physician, parents. They can access the information for follow-up and can provide feedback to promote weight control and diet programs.

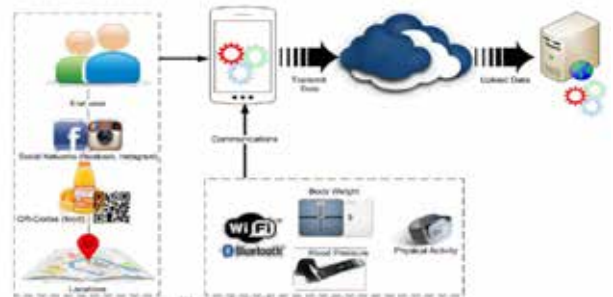


Figure 8 – The process of data collection (Alloghani et al., 2016)

In addition, Alyami and Song (2016) reviewed literature during the year 2008 - 2016 regarding obstacles of personal health record technology and application adoption which can be divided into 6 main groups as motivation, usability, ownership, interoperability, privacy and security, and portability. Therefore, Alyami and Song (2016) have developed the level of individual health competency and technology acceptance to use personal health record from the study of Pak and Song (2016). There are five levels as following;

1. Lack of interest in taking care of their health, lack of health knowledge, and lack of motivation, this group will not accept the use of personal health record applications.
2. Aware of important changes with the intention to change or improve for health. This group has considered personal health recording but still has not accepted to use it.
3. Implementation of adjustments according to some healthcare plans and decide according to their own health management. This group accepts to use personal health record but they take the time to implement slowly.
4. Using self-monitoring tools and control the results regularly. This group accepts some personal health record applications and may use some features.

5. Preventive healthcare, responding to rapid health changes, and find opportunities to improve. This group will monitor and control their own health by using continuous personal health record.

About the platform, Mettler and Eurich (2012) define that the platform is a combination of valuable activities of a service provider such as service development, technical support, service delivery in the system. Edelman (2015) adds that the platform can help to understand the business model. The successful platform must connect between users. For example, the sales platform must be connected between buyers and sellers. Reservation services must be connected between tourists and hotel service providers to facilitate a convenient access. Moreover, a platform covers the software integration, application programs, functions, modules, or system components which are connected between websites, products, services, and businesses. The platform components have the back-end systems which are mostly a cloud-based system which supports large numbers of data and transaction together with an application programming interface (API) for external developers to be able to access services or retrieve data. Technology owner or developer can further develop or create value for applications, programs, functions or modules (Chang, Chiang, Wu, & Chang, 2016; dos Santos, Shishido, Junior, & Eler, 2017).

An example of a platform which interacts with health application programs through mobile and health equipment as shown in Figure 9. It shows that the relevant persons in the platform include patients, families and healthcare professionals. The platform uses a cloud-based system to be a center for connecting and managing data. In addition, the patient's data collection is about abnormal health monitoring results and proactive communication channel connecting between the patient and the caregiver who is authorized to be able to access the information only.

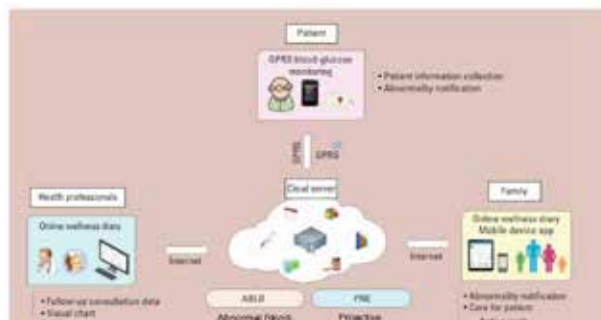


Figure 9 – an example of a platform which interacts with health application programs through mobile and health equipment (Chang et al., 2016)

In conclusion, the study of a personal health record platform development for seniors must consider the motivation guidelines of technology acceptance, user-friendly design, privacy, security, and trustworthiness. Furthermore, the personality and ability of the user are very important factors for the system development to be accepted and effective. Moreover, the design and development should be a platform to record personalized health data because the information could be valuable for further developing, creating new products, services or businesses, also being a part of the way to promote, support, and create innovation in the future.

Health promotion framework

With recent advancement in devices, mobile applications, and communication channel, the health care system are integrating digital technologies to enhance the self-care behavior for health promotion purpose. Thus, the study of personal health information has become an important topic of interest in recent years. This study develop a conceptual framework that supports the development of an elderly personal health record platform which innovatively promotes elderly's health as shown in Figure 10. This development research employs three major theories during the requirement analysis phase and concentrates on the design and implementation of personal health record and self-awareness that would prevent and monitor hypertension by using the context of elderly in Thailand.

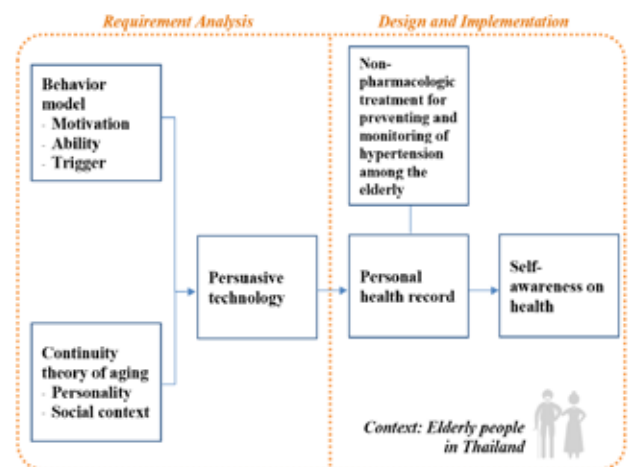


Figure 10 - A conceptual framework that supports the development of an elderly personal health record platform

In conclusion, the development of the health promotion framework in this paper draws from the literature reviews in persuasive technology design and personal health record. Both research areas can serve as a foundation for

the behavioral and technological development in the digital health industry especially for generating an effective health promotion strategy on self-care management.

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Role of Learning and Motivation on Creativity

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Abstract

This study empirically tests the relationship of creativity adaptability with two identified variables- intrinsic motivation and learning adaptability. The effect of these variables on creativity was examined. We found that learning adaptability is positively related to creativity adaptability while intrinsic motivation is not significant with creativity. Aim of this paper is to discuss these findings for management practice.

Keywords

Creativity, learning, adaptability, motivation, self-determination theory, psychology.

Introduction

Creativity can be defined as the generation of novel and useful ideas. Creativity is vital for every organization to survive in long term. With the workplace becoming more and more complex, it is necessary to come up with new ideas and adapt with change. IBM conducted a survey of 1500 CEOs from 60 countries and 33 industrialists. It found that more than rigor, vision and management discipline, creativity is upmost the top priority in this dynamic and changing world (Tomasco, 2010). Researchers have given considerable attention to what causes creativity and also its consequences. (Zhou & Shalley, 2008). Creativity is definitely desired in an organization but it is difficult to obtain. Organizations are structured form with reward system, which tend to suppress creativity (Amabile, 1998). Management research scholars have taken keen interest in the factors which develop and curb creativity. Two theories of creativity advocate that it is a social-process (Amabile, 1983; Woodman, Sawyer, & Griffin, 1993). Organizations invest in research and development to encourage innovation. Research shows ample amount of evidence that creativity to a large extent contributes to effectiveness, survival and innovation of an organization (Amabile, 1996; Nonaka, 1991). Innovation is the implementation of the generated idea. Some researchers have advocated major differentiation between innovation and creativity (e.g., Oldham & Cummings, 1996; Rank,

Pace, & Frese, 2004) while others have suggested that creativity occurs in initial stages of the innovation. Also, creativity is a cyclical process of generation of idea and then its implementation (Paulus, 2002). The motivation for being creative depends on goals, beliefs and emotions. When employees feel a sense of purpose in their work, it boosts productivity. Some researchers emphasize on leadership (Shin & Zhou, 2003) while some on learning orientation (Redmond, Mumford, & Teach, 1993). Adaptability is at its core, the capacity to change, including both the competence and the motivation to do so (Hall & Chandler, 2005). Learning adaptability is gaining new skills and abilities. The eagerness to learn drives behavior. Learning and creativity are related. Learning has been found to be crucial for creativity (Weisberg, 1999). If so, does being more adaptable learner imply creativity adaptability? Studies have shown that learning orientation enhances cross cultural adjustment. (Gong & Fan, 2006). Intrinsic motivation expands an employee's energy on curiosity, desire to learn and interest (Ryan & Deci, 2000). Intrinsic motivation is thought to enhance creativity by increasing positive effect, cognitive flexibility, risk taking, and persistence (Shalley, Zhou, & Oldham, 2004). Earlier studies have proved empirically that by gaining knowledge and skills, a person can heighten creativity. Creativity and learning adaptability are the dimensions of employee adaptability. With globalization, jobs require employees to work in different countries with individuals of different

cultures and values (Black, 1990; Noe & Ford, 1992). Employees work in complex and changing environment where being adaptable, flexible and versatile is essential in learning to operate efficiently and effectively.

“Intrinsic motivation has been theorized to be a key ingredient for creativity” (Amabile, 1996). It is the zeal to perform an activity as it challenges them and also out of interest. It does not require external rewards to involve in the task. Humans have a tendency to be most creative when they are intrinsically motivated. Mostly out of interest, passion, enjoyment and satisfaction not by extrinsic motivators. Studies have shown that intrinsic motivation can be weakened by extrinsic motivators. But extrinsic motivators cannot be entirely removed as money is a necessity. Motivation and creativity also depends on the work environment. Ryan and Deci (2000: 71) have come up with self-determination theory and after many years of research they concluded that intrinsic motivation focuses attention on “activities that have the appeal of novelty.” Emotions theorists advocate that intrinsic motivation leads to positive affect (e.g., Silvia, 2008). It broadens our cognitive range which expands our attention to broader set of ideas, increases ability to detect connection among ideas (Amabile, Barsade, Mueller, & Staw, 2005). idea generation and budding solutions can be widened by taking interest in learning which enhances their flexibility, courage to take through intrinsic motivation as postulated by self-determination theory (Gagne’ & Deci, 2005). Intrinsic motivation with persistence fosters confidence and curiosity to do challenging, unfamiliar and complex tasks (Gagne’ & Deci, 2005). (Madjar, Oldham & Pratt, 2002; Shalley, Gilson & Blum, 2000). Most of the studies have measured creativity by rating through people who have gained knowledge in their field of work or interest. Laboratory studies conducted are rated by judges to rate the level of creativity of ideas generated by the respondents (e.g., Shalley, 1995; Zhou, 1998). On the other hand, most researchers have done their studies by asking supervisors to rate an employee’s creativity (e.g., George & Zhou, 2001; Tierney & Farmer, 2002).

Hypothesis

Hypothesis 1

Learning adaptability positively related to creativity adaptability.

Hypothesis 2

Intrinsic motivation positively related to creativity adaptability.

Methods

Data was collected from 101 employees of public sector undertaking. Employees consisted of 96 males and 5 females. Respondents were explained the details of the sample. Confidentiality of their responses was made.

Age

Age of the respondents was in categories including less than 25, 25 -30, 31 – 35, 36- 40, 41 – 45, 46 – 50, 50+. Average age of our sample was 31 to 35 years.

Measures

Creativity adaptability

Adaptability was calculated by employee adaptability scale (Pulakos et al. 2000, Ployhart & Bliese, 2006), was used to assess the creativity adaptability consisting of five items. 7 point Likert scale was used ranging from 1 = strongly disagree to 7 = strongly agree. 5 items of creativity variable includes creative minds, looking problems from different angle and developing analysis.

Learning adaptability

It was calculated by employee adaptability scale (Pulakos et al. 2000, Ployhart & Bliese, 2006), was used to assess the learning adaptability consisting of nine items. 7 point Likert scale was used ranging from 1 = strongly disagree to 7 = strongly agree. 5 items of creativity variable includes creative minds, looking problems from different angle and developing analysis. This 9 items variable includes eagerness to learn, staying up to date and learning new skills for their profession. Organizational learning may be increased by building on existing capabilities or developing new ones. The latter involves a change in culture, the former involves improving current capabilities.

Intrinsic motivation

Employee’s intrinsic motivation was calculated by using the scale of WIEMS known as Work Extrinsic and Intrinsic Motivation Scale (Tremblay et al. 2009). It consisted of 3 items. This scale is based on the self-determination theory given by Deci and Ryan (1985). We used a 7 point Likert scale ranging from 1=strongly disagree to 7=strongly agree where respondents rated the extent to which each item corresponds to the reason why they were involved in their work.

Results

Gathered data was tabulated and mean, standard deviation etc. was derived. SPSS software (version 24.0) was used.

Relationships between the predictors and the dependent variable was calculated through regression and coefficient of correlation.

Table 1 represents the mean, standard deviation and correlation among the variables. Cronbach's alpha of the variables was between .58 to .91.

Table 1

Variables	Mean	Std. Deviation
CRE1	5.3069	1.08391
CRE2	5.5842	1.05135
CRE3	5.5743	1.02320
CRE4	5.2178	1.22151
CRE5	5.3960	1.08701
LEA1	5.9505	1.03321
LEA2	5.7228	1.07814
LEA3	5.6634	.94103
LEA4	5.4455	1.06278
LEA5	5.4653	1.12751
LEA6	5.5842	.96195
LEA7	4.9901	1.33787
LEA8	5.8119	1.06502
LEA9	5.7228	1.04037

Table 2: Descriptive statistics: Mean, standard deviation and correlation

Variables	Mean	Std. Dev.	1	2	3
Learning Adaptability	5.41	.92	(.91)		
Intrinsic Motivation	5.55	.89	17	(.58)	
Creativity Adaptability	5.59	.83	65	18	(.89)

Hypothesis 1: Table 3 shows a coefficient of correlation of .658 showing a highly significant value ($p < .01$). It signifies that learning adaptability and creativity adaptability are highly related. Therefore, we accept the first hypotheses. Our result suggests that around 42% of creativity is explained by learning. Being a more adaptable learner in new and changing environment promotes creativity.

Table 3

Model	R	R ²	Adj. R ²	Std. Err of Estimate
1	.658	.433	.427	.69840

Hypothesis 2: Our data analysis (table 4) showed a coefficient of correlation of .188 which is not significant ($p > .05$). So, we reject this hypothesis. Reasons for non-significant results can be the small sample size.

Table 4

Model	R	R ²	Adj. R ²	Std. Err of Estimate
1	.188	.025	.91065	.91065

Discussion and conclusions

The motivation of the study was to empirically test predictors of creativity. It provides insight into the relationship of learning and creativity adaptability in the public sector organization. Redmond et al.(1993) found no significant effect for learning orientation on creativity. Our study found significant effect. Learning orientation is likely to boost creativity in long term with time and experience since time and patience is needed to explore, create and learn (Grant. 2011). Learning adaptability may have a stronger effect on creativity adaptability since it is actual personal estimation of an individual.

Intrinsic motivation was not significantly related with creativity. Earlier studies have shown positive results but some have shown vague empirical results (Shalley, Zhou, & Oldham, 2004) or weaker non-significant associations (e.g., Dewett, 2007; Shalley & Perry-Smith, 2001; Perry-Smith, 2006). Shalley (2004) advocates that deeper knowledge along with empirical investigations of motivation processes are required to affect creativity.

Creativity requires many things, a challenging job, supportive bosses, proper feedback, evaluation and an environment which promotes learning. But there are some other characteristics which do not paint a clear picture. Studies suggest that supportive co-workers, less deadlines and few contingent financial rewards have an effect on employees to display creativity. But there are also studies that showed that these characteristics had non-significant or opposite results. One reason can be that 3 items questionnaire of intrinsic motivation was not adequate for the study.

Motivation shapes our cognitive processing, human notice, contemplate and store information which is associated with our aspirations (Nickerson, 1998, Kunda, 1990). Therefore, employees tend to learn, explore and engage with curiosity when they are intrinsically motivated directing to novel ideas. Another important ingredient is the usefulness of the idea. Usefulness of an

idea is directly related to the capacity of solving problems of people. This involves taking others opinions on how it can benefit society as a whole which can be useful in developing ideas (Mohrman, Gibson, & Mohrman, 2001).

Classical psychological theorists have suggested that intrinsic motivation can generate novel ideas but cannot bring creativity due to absence of usefulness for the ideas for society (Barron, 1963).

When interest in an activity rises it widens our thinking and can produce new connections out of unfamiliar things. (Silvia 2008: 58). Amabile (1996: 118) postulated that initial phases of creative procedure, “where the novelty of the outcome is importantly determined, may require intrinsic motivation,” while leading to the “stages where the novelty of the work (though still important) is less crucial,” other motivators “may serve to focus and energize the individual toward getting the job done in an appropriate way.” It brings us to the importance of psychological functioning that pulls concentration towards usefulness which allows employees to direct unique ideas through intrinsic motivation towards creativity.

It calls for identifying moderators or mediators between motivation and creativity which can help to gain more insight (George, 2007; Shalley et al., 2004). Grant and Berry (2011) focuses on the psychological processes in creativity. Grant, 2008) identifies prosocial motivation as a variable which strengthens the relationship between creativity and motivation. Employees in public sector have low sense of doing a social service for the society. Laboratory studies showed that creativity in writing and artwork is linked with intrinsic motivation but it is not the same case for business problems (Grant, 2011).

Managerial implications

It is clear now that creativity can benefit the organizations. Employees being creatively adaptable can increase productivity of the firm. Managers can benefit from hiring people with high learning adaptability. It is important to note that selecting employees with high learning adaptability will assure creativity. It is also crucial to bestow conditions to allow learning to flourish and harvest creativity.

Limitations and future scope

This study bears some limitations. First, other variables effecting creativity adaptability must also be considered. Future studies must consider variables such as cultural, social, relationship with employer, relationship with

colleagues, rewards, leadership, job complexity and situational factors. Secondly, cross sectional research design method was used. Longitudinal research design is advised for future work to identify the effect of long term learning environment on creativity. Another limitation is that only public sector undertaking was tested. Future studies can compare the studies of public and private sectors. Collection of data can be from alternate sources to indicate different interests like employer can rate employees adaptability rate. Also, our sample size is small. Larger sample size can help in providing more insight into their relationships. Also, this study can be done in other sectors like artists, marketing, academics, schools etc. This can benefit them to focus on making a learning environment. Despite these limitations, this study helps in filling gaps.

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A Study on the Priority Affecting the Succession of the Family Firm Using AHP

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Abstract

The significance of family businesses in each country can be confirmed through various researches. Nevertheless, research on family business and succession is not enough for them. In this study, we will use AHP to identify the priority factors influencing the succession in the view of successor. Factors used in the first tier are the relationship with the succeesee, the management ability of the successor, the self-efficacy of the successor and succession plan. In the second tier, we will set up three detailed factors for the first each tier.

Keywords

Successor, family business, succession, AHP

Introduction

Management by family members is a common type of company and family businesses are an important axis for helping the stable development of the national economy and creating a productive society(Kim, 1999). Although the family business is different depend on each definition, the impact of family business on employment and GDP in each country is significant worldwide(Sharma et al., 2001).

80~98% of enterprises in the world can be defined as family businesses(Poza, 2010). Spain and Latin America also have family businesses that affect to GDP over 60%. In Italy, the country has many family businesses which have a long history. They usually started a small family business and have tried to get flexible management strategy including family business culture. This is the main reason how they have survived in a long time(Choi et al., 2017).

According to Nam, almost 70% of enterprises in South Korea are family businesses(Nam, 2007). Despite being a crucial part of the society, especially in South Korea, there is a lack of data and research on small and medium enterprises which have characteristics of family business (Hong, 2001) and the society has many problems such as a negative view to family businesses.

Literature review

The most important purpose of a family business that plays an important role in the national economy is to succeed the succession of the family business that means the sustainability of the business(Kim et al., 2016). Archiving the aim, family businesses prefer to give the authority to next generations, because they want to keep their family culture and values(Hwang et al., 2013).

However, the succession is not simple and uniform. Also, it is not a temporary event of the enterprise(Danco, 1980). For making the successful guideline, many previous researches studied various variables(Nam, 2013), but there are not enough researches on various variables affecting the succession of the family business and the priority from the view of successors.

Dyer emphasized the three most important issues for a family business, the first issue is the succession, the second issue is the succession and the third issue is the succession(Dyer, 1986). This means that the succession is an important part which family members have to figure out the right way for the sustainability of family business.

Definition of variables

Definition of family business

There is no unified definition of the family business. This means that research about the family business is not

enough and needs unification of the expression. Many researchers have tried to define the family business, but the definition of family business is slightly different. Westhead contended that the ownership could be a criterion to define the company. If family members have more than half ownership, the enterprise could be called as the family business(Westhead, 2003). One of another view, it adds participation of family members in half ownership(Shanker and Astranchan, 1996).

Shanker and Astranchan tried to divide the definition as three concepts. The first type is a broad concept. In this concept, family members do not participate to business and they make the strategic direction of the business. The second type is a middle concept. This concept means that some of family members are participating in the business and the members usually are the founder. The third concept is a narrow concept. The narrow concept signifies that more than one generation are included in the family business.

The relationship between successees and successors

In the previous studies, various variables are influencing on the succession of the family business, one of them is the relationship between the successee and the successor. Usually, the successee is a leader has management authority in the family business and is an important family member who makes decisions about the succession(Kim et al., 2011). In the view of the successor, this means that succession cannot be done smoothly without the successee's support(Lansberg, 1988). In other word, for the successful succession, the relationship between the successee and successor should be admirable. The relationship can be expressed with the level of the mutual trust(Kim et al., 2013, Baek et al., 2017), sharing vision of the enterprise(Kim et al., 2013, Hwang, 2012), communication between them(Song et al., 2017, Morris et al., 1997, Shin, 2013)

Management ability of Successors

One of the factors influencing the succession of the family business is the successor's management ability. The managerial capacity and potential of the successor can be an important criterion when the successee selects the successor, and the high managerial ability can affect the company performance during the succession and after the succession. This successor's management ability can be represented by various variables and definitions. According to previous research, the successor's business competence(Morris et al., 1997, Kang et al., 2009), education and training(Kim et al., 2016, Hwang 2008), and interpersonal management ability(Nam, 2005, Kim et al., 2016) can define and describe the successor's management ability.

Table 1 – Variable tiers

Tier	Variable 1	Variable 2	Variable 3	Variable 4
Tier 1	Relationship	Management ability	Self-efficacy	Succession plan
Tier 2	level of mutual trust	Business competence	willingness of succession	Finance plan
	sharing vision of the enterprise	Education and training	confidence of overcoming crisis	Leadership transformation plan
	communication	Interpersonal management ability	confidence of achieving objectives	Human-organization management plan

Self-efficacy of Successors

Self-efficacy is known as one of the positive psychology that can lead to improvement of the organization's performance by the concept derived from the social learning theory of Bandura (1982). In other words, it can be said as a psychological mechanism that positively affects the performance of the organization. The importance of self-efficacy of the successor has been studied variously in previous studies, and it has been shown that self-efficacy of the successor in the succession is also affecting the satisfaction of the successor. Self-efficacy can be expressed by the willingness of the succession(Venter et al., 2005, Jung et al., 2016), confidence of overcoming crisis(Hwang 2012), confidence of achieving objectives(Seo 2015, Lim et al., 2016, Hwang 2012).

Succession Plan

The succession of the family business is a crucial event that requires a great deal of competence over a long period of time, rather than a temporary event. For the successful succession, family members should be accompanied with various plans.

Succession plans could be defined as finance plan(Morris et al. 1997, Song 2004, Hwang 2008), leadership transformation plan(Cho 2012, Nam 2013, Hwang 2012) and human-organization management plan(Kim et al. 2018, Kim et al. 2009).

Table 1 summarizes the variables and hierarchies used in this study and table 2 shows the definition of the variables used in this study.

Methods

This study uses AHP(Analytic Hierarchy Process). AHP was developed by Thomas L. Satty in 1970. The AHP method is a decision support method that can layer the evaluation criteria between mutually exclusive alternatives and prioritize them with the weights calculated through the pairwise comparison between the elements belonging to each hierarchy. AHP has characterizations by layering to evaluate the relative importance and to obtain logical consistency. AHP is easy to intuitively understand various complicated criteria by component, and can calculate the weight of each classification element and make a comprehensive judgment by numerical scale. AHP method consists of five steps ; stratification of the problem, the pairwise comparison between the elements, the square matrix and the weight estimation, the measurement of consistency ratio and the comprehensive judgment.

Table 2. Definition of variables

Tier	Tier 1	Tier 2	Definition of the variables
Variables	Relationship	Level of mutual trust	1. The level of bonding between the successee and the successor 2. Supporting the relationship based on the mutual trust
		Sharing vision of the enterprise	1. Sharing the vision of the family business 2. Sharing the core value of the family business and the aim of the family business
		communication	1. The level of communication 2. Whether opinions can be reconciled with each other 3. Making important decisions after communication
	Management ability	Business competence	1. Experience in work and the position entering the family business 2. Complexity of knowledge, skill and behavior patterns 3. Personal attributes such as motivation
		Education and training	1. Training the decision-making and successor's insight 2. Knowledge of work and the organization 3. Understanding of the business philosophy and the business
		Interpersonal management ability	1. Skills to manage the others 2. Human network capabilities with external and internal access
	Self-efficacy	Willingness of succession	1. The level of the successor's wish to takes over the family business 2. The level of the successor's pride in the succession 3. The spontaneous willingness of the successor
		Confidence of overcoming crisis	1. The level of the confidence to overcome difficult situations
		Confidence of achieving objectives	1. Awareness of new business opportunities and assurance of achieving goals for planned work 2. A belief of the successor's ability to take over the family business and to lead the firms with responsibility
	Succession plan	Finance plan	1. The plan to respond to taxes incurred in succession
		Leadership transformation plan	1. The transfer plan of the successee's skill, knowledge and ownership 2. The intention of the successee
		Human-organization management plan	1. The degree of linkage with management strategy and performance objectives 2. Mid- to long-term HRM plan 3. The plan for improving firm's competitiveness and performance

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Research Design to Compare the Impacts of Two Different Types of Chatbots on Mobile Shopping Behavior: Rule-based and Natural Language Processing-based

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Abstract

As more and more people are interested in chatbot and more companies are introducing chatbot, research on chatbot service users is needed. In this study, we want to compare rule-based chatbots with natural language processing-based chatbots. The comparison section was divided into five sections : usefulness, usability, searchability, reliability and attractiveness, and chatbot was compared in the mobile shopping chatbot field. By comparing the rules-based and natural language-based chatbots, we seek to derive each improvement and identify which chatbots are more efficient.

Keywords

Chatbot, rule-based chatbot, natural language processing -based chatbot, mobile shopping, artificial intelligence, Interpark's Talkjipsa, Lotte.com's Samantha.

1. Introduction

Purpose and background of research

AI(Artificial Intelligence), the advanced information and communication technology of the 4th industrial Revolution, is also drawing attention as the fourth industrial revolution has become a hot topic recently. Artificial intelligence refers to a technology that realizes human learning, reasoning, and understanding of natural language through computer programs. As these artificial intelligence technologies grow, the rapid development of the mobile shopping environment has prompted many companies to invest and pay attention to chatbot, which is part of AI technology. Chat bot is a chatting robot that recognizes human language based on AI and big data analysis technology so that questions can be answered and logical reasoning can be made.

Reason why people are interested in Chatbot is because chatbot is expected to be used as platform for IoT and big data during 4th Industrial Revolution and most of chatbot service is provided through app in mobile environment. Chatbot is currently being used in various

fields, and its use is outstanding in distribution, and is actively used by Lotte.com, Interpark, and 11th Street in Korea. As more and more companies are interested in chatbot, it is necessary to conduct an empirical study on user experience for chatbot service users. Companies are interested in chatbot, but research on consumers who use it for their own mobile shopping is only minor. It is easy to see the disappearance of innovative technologies and products because they do not have a proper marketing strategy even when they produce corporate innovations or products. Therefore, in this study, we will propose improvements by comparing Interpark's 'talkjipsa', which are currently serviced in Korea based on rule base, and Lotte.com's Samantha, which is a natural language processing based service, through rule based evaluation and natural language learning-based user experience evaluation.

2. Theoretical background

2-1. Chatbot

According to Li Lian(2016), Oh se-wook(2016)'s research, chatbot is an interactive agent that refers to an

interactive interface system that interacts with humans based on an artificial intelligence system, chatbot is short for chatting and robot that automatically performs tasks. Recently, Facebook Messenger, Whatsapp, Tchat, and Line launched an intelligent messenger service through the learning of user habits and rules, along with the rapid change in the ICT paradigm from mobile OS to the messenger platform. These will allow users to search for information or use services while communicating with the system through instant messaging. By sending a message to a user through instant messenger and answering a real-time response, it can induce variety of activities to users and even understand rules of a user's context through mutual dialogue. This is why it is seen as a new opportunity to utilize Big Data. It implements variety of services such as Internet search, news, shopping, and payment with real-life sense such as talking with real people by talking with a robot that has human intelligence such as language skills and physical and logical reasoning through artificial intelligence.

In advance research on chatbot, Oh se-wook(2016) was able to see the case study of news chatbot and the direction of the media chatbot's normative, downward, and upward approach, while Kim jin-tae, Jung sang-rae, Jung hoon(2017) were able to examine the technology trends of chatbot in specific areas. In addition, the analysis of trends and examples by Ryu han-seok(2017) shows the use of chatbot's actual business, such as reducing costs as a customer service channel, generating revenues as a commerce channel, and increasing customer loyalty as a marketing channel. Recently, a lot of research has been done on the trends and implications of chatbot, and the necessity and use of chatbot is being studied in various ways.

2-2. Rule base

A rule recognition-based system is a system in which the knowledge of task professionals in a particular field is expressed by rules and can be applied to problem solving in that field. The general characteristics of rule recognition-based systems: First, human knowledge can be expressed in a Conditional If-Then Rules. Second, depending on the size of the type base, the technology can increase exponentially and determine the target value by combining certain factor values. Third, selecting and combining rules suitable for a particular situation can solve complex problems across a wide range. Fourth, it allows you to select the optimal implementation order of

the rules. Fifth, natural language can be used to describe the inference path until the results are derived. Sixth, a rule recognition-based system consists of five parts: Knowledge base, Rules Engine or Inference Engine, Working Memory, Conflict Resolution Strategies, and the User Interface. Seventh, the knowledge base includes the Rules, Factor, and Domain Knowledge to address the problem.

In a rule recognition-based system, the knowledge base can be described as a set of rules, and each rule can express relationships, recommendations, directives, strategies, experiences, etc. and have an IF (condition) THEN (action) structure. Once the conditions of a rule are met, the rulefor recognition-based system applies the rule to perform the corresponding activity or to determine the target value.

The rule engine performs an inference process that addresses the problems entered in the working memory through an interface using knowledge base of knowledge. The rule engine infers what rules should be applied using the factors that the user enters through the interface, according to the rules stored in the knowledge base. It is not too much to say that a rule engine is a skeleton of a rule recognition-based system implemented using a rule engine.

2-3. Natural language processing base

Natural language processing is an important goal of artificial intelligence, which deals with the understanding, creation and analysis of human language using computers. Natural language is not a language that is artificially created by humans, but a language that people use to communicate with each other in their daily lives. Natural language comprehension refers to the conversion of these natural words for computer processing by analyzing meaning, form and conversation. Translating computer-processed output into text, graphic, and voice according to human convenience, such as information retrieval, automatic translation, question response, and interpretation is an example of natural language processing. According to Lee joo-young, Lim hae-chang(2008), an interactive expert system that sends and receives information between humans and machines through voice or text is intended to perform natural dialogue through a natural language interface. Park dong-ah(2017)'s research presented the direction of chatbot in the field of public services based on artificial intelligence

through technical analysis of chatbot service, which is an interactive agent of artificial intelligence, and through the provision of scalable service using big data. Although it was studied in the early days of artificial intelligence research, it was only recently that it developed along with computer performance improvements that led to service delivery. Based on prior research, interest in chatbot has been growing and introduction companies are increasing. Along with the increase in the need for chatbot, research on the interpersonal and relational aspects of natural language processing base, which is a requirement to interact effectively with users, is actively underway. Companies are interested in chatbot, but research on consumers who use it for their own mobile shopping is only minor. Therefore, in this study, we want to learn about the closeness of natural language processing base.

2-4. Evaluate the user experience

Honeycomb Model is a diagram of the honeycomb model introduced by Peter Movie: Search 2.0: Evolution of Discovery (2006).

The Honeycomb model serves as a good tool to enable a wider range of conversations beyond usability. It is appropriate at the beginning rather than the end of the task, and it is possible to see what characteristics have been overlooked by looking at the picture, and to actively discuss goals and priorities. It makes the priority "what will I sacrifice for what" to be decided clearly, not unconsciously. It is also a tool to identify the user experience from a holistic perspective. It helps understand the concept of user experience, which was considered simply usability, by using a five-fold approach to the user experience, by creating a clearer and simpler structure. The user experience assessment is highly useful as a practical guideline to examine which aspects of the application have been applied for each situation and can be used as a basis for analyzing surrounding cases and competitors.

In this study, we reconstructed the Honeycomb model to reconstruct five evaluation elements except for value and accessibility. Its goal is to compare rule based chatbot in South Korea with natural language processing based chatbot in South Korea through the user experience of this study. Therefore, Honeycomb Model was chosen as criteria for evaluating the user experience of this study. The definitions for each element are as follows.

Evaluation element	Definition
Usefulness	It is necessary to consider whether users are truly useful when using products, services, systems, etc.
Usability	There should be no concern or difficulty in the availability and the ability to skip the learning process in the use of a product or service.
Searchability	The ability of users to find the information or services they need on their own is a means of complementing variables that developers have not thought of.
Reliability	Backgrounds that are not directly intended for a product or service should also be reliable to use. This is becoming more and more important.
Attractiveness	should be able to satisfy five senses from an emotional point of view, and satisfy the psychological part of being satisfied with usability.

Table 1 - user experience assessment elements

3. Research method

3-1. A research model

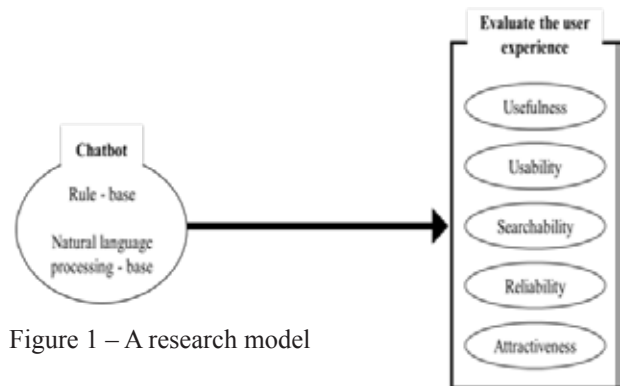


Figure 1 – A research model

3-2. An subject of study

Interpark's Talkjipsa, a rule based chatbot



Figure 2 - Interpark's Talkjipsa

The most representative chatbot in South Korea that uses rule recognition-based chatbot is 'Talkjipsa' that is provided by Interpark. As a rule recognition technology that identifies shapes, characters, and sounds through machines, 'Talkjipsa' in Interpark is a rule recognition-based chatbot that draws answers according to predefined Q&A. Therefore, Interpark's Chatbot service is designed to search for products that users want while gradually making choices on a pre-determined category (rule). For example, in order to search for "black T-shirts," the method is to search for clothes, go through men's clothing, and gradually reduce the range to the next color in the T-shirt category. (Equipment->Male Clothing-> T-shirt category)

Lotte.com's Samantha, a natural language processing-based chatbot



Figure 3 – Lotte.com's Samantha

This is a chatbot service based on natural language processing base in South Korea, which started chatbot service much later than Interpark's 'Talkjipsa'. 'Samantha' by Lotte.com, using natural language processing technology that recognizes and processes human's everyday language in computers is a chatbot based on natural language processing that understands user-entered conversations in a natural language and answers them accordingly.

Therefore, unlike Interpark's 'Talkjipsa', Lotte.com's 'Samantha' type the text "Find me a black T-shirt" to search for the "black T-shirt," and the chatbot itself can search for the products you want.

Interpark's 'Talkjipsa', which is based on rule recognition, and Lotte.com's 'Samantha', which is based on natural language processing, show a clear difference in technologies related to chatbot services that are being adopted in South Korea. Therefore, we are going to compare the usability assessment between the two to derive the improvement plans for rule recognition and natural language processing-based chatbot's respectively.

3-3. An experimental study

In this study, participants were organized to try both 'Talkjipsa' of Interpark which is based on rule based chatbot, and 'Samantha' of Lotte.com which is based on natural language processing based chatbot. Participants were 20s people who use smartphones the most in South Korea in South Korea. The experimental methods and processes that are commonly given to user survey participants are as follows.

Common element

Participant	Hanyang university, business students Men and women in the second, third and fourth grades	
Attendance benefits	Souvenir, class participation score	
Experiment performer	Cho Nam-jae, Lim Ye-ji, Lim Jung-hun	
Number of experiments	Two times in total	
	Rule base #1 Natural language processing base #1	
Test kit	Talkjipsa (Rule-based chatbot) Samantha (Natural language processing based chatbot)	
Experimental time	10minute + 10minute = total 20minute	
Experimental goals	To purchase 'sneakers' using chatbot and then cancel them	
Experimental method and processes	Group 1	1. Rule base(Talkjipsa) experiment 2. Fill out the questionnaire 3. Natural language processing(Samantha) experiment 4. Fill out the questionnaire
	Group 2	1. Natural language processing(Samantha) experiment 2. Fill out the questionnaire 3. Rule base(Talkjipsa) experiment 4. Fill out the questionnaire
Survey	Questionnaires with the same questionnaires Total 2	
	Rule base #1 Natural language processing base #1	

Table 2 – common experimental elements

Rule base (Talkjipsa) experimental process

1	Explanation of Talkjipsa to participants
	Talkjipsa is a chatbot developed by Interpark that is based on rule base. It's a chatbot that keeps categories down.
2	Participants log on to Interpark app and run a 'Talkjipsa' chatbot.
3	Participants search for sneakers through 'Talkjipsa'.
4	Participants find the sneakers they want and then buy them.
5	Participants cancel the purchased product after completing the purchase.
6	Participants check the end time after canceling.
7	Participants fill out a questionnaire.

Table 3 - Rule base (Talkjipsa) experimental process

Natural language processing base (Samantha) experimental process

1	Explanation of Samantha to participants
	Samantha, a chatbot developed by Lotte.com, is a chatbot based on natural language processing. It's a chatbot that you can type into as naturally as you can talk to an AI speaker.
2	Participants log on to Lotte.com app and run a 'Samantha' chatbot.
3	Participants search for sneakers through 'Samantha'.
4	Participants find the sneakers they want and then buy them.
5	Participants cancel the purchased product after completing the purchase.
6	Participants check the end time after canceling.
7	Participants fill out a questionnaire.

Table 4 - Natural language processing base (Samantha) experimental process

3-4. A survey study

To evaluate and compare chatbot services, it has designed a survey based on evaluation of user experiences.

In this study, we are going to verify the effect of adjusting the rule base and natural language learning base by comparing two chatbot services which is currently available in Korea, 'Interpark's Talkjipsa', which serves based on rule recognition, and 'Lotte.com's Samantha', which is a natural language processing based service. The user was also given an assessment of 16 questions in the table in the form of a recorder scale. Of the scales 1 to 5,

1 was not at all, 2 was not, 3 was normal, 4 was so, and 5 was very so. The scores for each question were added together to derive the average value for each question/factor, up to the second decimal place. The survey results by assessment element are as follows:

Evaluation element	Definition
Usefulness	• Has the time to research for products been reduced? • Did you get the help of chatbot when you purchased the product? • Is it more convenient than traditional shopping methods?
Usability	• Does the entire process from product search to order seamlessly connect? • Does the process of canceling or changing an order smoothly connect? • Does the overall screen configuration feel easy to see? • Is it easy to find the product you want?
Searchability	• Can we arrange products recommended by Chatbot in a different way? • Can similar products be searched? • Does it provide further search if there is no product you want?
Reliability	• Does the product display enough details? • Do you trust the price of the chatbot offers? • Do you trust the information of products recommended by chatbot?
Attractiveness	• Have you found a product that you like? • How satisfied are you with the product you purchased? • Would you like to use it again?

Table 5 - Survey contents by assessment element

4. An expected result

We would like to discuss the expected results of the assessment elements availability, usability, searchability, reliability and attractiveness.

Because Usefulness is part of reduced search time and convenience, it is likely that natural language processing based chatbot(Samantha) that searches using a way of recognizing what a person is saying will receive higher scores than rule based chatbot(Talkjipsa) that searches using a way of gradually reducing categories.

The usability section is about the process of purchasing and canceling, and the portion of the screen's. In this section, it is likely that chatbot based on natural language processing(Samantha) that can be used as easily as spoken will receive lower scores than rule based chatbot(Talkjipsa) that has to go through multiple steps.

The searchability section is about arranging products in various ways, searching for similar products, and making additional searches if you don't have a product you want. In this section, natural language processing based chatbot(Samantha) is likely to receive lower scores than rule based chatbot(Talkjipsa) because Samantha is likely to run out of data because it hasn't been long since it was released.

The reliability section is about trusting information about products, price for products searched and information about products recommended. It is expected that similar results will come from reliability of both chatbots.

The attractiveness section is about satisfaction with using chatbot. In the attractiveness, it is likely that rule based chatbot(Talkjipsa) will earn higher scores than natural language processing based chatbots(Samantha).

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An Effect of Organizational Citizenship Behavior on the Effectiveness of Information Security

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Abstract

This study aims to understand the interactions between external pressures and organizational factors in the course of information security (IS) innovation within institution theory. This study developed a research model elucidating the effects of mimetic isomorphism on legitimacy, and the relationships between legitimacy and organizational IS effectiveness. Additionally, this study investigated the roles of organizational supports and cynicism in IS effectiveness.

Keywords

Mimetic isomorphism, OCB, cynicism

Introduction

Electronic government (e-government), defined as “utilizing the Internet and the World-Wide-Web for delivering government information and services to citizens, has recently become a new support system for public governance. As security issues have become the third most important barrier to e-government, after the lack of financial resources and technologies, most governments have been confronted with the task of successful and continuous IS innovation within their organizations.

Governments’ IS innovation, based on mimetic isomorphism, requires legitimacy, systematic supports for changes, and standard settings based on the confidence of organizational members. Governments’ IS innovation entails those profound and efficacious changes and organizational supports. Further, the importance of applying institution theory as a framework of investigating IS has been suggested.

An organization’s culture, norms, attitudes, and social features may shape the structures, processes, characteristics, and scope of IS, and organizational members might resist misaligned IS, which results in its ineffectiveness.

This study attempted to illuminate the factors affecting organizational changes for IS innovation through the case of the Korean national government.

Research literature review

Theoretical background

This study focused on the organizational factors affecting IS effectiveness within the institution theory of isomorphism and legitimacy, policy diffusion theory, emphasizing organizational factors, may be a similar approach; however, this study used institution theory, which highlights the role of external pressures on organizational changes and motivation to comply with external pressures and legitimacy. Institution theory has had a great impact on the understanding of organizational changes, and some studies investigated public-sector organizations within the institutional approach.

Institution theory considers isomorphism a central, but multi-dimensional, concept. As organizations involve externally legitimated measures and requisites, isomorphism embraces the effects of organizations’ external environments on how they are structured. Accordingly, isomorphism incorporates the organizational changes forced by external environments.

Isomorphism

Mimetic isomorphism is useful when uncertainty becomes an issue, which requires considerable search costs and utilizes institutional rules as substitutes for technical rules. Moreover, March (1981) argued that mimetic isomorphism is derived from the obligatory action that reflects the automatic adoption of institutionalized actions by social actors. Mimetic isomorphism involves adopting

the successful, rational, and prudent strategies or practices used in similar organizations. Organizational changes derived from mimetic isomorphism tend to be diffused in an epidemic way.

It is possible that national governments attempt to mimic overseas governments that appear to be highly influential, visible, and prestigious. IS innovation of e-government may involve not only technological changes, but also practical and structural changes, as well as power-relationship changes (Jun and Weare, 2010), which entails a legitimacy issue and organizational innovation supports. The organizational supports for IS innovation lead to organizational changes because finance, technologies, strategies (Meyer and Goes, 1988; Nelson and Kletke, 1990), and social structures (Hsu et al., 2012) are adjusted and restructured in the course of this innovation.

Thus, this study hypothesizes that:

(H1) Mimetic isomorphism toward IS predicts organizational supports for IS innovation.

(H2) Mimetic isomorphism toward IS predicts legitimacy of IS.

(H3) Mimetic isomorphism toward IS negatively influences organizational cynicism toward IS.

Legitimacy

Isomorphism related to different attributes or levels may lead to different types of legitimacy (Westphal et al., 1997). Kaganer et al. (2010) identified four main forms of legitimacy, based on institutional bases and legitimation mechanisms, including cognitive, pragmatic, normative, and regulative legitimacy. Though their forms of legitimacy are useful to develop strategies for IT innovation, this study focuses on sources of legitimacy, such as organizational factors intertwined with environmental pressures, in the course of investigating IS innovation. There are three types of legitimacy including individual legitimacy stems from high authorities, individual legitimacy based on accepted social structures, and organizational legitimacy derived from the prevalent cultural values of organizations (Woodward et al., 1996). As mimetic isomorphism at the organizational level may lead to organizational legitimacy, this study uses organizational legitimacy as its central construct.

This study proposes that:

(H4) Legitimacy positively affects IS effectiveness.

Cynicism

Cynicism is “a negative attitude toward one’s employing organization, comprising three dimensions: (1) a belief that the organization lacks integrity; (2) negative affect toward the organization; and (3) tendencies to disparaging and critical behaviors toward the organization that are consistent with these beliefs and affect”.

Organizational cynics criticize their organization for the lack of integrity and sincerity, unfair operation, and prevalent unscrupulous behavior. From the management perspective, organizational cynicism, as a barrier to the enforcement of organizational changes, was viewed as organizational members’ reactions to inappropriately implemented changes and managerial incapacity.

Organizational cynicism tends to deny the organizational integrity fortified by the legitimacy led by mimetic isomorphism. Hence, this study proposes that:

(H5) Organizational cynicism toward IS negatively affects legitimacy of IS.

(H6) Organizational cynicism toward IS negatively affects IS effectiveness.

Innovation

The innovation of information systems directly influences and reshapes organizations only where IT and services have an impact on the business processes and products. This innovation, employed in an organization, can be considered crucial to its competitive survival and success. The innovation of information systems delivers a new information product or service, a new information technology, or a new administrative arrangement.

The construct of IS effectiveness is used to measure the extent to which the level of security is enhanced by the security measures. Based on the literature, this study hypothesizes:

(H7) Organizational innovation support positively influences IS effectiveness.

Organizational legitimacy can be perceived as a constraint and guideline of the actions of organizations (Dowling and Pfeffer, 1975; Woodward et al, 1996). Organizations’ operations, outdated with societal requirements, will be altered in order to better conform to social values (Woodward et al, 1996). To know whether the activities of organizational innovation support on IS can strengthen the organizational legitimacy, the following hypothesis is proposed:

(H8) Organizational innovation support positively influences organizational legitimacy.

Organizational citizenship behavior(OCB)

Many researchers have suggested that OCB has a positive relationship with organizational effectiveness, efficiency, and success. OCB can lead to success in information systems and OCB can also improve individual compliance with information security policies. However, the plausibility of the assumption that there is a strong relationship between OCBs and an organizational effectiveness has been little explored in empirical studies. Organizational effectiveness is needed to define individual- or unit-level performance. Moreover,

OCB-performance studies have paid little attention to the question of whether aggregate OCBs are relevant to overall organizational effectiveness. OCB promotes the effective functioning of an organization

Thus, this study hypothesizes that:

(H9) OCB positively moderates the relationship between organizational innovation support and IS effectiveness.

(H10) OCB positively moderates the relationship between organizational legitimacy and IS effectiveness.

(H11) OCB positively moderates the relationship between cynicism and IS effectiveness.

The effectiveness of information systems security(iss)

The effectiveness of the IS depends on the way the security contents are addressed in the policy, and how the content is communicated to users. Moreover, the effectiveness is increased when IS is adopted by employees in practical actions. At the organizational level, the nature of organizations plays an important role in the successful implementation and adoption of the security policy. The success criterion is the organizational legitimacy at which employees follow a code of best practice or culture, and comply with security policy.

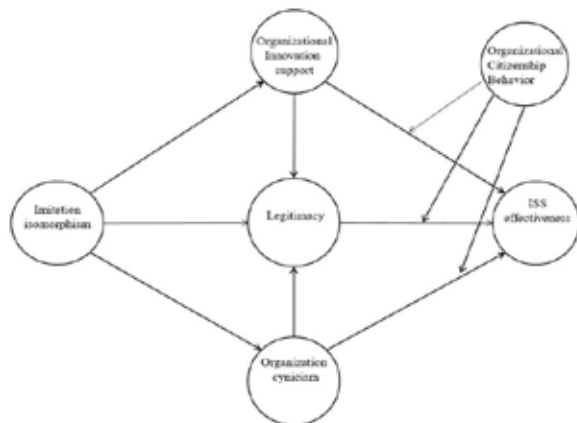


Figure 1. Research Model

Analysis

For the test of the reliability and validity of the variables, structural equation modeling (SEM) is used. The software SPSS v.18.0 and smart PLS 2.0 are used for the data analysis

Discussion and conclusion

This study provides several theoretical contributions to the extant literature. First, it deals with an under-researched topic and organizational factors of the national government, including organizational supports and cynicism, as well as the moderating effects of individual resistance in the course of IS innovation. Given this attention, IS is becoming a significant issue and the concerns are growing (Boss et al., 2009). Further, IS innovation for the central government, in the framework of institution theory, can add to IS and e-government research, from a technical perspective.

Mimetic isomorphism works as external pressures on organizations, to imitate the exemplary cases and best practices of IS, which may create the internal agreement of promoting IS innovation, and reduce organizational cynicism toward it. However, the results of this study revealed that mimetic isomorphism did not influence organizational cynicism, while organizational cynicism negatively affected the legitimacy of IS innovations. Additionally, here, organizational cynicism towards IS innovation focused on members' perceptions of the lack of top management's commitments and communications about IS innovations. Moreover, mimetic isomorphism, without top management's role-modeled behavior and communications between members and top management, cannot apply its advantage in reducing cynicism. Therefore, this study highlights the importance of the interrelational effects of external drivers and organizational factors.

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Analysis of the Use of Online Reputation by 4- and 5-star Hotels in Andalusia (Spain)

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Abstract

In the context of the current tourism market, in which eWOM can be a determining factor in selecting a hotel, publicity related to a hotel's online reputation posted on its official website can be an extremely useful way to use the web as a sales platform.

This work analyses online reputation management on the websites of 4- and 5-star hotels in Andalusia (Spain), as well as the variables that could influence online reputation publicity and the origin of the classification obtained via client opinion.

The results show that 57% of hotels opt to publicize their online reputation on their own official websites, and 58% publicize the favourable results obtained from sources outside the establishment; both behaviours relate to factors such as belonging to a hotel chain, the modality and size of hotel.

Keywords

eWOM, customer reviews management, official hotel websites, online tourism reviews, hotel online reputation.

Introduction

The growth of internet use has changed the planning procedure for tourism consumption, being used not only as a way of getting to know the features of the accommodation, but also to gather information regarding the opinions of the users of the potential destinations [1-3]. According to the last TripAdvisor barometer [4], of the 36,444 travellers polled across 33 countries, 73% used online sources to decide on their destination and 86% to decide on their accommodation. Considering, in addition, that lots of consumers depend on other's reviews to deduce the quality of goods and services [5], online reviews or electronic word of mouth (eWOM) has an especially important influence in the tourism industry and the accommodation sector, whose intangible products are difficult to value prior to their consumption [6].

On the internet several formats exist that allow the users to express their opinions and to publish information related to the hotel establishments: (a) the official web

pages of the hotels; (b) web pages for the reservation of accommodation (for example booking.com, holidaycheck.com, hoteles.com, etc.); (c) hotel comparison websites (such as tripadvisor.com, trivago.com, zoover.com, etc.); (d) websites which provide advice related to accommodation, (e) the social network pages of the hotel establishments (such as Facebook, Weibo, etc.).

The credibility and bias of said opinions depends on where they have been taken from, since their veracity is not checked for all the formats (it is not always compulsory to have stayed in a hotel to voice an opinion, for example, or negative comments are deleted from the webpages).

With regards to the investigation, the studies have been focused on analysing the role of online opinions in the decision making process for accommodation and an estimate of the market shares [7-10], the factors that make these opinions useful [11-12] or the effects of different rating systems [13-15].

Regarding the use of the hotels' websites as a space to express the opinions of the clients or the online

reputation ratios, there are papers that indicate that hotel establishments have not been adequately using their webpage as a tool for the management of opinion and reputation, focusing their efforts on providing information regarding the features of the hotel [16-17]. However, there are no studies that show how hotel establishments are reflecting the opinions of their clients on their official websites and the possible outsourcing of the online reputation ratios, as well as the variables that may have an influence on the management of the opinions.

As such, we have focused our study in Andalusia (Spain), since it is essential for the hotel sector of this region, to adapt to the changes regarding planning procedure and selection of tourist destinations. Especially since the 1,699 Andalusian hotels accommodated 18.3 million tourists in 2017, of which 8.9 million were foreigners, ranking Andalusia in second place out of all regions in Spain and contributing to placing Spain as the second most visited country in the world by tourists.

Of all the hotels, we have focused this paper on the 4 and 5 star hotels in Andalusia, which make up more than 30% of the Andalusian hotel establishments and offer almost 70% of the total hotel capacity (Figure 1).

In order to gain further knowledge of the impact of online reputation in Andalusia, our objective was to analyse how it was being managed on the websites of 4 and 5 star Andalusian hotels, as well as possible variables that may influence the publicity, the accessibility, the type and the external management of the rating obtained through the opinions of clients.

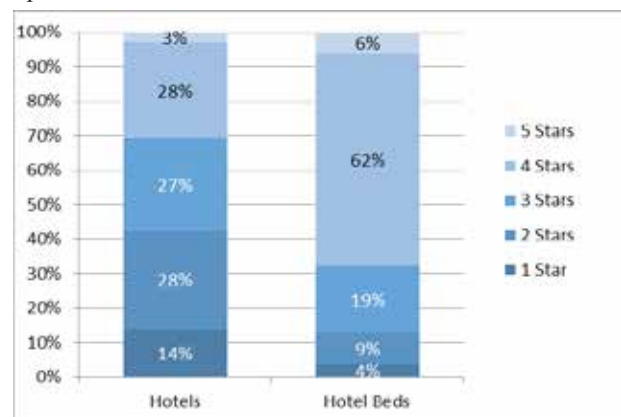


Figure 1 – Establishments and capacity by category in Andalusia.
Source: INE, 2018 [18].

Methods

Study design

To achieve the objectives of our study, 522 active 4 and 5 star hotels were studied in 2017 [19]. Of these hotels, after

checking in January 2018 if they had an official website, only 503 provided analysable data.

For each of these hotels we proceeded to analyse two different variables: (1) those that define the general profile of the establishment (number of the stars, type of hotel, age, size and belonging to a hotel chain); (2) those that refer to online reputation (publicity, accessibility, type and management of the online reputation rating). In total, 10 categorised variables were analysed as indicated in Table 1.

Regarding the type of hotel, based on the categories formed by the hotels in the Tourism Register of Andalusia [19], three categories were distinguished: motorway hotels or rural hotels, urban hotels and beach hotels.

To define the age of the establishments we established as criteria that the hotel had to have started its activity either prior or subsequent to 2010, the year in which the hotel sector enhanced its use of online reputation as a source of strategic information. Indeed, 2008 and 2009 were the years in which Customer Alliance, ReviewPro and TrustYou began their activities, companies dedicated to the management of online reputation.

Table 1 – Analysed variables

Variable	Category
1. Number of stars	· 4 stars · 5 stars
2. Type	· Motorway or rural · Urban · Beach
3. Age	· Established prior to 2010 · Established subsequent to 2010
4. Size	· Small · Medium · Large
5. Belonging to a hotel chain	· Independent · Associated
6. Publicity of online reputation	· Yes · No
7. Accessibility of online reputation	· High · Low
8. Type of online reputation rating	· Numeric · Non-numeric
9. External management of the online rating	· Yes · No
10. Type of external management of the online rating	· Review aggregator · Single external source · Several external sources · Review aggregator plus another external source

The variable related to the size of the hotel was divided, according to the number of rooms, into three categories (small, medium and large). In this respect we considered a hotel to be small if it had less than 50 units of accommodation available, medium if it had between 50 and 300 and large if it had more than 300 available rooms.

The accessibility of online reputation referred to the ease of finding information related to the online rating, distinguishing itself if this information was displayed on the home page of the website (high accessibility) or if it was only accessible via a link (low accessibility).

Furthermore, with regards to the type of online reputation rating, we differentiated the hotels which displayed a numeric rating from those that didn't, showing only a non-numeric indicator of its reputation, whether this was a symbol (stars, circles, etc.) or opinions of clients without an exact rating.

Finally, it was considered that establishments tended to opt for external management of online qualification when offered an online reputation ratio either from a review aggregator (Customer Alliance, ReviewPro or TrustYou) or another similar source (an accommodation finder, a booking site or a social network). Specifically, four categories were defined for the type of external management of online reputation: (a) a review aggregator; (b) a single external source that is not a review aggregator; (c) several external sources, without including review aggregators; (d) a review aggregator plus another external source.

After a descriptive analysis based on the frequencies of the variables, possible dependent relationships between them, were studied, according to the hypothesis test with the chi-square statistic, through the SPSS software version 20 (IBM Corp., Armonk, N.Y., USA). Specifically, five multiple hypotheses were initially posed, that attempted to analyse whether the variables' number of stars, type of hotel, age, size and belonging to a hotel chain may influence the publicity of online reputation on the hotel's official website, its accessibility, the type of rating provided and the external management of online reputation shown on the hotel website.

Study Hypothesis

The posed hypotheses were as follows:

H1: The number of stars a hotel has determines the publicity and the accessibility of the online reputation.

However, it is not relevant to the type of rating or the external management of online reputation.

5 star hotels, which specialise in luxury and exclusivity, may be less prone to display an online rating on their official website and, in the case of a rating being displayed, they would not choose to display it on the home page as this could be considered as inappropriate for this type of establishment.

H2: The type of hotel is independent of the publicity, accessibility, type of rating and external management of online reputation.

The type of hotel (motorway or rural, urban and beach) unlike other features of the establishment, doesn't, initially, appear to be a deciding factor with regards to the policies for online reputation management on the official websites of the hotels.

H3: The age of the hotel influences the publicity and the external management of online reputation but is independent of the accessibility and the type of rating provided.

With this hypothesis we posed that the establishments created subsequent to the creation of online reputation, since they began their activity within this environment, would have incorporated, from the beginning, in a more natural way, the management of online ratings. Besides that, the older hotels would prefer, in their case, to outsource the rating management.

H4: The size of the hotel affects their publicity and the external management of online reputation but is independent of the accessibility and the type of rating displayed.

Assuming that more economic resources would allow for better online reputation management, we posed that smaller hotels, normally family owned hotels or hotels with fewer resources, may have more difficulty to keep their website updated with the comments and evaluations of clients. Furthermore, it may be more difficult for them to manage the opinions internally, preferring, in their case, to outsource this management or to publish the ratings they have obtained with hotel finders or on world renowned booking websites (TripAdvisor or Booking, for example).

H5: The belonging to a hotel chain is a determining factor with regards to the publicity, accessibility, type of rating and the management of the online rating.

With this hypothesis we raised the question that the management of online reputation would fall within the corporate policies, consequently the hotels that form part of a hotel chain would have more support to display their online reputation rating on their official websites. Moreover, these establishments usually use a website template unified by their hotel chain, on this basis it is predetermined whether to reserve a space to place a reputation indicator, and this would be a determining factor in the accessibility and type of rating shown.

Results

Descriptive analysis

The results obtained after analysing the variables are reflected in Table 2. The 4 star hotels were the majority (90.26%) and were located in the city (48.11%) or at the beach (40.95%). Only 12.92% began their activity after 2010. Regarding the size, 62% were considered to be medium sized, 25% large and almost 13% small, the majority of them belonging to a hotel chain (69%).

Interestingly, 34 of the 267 hotels that showed some form of online reputation indicator on their website didn't simply display a single figure, complementing their numeric ratings with symbols and providing several sources, both internal and external, thereby adding more information to their website (Figure 2).

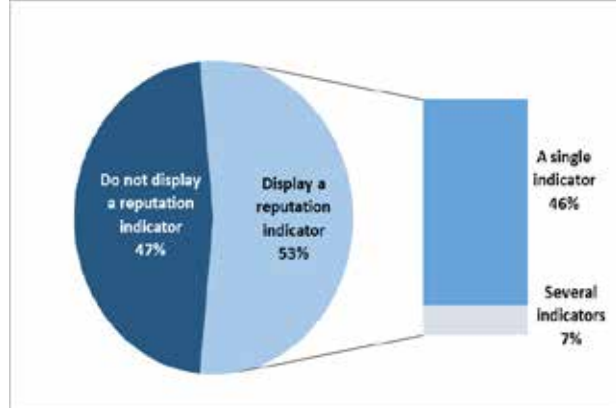


Figure 2- Percentages of the analysed hotels that display an indicator of online reputation on their official website.

It should also be highlighted that 32.6% of the establishments that displayed online reputation evaluations on their website displayed their achieved rating from TripAdvisor, whether this was exclusively or in addition to other reputation evaluations, this has become a point of reference between analysed hotels.

Table 2 – Results of the descriptive analysis

Variable	Category	No	%
1. Number of stars	4 stars	454	90,26%
	5 stars	49	9,74%
2. Type	Motorway or rural	55	10,93%
	Urban	242	48,11%
	Beach	206	40,95%
3. Age	Established prior to 2010	438	87,08%
	Established subsequent to 2010	65	12,92%
4. Size	Small	129	25,65%
	Medium	312	62,03%
	Large	62	12,33%
5. Belonging to a hotel chain	Independent	156	31,01%
	Associated	347	68,99%
6. Publicity of online reputation	Yes	267	53,08%
	No	236	46,92%
7. Accessibility of online reputation	High	232	86,89%
	Small	35	13,11%
8. Type of online reputation rating	Numeric	204	76,40%
	Non-numeric	63	23,60%
9. External management of the online rating	Yes	143	53,56%
	No	124	46,44%
10. Type of external management of the online rating	Review aggregator	36	25,17%
	Single external source	77	53,85%
	Several external sources	12	8,39%
	Review aggregator plus another external source	18	12,59%

Hypothesis testing

The stated hypotheses were tested by means of the chi-square statistic, obtaining the results shown in Tables 3, 4, and 5. As is apparent, some hypotheses could not be tested due to the fact that they did not meet the necessary requirements to apply the chi-square statistic, given that some estimates had an expected frequency of less than 5.

H1: The number of stars a hotel has determines the publicity and the accessibility of the online reputation. However, it is not relevant to the type of rating or the external management of online reputation.

In accordance with the results of the hypothesis test (Table 3), the hotel category did not affect publicity, the type of rating displayed or the decision to externally manage the online reputation ratings. With regards to accessibility, it was not possible to test whether or not this is influenced by the establishment's number of stars, due to it not meeting the necessary requirements to apply this hypothesis test.

Table 3 – Results of testing H1 and H2 using the chi-square statistic ($p < 0.05$)

Hypothesis Variable	H1. Category		H2. Type	
	χ^2	p	χ^2	p
Publicity	1.46	0.227	12.914	0.002
Accessibility	x	x	x	x
Type of rating	0.899	0.343	x	x
External management	0.009	0.923	12.242	0.002

H2: The type of hotel is independent of the publicity, accessibility, type of rating and external management of online reputation.

According to the chi-square statistic (Table 3), a significant relationship existed between the type of hotel and the publicity of online reputation ($\chi^2 = 12.914$, $p = 0.002$, $p < 0.05$) as well as the use of external management to display a rating related to their reputation on the website ($\chi^2 = 12.242$, $p = 0.002$, $p < 0.05$). Accordingly, the urban hotels were the most inclined to display their online reputation on their websites (60% of the establishments in this category). On the other hand, the beach hotels tended, to a larger extent, to opt for publishing an external rating of their online reputation (67% of the establishments of this kind that offered their online reputation). However, it was not possible to establish if there was a relation between the type of hotel and the reputation accessibility

or the kind of rating shown on the official website of the establishment.

H3: The age of the hotel influences the publicity and the external management of online reputation but is independent of the accessibility and the type of rating provided.

The fact that the hotel had started its activity after 2010 was, according to the hypothesis test, independent of the decision to indicate the online reputation on the establishment's official website, the kind of rating or the external management of the obtained evaluations (Table 4).

Table 4 - The results of testing H3 and H4 using the chi-square statistic ($p < 0.05$)

Hypothesis Variable	H3. Age		H4. Size	
	χ^2	p	χ^2	p
Publicity	1.438	0.23	25.14	0.000
Accessibility	x	x	x	x
Type of rating	0.769	0.381	5.131	0.077
External management	0.001	0.979	11.88	0.003

On the other hand, no information was available which confirmed the independence of the accessibility of the information related to their online reputation from the age of the hotel, since it did not meet the requirements of the hypothesis test.

H4: The size of the hotel affects their publicity and the external management of online reputation but is independent of the accessibility and the type of rating displayed.

The results of the hypothesis test (Table 4) showed a statistically significant result relating the size of the hotels to the publicity of online reputation ($\chi^2 = 25.14$, $p = 0.000$, $p < 0.05$) and with the decision to show their obtained reputation ratings through external management of the opinions ($\chi^2 = 11.88$, $p = 0.003$, $p < 0.05$). In this regard, on the websites of the smaller hotels it was more difficult to find the online reputation (34% compared with 50% achieved by the larger hotels) and, in their case, didn't usually opt for the external management of the ratings (only 36% of the small hotels that displayed an indicator of their online reputation did so using an external rating). Besides this, there was no significant association between the size of the establishment and the type of rating offered. With regards to the accessibility, it

was not possible to identify whether it was independent of the size of the establishment, since the criteria for the hypothesis test were not met.

H5: The belonging to a hotel chain is a determining factor with regards to the publicity, accessibility, type of rating and the management of the online rating.

According to the results of the testing of the posed hypotheses (Table 5), the belonging of the establishment to a hotel chain was only a factor in their decision to display their online reputation rating on the official website ($\chi^2 = 65.487$, $p = 0.000$, $p < 0.05$). 65% of the hotels associated with a hotel chain displayed their online reputation on the website compared with 26% of the independent hotels. Aside from this, there was no statistically significant link between the belonging to a hotel chain and the accessibility of the displayed information regarding the online reputation, the type of rating or the decision to externally manage the ratings.

Table 5 - The results of testing H5 using the chi-square statistic ($p < 0.05$)

Hypothesis Variable	H5. Belonging to a hotel chain	
	χ^2	p
Publicity	65.487	0.000
Accessibility	1.962	0.161
Type of rating	2.069	0.150
External management	2.313	0.128

Conclusions

There is an ever increasing number of tourists who consult the internet for planning and searching for information, the online reputation of the possible destination being one of the decision making criterion. Considering, in addition, the development and the extension of the use of Online Travel Agencies as a reservation procedure for accommodation, it is essential for the hotels to have an adequate website in order to be able to compete through the option to make direct reservations. Regarding this, the use of the hotels' official websites as a marketing strategy has been studied in some countries, analysing what information they showed, concluding that there weren't using them effectively [16-17]. Although they analysed whether or not the websites showed clients opinions or links to review pages like TripAdvisor [17], they didn't elaborate on the accessibility of this information, the

online reputation indicators or the kind of rating shown, as well as the possible variables that may have an influence in all of this.

The results of our study demonstrate two important aspects. First of all, that Andalusian 4 and 5 star hotels are adapting to the new competitive environment of online sales, in which the opinions of previous clients may be a determining factor in the selection of the hotel establishment. This can be seen from 53.08% of the hotels that displayed information related to their online reputation on their websites. In this regard this figure equalled the one indicated in the study which was centred in Belgium, in 2016, based on a sample of 3 and 4 star hotels [17].

Secondly, with regards to the accessibility and the rating management of this reputation, the establishments that were analysed tended, by majority, to display a numeric evaluation on the home page of the website and, in 53% of all cases, an external evaluation source, mainly with the result displayed by a review aggregator or the rating obtained by the hotel on TripAdvisor.

The profile of a hotel that displayed an online reputation indicator on its website was an urban hotel, of medium or large size and that belonged to a chain hotel.

In reference to the posed hypotheses, it became evident that there was a relation between the publicity of online reputation and the type of hotel, the size and the belonging to a hotel chain. Also it was demonstrated that statistically there was a significant link between the type and size of a hotel and the decision to display a rating calculated by an external source. In this respect we observed the acceptance, from 32.6% of the hotels, of the TripAdvisor brand as the main point of reference for the selection procedure of tourist destinations, which coincide with the results obtained in Belgium [17]. This external management system for ratings has resulted to be especially interesting for those hotels which do not have the economic resources to manage online opinions internally or to allow for the recruitment of a review aggregator. While until just a few years ago TripAdvisor acted solely as a comparison site for the hotel industry, where one could consult the opinions of fellow travellers, since 2016 it offers the possibility to make reservations via their website, turning it into a competitor of the hotel when it comes to making direct reservations. Bearing in mind that currently hotel establishments are seeking to promote direct sales as a growth strategy via a reduction

in commission for online travel agencies, the conversion of TripAdvisor to an e-commerce agent could change the attitude of hotels with regards to the use of their brand for online reputation.

The possibility to learn about the online reputation of a hotel from its official website may favour this sales channel in that it provides the potential client with more information on the same page.

We are conscious of the fact that the conclusions of this study cannot be generalised, due to the investigation being focused on 4 and 5 star hotels in Andalusia, characterised by a high rate of association with hotel chains, which may have an effect on the management of online reputation, as it is incorporated, in many cases, into the corporate policies. It would, therefore, be interesting to widen the field of the study to the rest of the hotel categories, in order to analyse whether they behave similarly to the hotels of a superior category. For this reason, we will dedicate future investigations to analysing its presence in said establishments, as well as widening the geographical field in order to analyse any possible parallels and to obtain more general conclusions.

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An Institutional Approach to Comprehensive Factors Leading to Global Entrepreneurial Activity

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Abstract

The author has put forth a Comprehensive Model of Global Entrepreneurship and described the factors that comprise this model. These factors include access to capital, governmental support systems, political and economic systems, private sector support systems, entrepreneurial education, trade associations, internal and external environment; infrastructure, and socio-cultural environment. Most attention is given to access to capital due to the importance of financial needs in relation to start-ups and growing entrepreneurial ventures. The level of these influential factors vary across nations. The author concludes a macro approach in a complex global economy is the best way to understand global entrepreneurship.

Keywords

Global entrepreneurship, comprehensive model of global entrepreneurship, institutional approach, entrepreneurship

Introduction

Entrepreneurship and small business fuel economic growth. Timmons and Spinelli discuss job creation and quote the research of David L Birch. Birch discovered that 81.5 percent of the net new jobs formed from 1961 to 1976 were the result of new entrepreneurial and growing small firm efforts. Entrepreneurship has also dramatically impacted employment patterns. For example, in 1960, 25 percent of the workforce worked for a Fortune 500 company. In 1980 that number dropped to approximately 20 percent of workers, and by 2006, the percentage had dropped to less than 9 percent (Timmons & Spinelli, 2009).

Trends such as this are important because they demonstrate that growing entrepreneurial companies are adding jobs while well-established Fortune 500 companies are reducing them. This supports the claim that entrepreneurs and small businesses are having an increasing impact on economic growth.

Research on entrepreneurship has increased dramatically in recent years. Most of this research has focused on two areas; the individual attributes of the entrepreneur and technical breakthroughs. These have long been considered the primary stimuli to successful entrepreneurial ventures. Some personal entrepreneurial attributes that have been

supported by research are: propensity toward moderate risk, tolerance for ambiguity, and need for achievement; these attributes are considered to be that which drives entrepreneurship.

To illustrate this point, many successful entrepreneurial companies did not exist 20 years ago. These companies were led by individuals who had “the right stuff” and were able to use their personal attributes to pioneer new technologies and innovations such as personal computers and internet selling. Combining the entrepreneurial spirit and technology, entrepreneurs like Bill Gates, Jeff Bezos, and Stephen Jobs were able to grow companies, add jobs, and create wealth. The question remains, are these factors sufficient to create successful ventures? Are there other variables that determine success?

Entrepreneurship research has largely ignored macro-level variables that may influence entrepreneurial activity. An example of this has been cited by Hernando De Soto, who asserts that entrepreneurial growth in America is directly related to the American legal system. He believes that the legal system allows Americans to leverage their assets and thus have access to a primary source of capital for their entrepreneurial ventures (De Soto, 2000). For example, real estate property in the United States has value because it has a deed that offers proof of ownership. This deed is recorded in a way which gives the owner legal title to the

property. The equity in this property is often used to raise the capital needed to support an entrepreneurial venture, either through a mortgage or a securitized loan. Without a legal title, this capital cannot be accessed.

The author argues that more attention should be given to research that focuses on macro-level factors. This helps to gain a better understanding of the entrepreneurial process. In support of this argument, there has been both commentary and research conducted. It should not be assumed that research findings in one country directly translates to another country. In this paper, the author focuses on the factors that affect entrepreneurial activity using a cross cultural and macro level approach.

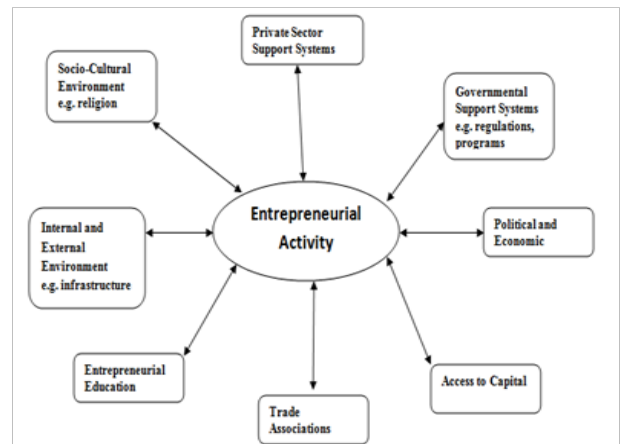
The Global Entrepreneurship Monitor (GEM) research was designed to conduct an annual assessment of the national level of entrepreneurial activity (2008). While this research is useful, the GEM research only covers a small segment of entrepreneurs' current role in the increasingly the global economy. The GEM project documents and compares entrepreneurial activities across countries. This is important research, but it does not explain why one country flourishes and another remains stagnant. The research does not explain why one country struggles to grow companies beyond a few employees while another continues to grow its entrepreneurial companies to employ many. Current research, including GEM, is not able to answer these questions.

Author is proposing that while national and individual entrepreneurship characteristics are important, a global study of entrepreneurship activity should begin at the macro level. In addition to these factors, current research, such as the GEM global reports, focuses on a quantitative analysis of entrepreneurial activities around the world. This has resulted in less attention being given to qualitative data and analysis. Taking qualitative data and analyzing it further is essential to discovering the underlying explanations that contribute to the variations in entrepreneurial activity across countries. Thus, we have focused our research on macro variables which will help to clarify the importance of various qualitative entrepreneurial factors.

Based on my review of entrepreneurial research, I have created a model which we believe explains global entrepreneurial activity. This model describes variables that can be applied to entrepreneurship both across and within nations. The author believes that this approach may explain much of the GEM data and answer questions

of why some countries are entrepreneurially rich while others are weak. A multi-variable approach has been applied to fully examine factors that affect all nations.

Figure1: Comprehensive model of factors leading to entrepreneurial activity



Explanatory factors

We will now briefly describe each characteristic in our model, the sub-factors that lie within it, and the effect that it has on entrepreneurial success. Most of our attention will be devoted to access to capital. The author believes this one factor is responsible for much of the variance between national entrepreneurial activity levels. Other variables will be described in less detail. There are numerous sub-factors that lie within each of our variables. Examples will be offered to illustrate these factors

Access to capital

Personal funds, family, and friends:

An entrepreneur's personal funds serve as the primary source of financing start-ups throughout the world. A study conducted with nations participating in the GEM project found that 62 percent of the entrepreneurial start-up funds were provided through self-funding (GEM, 2006). This is especially true for women entrepreneurs; a 2015 GME United States Report found that women reported self-funding 61% of their total business capital, whereas men reported 50% self-funding (GEM, 2015). Research on start-ups in China found the greatest source of capital coming from personal savings, family and close friends. Chinese entrepreneurs seldom rely on bank loans for their start-up capital (Hussain, Millman, & Matlay, 2006).

Microfinance and microcredit:

Microfinance and Microcredit have recently become a major source of funding for entrepreneurs across the globe.

Microfinance is typically small scale loans (usually less than €25,000) to entrepreneurs for start-ups and growth (Irwin, 2006). Often, though not always, it is provided by not-for-profit loan funds that have raised capital from charitable and public sources. It is noteworthy that the Nobel Peace Prize in 2006 was awarded to Dr. Muhammad Yunus for his work in providing micro loans to hundreds of small businesses. An impressive example of the success that microfinance can have on entrepreneurship was highlighted in a GEM study (GEM, 2007). In this study, an entrepreneur, Oscar Javier Rivera Jimenez, hoped to start a business by delivering parts in the Chimalhuacan district, one of the poorer slums outside of Mexico City. Oscar was able to expand from a single man delivering parts on his bike, to a well-stocked warehouse with nine employees, because of a micro finance loan he received from Compartamos, Latin America's biggest provider of microfinance. The presence of organizations such as Compartamos can greatly increase an entrepreneur's ability to grow a business.

Grants:

Grants are another potential form of capital for an entrepreneur. Grants are usually in the form of funding awards given to a company or an educational institution to support promising business or technological opportunities. In the United States the Small Business Association offers grants under its Small Business Innovation Research (SBIR) for companies developing new technologies with high potential for commercial success. These types of grants can be a major source of finance for entrepreneurs.

Angel Investors grants:

Angels are typically high net worth individuals who invest in new and early stage businesses. Angels invest in companies that cannot attract mainstream venture capital" (Irwin, 2006). In 2007, research conducted at the University of New Hampshire found that 258,200 angels pumped 26 billion dollars into 57,120 companies in the United States (Wehrum, 2009). This is one of the largest sources of start-up capital for US entrepreneurs.

Asset finance:

Asset financing allows an entrepreneur to borrow from a financial institution based on some percentage of assets owned by the company. These assets are typically inventory and receivables, although real estate and other assets may be used. The asset serves as the security required to obtain borrowed funds. Due to the increased risk that SMEs present, financial institutions are more

likely to base loans to SMEs on collateral (OECD, 1997). Asset financing benefits the entrepreneur by providing working capital which allows the company to operate while it awaits payment for its products and services. This is helpful for entrepreneurs who have recognizable assets; however, according to De Soto a great deal of the developing world's capital is considered "dead" (De Soto, 2000). In his book, *The Mystery of Capital*, De Soto asserts that "capital, like energy, is also a dormant value. Bringing it to life requires us to go beyond looking at our assets as they are, to actively thinking about them as they could be" (De Soto, 2000, p.45). Therefore, countries that fail to recognize millions of dollars in assets, take away the potential to raise important capital. As an example, one of the richest sources of working capital comes from real estate. In many countries, real estate is not valued as an asset, and therefore, not available as security for borrowing funds. This once again emphasizes the importance of the institution of private property in accessing capital. Additionally, this can hinder SMEs that lack access to sufficient collateral, leading to credit rationing and higher interest rates (OECD, 1997).

Seed funds:

Seed funds provide support to help launch businesses in their early development. These are risky investments because they are made early in the life of a business when it is most at risk. Seed financing is particularly important in high tech ventures which take several years to realize marketable products. Most entrepreneurial ventures are not candidates for seed capital. Yet for some companies, seed funds are an important source of financing. A study reported by the Norwegian Institute for Urban and Regional Research found that only 17 percent of entrepreneurial financing was in the form of seed funds (Langeland, 2007). Outside of the United States and Canada, where seed money is comparatively easy to access, much of the money invested in start-ups is given in the later stages of a business (OECD, 1997).

Venture capital:

Venture capital funds are available for only a small percentage of start-up and high growth companies. Fewer than 1 in 10,000 start-ups attract venture capital. A GEM research study found informal investors contribute 3.5% into the GDP of GEM nations while venture capital contributes only .1% (Minniti, Bygrave, Autio, 2006). A later GEM study found that 71 percent of the amount of venture capital in the G7 nations was invested in United

States companies (Bosma & Harding, 2007). SMEs in developing countries find it difficult to obtain venture capital funds compared to industrialized countries. A study by Hussain (2006) concluded that China's lack of venture backed SMEs put the country at a disadvantage when compared to economically developed countries like the UK. To remain competitive in international markets, developing countries could greatly benefit from venture capital.

Re-invested capital:

Internal funds can provide a major source of finance for entrepreneurs. Re-invested capital originates from the firm's profits that are then re-invested within the business. Studies have found that the percentage of an entrepreneur's reinvestment in their businesses is higher in the early stages of their business growth with the average rate of reinvestment decreasing once the business and profits become more consistent and stable (Brown, Earle, & Lup, 2005).

Guaranteed loan programs:

Loan-guarantees are established by governmental agencies to help entrepreneurs qualify for loans from financial institutions. When entrepreneurs have a reasonable chance to succeed, but lack the adequate collateral to convince a lender to loan them money, government loan guarantee programs can help. For example, in the United Kingdom, from April 2004 to March 2005, the Small Firms Loan Guarantee Scheme guaranteed 7,130 loans with a cumulative value of GBP 481 million (Irwin, 2006).

IPOs:

Most companies never go public. However, for those that have created value, an Initial Public Offering of its stock is an important source of financing for future growth. This adds a great deal of liquidity to the financial structure of the business, allowing entrepreneurs to raise capital by selling equity rather than using debt. It also allows entrepreneurs a chance to take some of their investment out of the company. IPOs are rare. In the United States in 2005, 45 venture backed companies raised \$3.4 billion with IPOs. In comparison, approximately 3 million new companies raised \$100 billion in other investments, and the founding entrepreneurs themselves contributed another \$200 billion (Bosma & Harding, 2007).

Credit cards:

Many early stage entrepreneurs raise financing through the use of credit cards when they fail to qualify for traditional

loans. This type of credit is generally not secured, which is why it is often attractive to entrepreneurs. Credit card debt is risky and often carries high interest rates. The rates charged on credit cards can add a financial burden to the company when repaying the debt

Governmental support systems

The governmental support systems have a major impact on entrepreneurial activity. Irwin (2006) concluded that government policies are crucial in creating an environment that enables entrepreneurial business to flourish. He also makes a case that it is essential for governments to do everything possible to improve the environment for business; not just in terms of simpler and more transparent regulation, but including tax policies, labor laws, understandable and fair property rights, and the ability to enforce contracts. These governmental roles can have a dramatic effect on entrepreneurial activity. Depending on the governmental support systems in place, a potential entrepreneur may be more or less likely to start a business in the market.

Entry regulation:

The entry regulations that various governments have established vary in severity. For example, in order for an entrepreneur in Mozambique to meet government requirements for starting a business, he must complete 19 procedures taking at least 149 business days and pay US\$256 in fees. In contrast, an entrepreneur in Canada wishing to start a business could complete the required process of 2 procedures in 2 days while paying US\$280 in fees (Djankov, La Porta, De Selanes, & Shleifer, 2002). Even if the entrepreneurial spirit is present in the population, barriers to entry may inhibit business start-ups.

Regulatory environment and policies:

Regulatory policies also have a considerable impact on the level of entrepreneurial activity. For example, in the United States small businesses are often burdened by regulatory factors such as the EPA, OSHA and EEO. The costs of regulations put an asymmetrically disproportionate burden on SME's due to that the average cost of regulation per employee is higher for an SME than a for large firm (OECD, 1997). The necessity to learn and implement programs that deal with regulation can be difficult and costly; a factor which in turn could decrease a country's level of entrepreneurial activity. Therefore regulations redirect funds away from re-investment and time away from productive management.

Taxes:

Taxes, specifically the various business taxes, can be a complicated governmental burden for entrepreneurs. These complications create difficulties in understanding taxes. This in turn creates expenses to cope with tax laws. Many entrepreneurs hire tax specialists to deal with the myriad of tax codes. For example, taxes vary in the US depending upon the legal form of the business. They also vary depending upon the type of expenses that the company incurs. Furthermore, taxes can vary depending upon the physical location of the company. Governmental tax policies can also cut directly into an entrepreneur's profitability. For example, taxes such inheritance or death taxes, can severely impact the capitalization of a company (Kreft, 2003). Specifically, these taxes directly reduce the ability for entrepreneurs to pass on their entrepreneurial gains to fund future generations of entrepreneurs.

Tariffs:

The establishment of tariffs is another governmental factor that can impact entrepreneurial activity. From a domestic standpoint, entrepreneurs would support the establishment of tariffs against foreign products because it would protect their domestic market. However, domestic tariffs for entrepreneurs can cause problems if the entrepreneur needs to import supplies from another country. If the government has strict tariffs in place, an entrepreneur may have no choice but to get their supplies domestically and face an increase in costs. In addition to these factors, if entrepreneurs hope to expand their business abroad, they may be at a disadvantage because of foreign tariff policies. Their products would be more expensive when competing globally, thus decreasing their ability to expand.

Government support programs:

In addition to regulatory and legal inputs, governments also play a crucial role in developing programs to help increase the level of entrepreneurial activity. These programs range in both size and mission. For example, the United States has established the Small Business Administration (SBA), a relatively large program to help SMEs, while Canada created the Youth Entrepreneurs Association to aid their younger entrepreneurs. An article in the Journal of Business Venturing found that, the IFF (Innovation Investment Funds, Australia) program has facilitated investments in start-up, early stage, and high-tech firms (Cummings, 2007). The presence of these forms of governmental support can greatly increase entrepreneurial activity.

Multiple studies have confirmed the positive impact that such government programs can have on entrepreneurship and SMEs. One study conducted in Australia demonstrated the positive correlation of utilization of government support services and advisory agencies by SMEs and subsequent SME success and survival (Valencia, V. S., 2016). A second study focused on Small Business Development Centers (SBDCs) also demonstrated this positive relationship, and confirmed that SMEs who received SBDC assistance greatly increased their chances of surviving for at least four years longer than those businesses which did not seek such help (Chrisman, J. J., & McMullan, W. E., 2004). Unfortunately, this success can be hindered by the lack of trust that many businesses often hold for government support and assistance. This is found to be the case most prominently in nations where government corruption and corruption of government officials is common practice (Na Sakolnakorn, 2010). It is also found to be the case in countries where government processes are incredibly, and often needlessly, complex (Sriram & Mersha, 2010). Such success can also be obstructed from misunderstanding or lack of information on the part of the SME, concerning such government support systems. It has been shown that in many places, government agency support and assistance is often negatively perceived by entrepreneurs and SMEs. These perceptions and whether or not an SME would actively seek government support were most commonly founded by three factors; whether or not the business is aware that such government programs exist and a general lack of knowledge on what such program can do to help the company; when SMEs are aware of such programs, they often do not believe that they will provide any actual assistance or the right type of assistance; when SMEs are aware of such programs, they are hesitant to use them because seeking such assistance may cause others to believe that the SME is incompetent or failing (Audet, Berger-Douce, & St-Jean, 2007). In order for government programs and policies to have a truly positive impact on entrepreneurs, this barrier consisting of lack-of-awareness and lack-of-trust must first be overcome.

International trade agreements:

International trade agreements can influence the competitiveness of entrepreneurs. In an increasingly global economy, international economic institutions, such as the World Bank and the World Trade Organization, are strengthening their influence on entrepreneurship and

entrepreneurial opportunities. This is usually achieved through international trade agreements and liberalizing trade and investment policies across countries. The money and level of influence these organizations have can directly impact national or regional entrepreneurship.

Political and economic system

Political and economic systems are an integral part of business. The political system and specific economic situation can vary dramatically from one nation to another. Even though these systems can have numerous differences depending on the country in which the entrepreneur is located, there are some general factors that affect entrepreneurial activity. For example, an entrepreneur starting a business in a democratic system as opposed to a communist system can face dramatically different challenges. For years China's communist political background had a direct impact on the business and entrepreneurial environment. The communist system was committed to opposition and suppression of capitalism, private property. This form of political suppression can diminish an entrepreneur's ability to enter the marketplace.

Politics and political parties have a great influence on entrepreneurial trends and resources in a nation. In some developing countries, it is almost impossible to start and grow a business without having decent political power, which is usually obtained by standing under the umbrella of a strong political party. As with government corruption, an entrepreneur's need to establish political support before becoming competitive in the nation can be a major detriment to entrepreneurial activity.

Political stability of a state also plays a role in the start-up and success rates of entrepreneurship. Political risk, generally defined, is the impact that politics has on the market. Consequently, political stability – the unit of measure used to quantify a state's political risk – is associated with lower risk and lower costs, as well as, increased levels of trust, predictability, and accountability in the government. An unstable political state is more commonly found to contribute to increased risk and costs, in addition to government unpredictability in action and legislation. Research undertaken into this topic has found that political stability – and thus lower risk and higher predictability – is positively in relation to entrepreneurial start-up and success rates, confirming that a politically stable environment greatly contributes to the promotion and growth of the entrepreneurial sector (Dutta, Sobel,

& Roy, 2013). Additionally, investors are more willing to fund ventures that are in a politically stable state due to the increased security of return on investment. Further research conducted using both American and Turkish students confirm such conclusions and demonstrate the positive correlation between political stability and entrepreneurial intentions (Ozaralli & Rivenburgh, 2016).

Entrepreneurs can also have an impact on politics. In the US, research by Kuratko (2006) found that the political influence of entrepreneurs has been growing over the past 25 years. An entrepreneur's ability to influence politics and legislation can be a factor that can greatly works to their advantage. Therefore, a nation which has a political system where entrepreneurs can have influence would be more likely to have higher levels of entrepreneurs and small businesses.

The various characteristics of a nation's economic systems can also have a direct impact on entrepreneurial activity. Hitt and Hoskisson found several economic factors that affect entrepreneurship: "inflation rates, interest rates, trade deficits or surpluses, budget deficits or surpluses, labor training laws, and educational philosophies and policies" (Kuratko, 2006). Specifically, a country's inflation rate can have a profound impact on the attractiveness of entrepreneurship. According to GEM studies, data shows that early stage entrepreneurial activities tend to be high in countries with lower per capita GDP; however, it declines sharply in the middle- income countries, rising again in high-income countries. These trends demonstrate how a nation's economic system can have a dramatic effect on entrepreneurial activity. Due to the fact that entrepreneurial dynamics preform differently in countries with varying levels of economic development, it is imperative that governmental policy addresses the needs of the economy (Wennekers et al., 2005). For example, in lesser-developed countries, public policy should focus on securing property rights and physical infrastructure with the objective of attracting foreign direct investment versus a developed country that perhaps should focus on promoting research and development.

The overall state of the economy can be an additional factor that can impact the level of entrepreneurial activity. The interviews conducted by Cheung and Chow, found that entrepreneurs in Hong Kong felt that a good economic environment made it easier to start a business (Cheung, 2006). Therefore, a country that is perceived as having a better overall economy may also find a higher degree of entrepreneurial activity.

Private sector support systems

Networking opportunities and access to information have long been considered important to successful entrepreneurship. Good networking can break down many of the obstacles that an entrepreneur may face. Networking can also give entrepreneurs easier access to key information necessary for their success. An extensive network of alliances can link entrepreneurs to key constituents in their industry, and align entrepreneurs with partners who have valuable skills and knowledge to share. In addition, networks can assist entrepreneurs in terms of financial gains and access as well (Pangarkar & Wu, 2013). Given the benefits that networking can have, the private sector has created support systems for entrepreneurs. In the United States, TIP clubs have emerged where business owners get together to discuss how they can help each other grow their businesses. Organizations like Young Presidents Organization (YPO) and Vistage International (formerly TEC) offer peer group support for business owners. One organization, Vistage International, studied their members and found increases in profits compared to national averages (Vistage, 2006).

A newer concept has also emerged over the last decade and has proven to positively impact the rates of entrepreneurial start-ups and their success. This concept is the business incubator. At its most basic level, a business incubator functions to provide budding entrepreneurs with both the resources and assistance that they could not otherwise access, in order to develop their entrepreneurial ventures. Prominent services provided by incubators and most sought after by entrepreneurs include financial assistance, consultation, marketing assistance, and office space and equipment. They also provide a secure location for ventures in infrastructure-weak areas to operate at decreased costs given the fact that incubators allow multiple ventures to operate at one location, thus sharing the costs of utilities and current technologies. More abstractly, business incubators also improve an entrepreneur's network and social capital within a community and industry. (Elmansori, 2015). Research into the impact of business incubators on entrepreneurship is a growing field, but already there has been research conducted to support the idea that firms who operate for a length of time within a business incubator will experience higher performance success in the future (Arlotto, Sahut, & Teulon, 2011). One such study confirmed that business incubation improves overall firm performance, and makes a point of distinguishing certain factors that are improved for a venture when they have completed their stay in a

business incubator. Such improved factors include, most prominently, firm survival rates and revenue growth followed by other improved factors such as improved job creation through the incubated venture, improved access to venture capital, and improved ability at networking and alliance development (Ayatse, Kwahar, & Iyortsunn, 2017).

Entrepreneurial education

Educational systems have played an important role in entrepreneurship. Recent research has found that "entrepreneurship has spawned a new education paradigm for learning and teaching" (Timmons & Spinelli, 2009). Private and public schools at all educational levels have launched entrepreneurship studies and programs.

Over the past decade this is a topic which has become increasingly important and thus increasingly researched within the entrepreneurial field. General conclusions found across multiple studies have found that there is strong evidence linking entrepreneurial intention and entrepreneurial education. For example, one such study found that an entrepreneurship educational program was positively linked to increased entrepreneurial behavior and intentions. The study confirmed that the program increased the belief that beginning a business and having a career as an entrepreneur was an entirely realistic possibility, and decreased the belief that becoming an entrepreneur was too complex of a process and too difficult to achieve (Rauch & Hulsink, 2015). Such findings were mirrored in other studies, further demonstrating the positive relationship between entrepreneurship education programs and entrepreneurial intentions and attitudes. It was also shown that such entrepreneurship education programs were very effective at developing the entrepreneurial intentions of those individuals who had never had any previous experience with entrepreneurship (Fayolle & Gailly, 2015). Such findings were not only consistent in physical settings, but in virtual settings as well; IT-based entrepreneurship education programs also demonstrate a positive influence on entrepreneurial intention in the same way as programs taking place in physical classrooms (Hejazinia, 2015). Similar studies conducted across multiple industrial sectors confirmed the same results. For example, a study focused on entrepreneurship as an aspect of the agricultural sector found that entrepreneurial-oriented classes were important in developing the future of the agriculture industry (Mehlhorn, Bonney, Fraser, & Miles, 2015).

Trade associations

Trade associations develop industries by promoting activities such as advertising, education, political donations, and lobbying. The influence that these parties have in their respective industries can be a useful aid for entrepreneurs looking to gain support in their market. Other benefits of trade associations include: they work to support and represent collective industry interests; they both generate and legitimize the identities of budding entrepreneurs entering the industry; they assist industry players when both intra-industry and inter-industry conflict arises (Esparza, Walker, & Rossman, 2013). Trade associations support entrepreneurial ventures in other capacities as well. They provide access to a wider knowledge base than an entrepreneur would have access to on their own, and can support ventures in receiving government and other types of funding to further their ventures. In addition, further advantages of trade associations comes in the form of competitive and trade advantage, especially in an international setting (Christie, Rowe, & Koroglu, 2003). Such support is exemplified by a business association found in Taiwan that assisted technology-based industries by providing a way to transfer hard-to-standardize technological knowledge. It is also demonstrated by the National Association of Software and Service Companies found in India, which worked to design marketing campaigns and support for small entrepreneurial firms who would not have the resources to develop or finance such an initiatives otherwise (Tzeng, Beamish, & Chen, 2011).

In some countries, entrepreneurs are required to interact with trade associations or trade groups. Specifically, many developing nations require approval from the trade group in their respective industry before entrepreneurial companies are able to enter the market.

Internal and external environments;

Infrastructure

Security:

A fundamental condition for business to thrive is security. Crime and civil unrest are enemies of entrepreneurs. In order to facilitate entrepreneurship, institutions within a state must promote just law enforcement and the protection of property rights. This can be attained through an effective legal structure and independent court system (Kumar & Borbora, 2017). It is obvious that countries with lower levels of security experience higher risks, which results in lower levels of entrepreneurship. The

level of security hurts both the potential entrepreneur and investors who shy away from regions with a high potential for civil unrest.

Physical infrastructure (transportation, utilities, and communications technology):

Malfunction in key systems such as transportation or utility services can severely harm businesses. This is particularly true for the more vulnerable start-up and early stage business. Reliable transportation, sources of energy, and physical infrastructure are essential for entrepreneurship to thrive. These factors are imperative to ensuring that the logistics performance of a business operates efficiently. Inefficient logistics deters economic growth by increasing the costs of doing business. In turn, when a country lacks the infrastructure to allow for productive logistics, individuals or organizations are dis-incentivized from investing or doing business in that country, which slows the economic growth as previously discussed (Arvis, Saslavsky, Ojala, Shepherd, Busch, & Raj, 2014). As supply chains become more complex in an ever increasingly globalized world, it is crucial that the logistics are not interrupted by physical detriments in order to allow for economic growth and entrepreneurial investment. Research in this field has identified the positive relationship between stable infrastructure and entrepreneurial development. It is further shown that the type of infrastructure implemented can influence the success of different industries at different rates. For example, it is shown that infrastructure in the form of accessible broadband is key to the development of high-tech industry firms, such as entrepreneurial firms with a focus on software, whereas infrastructure such as roadway and transportation systems has a greater impact on manufacturing firms (Audretsch, Hegar, & Veith, 2015). The effect of infrastructure on entrepreneurial activity is also dependent on the location of the entrepreneurial firm. A study conducted on the rural development of Bosnia and Herzegovina found that infrastructure such as road systems, broadband, and telecommunication play a critical role in the development of rurally-located entrepreneurs given the obstacles that such rural isolation often creates for such ventures (Delalic & Oruc, 2014). In addition, infrastructure that facilitates communication is especially important to developing SMEs given the international markets one must engage with in order to be successful (Aleksejeva & Aleksejeva, 2015).

Climate (natural disasters):

Many firms suffer the consequences of natural disasters. Hurricanes, tsunamis and many other natural disasters have either ruined businesses or kept entrepreneurs from investing in those areas. In the US, the SBA has created an incentive package to encourage small businesses to open in areas that were most affected by Hurricane Katrina. The Gulf Coast Business Matchmaking Fund provides access to federal, state and local governmental help to qualified businesses. These programs are created to help entrepreneurs invest in distressed areas.

Socio-cultural environment

Several socio-cultural factors have been addressed in recent research. For example, a study focusing on the success factors of young Chinese noted several socio-cultural factors such as “placing a high value on innovation, risk taking, and independence” (Cheung, 2006). These factors, among others, can have a dramatic effect on an entrepreneur’s ambition and ability to successfully start a business. Other various studies have also been undertaken to develop a better understanding of the way that the culture and national values of a country impact entrepreneurship. Some of these studies have focused on Schwartz’s (1994) cultural dimensions, including; autonomy versus embeddedness, egalitarianism versus hierarchy, and harmony versus mastery, to explore the culture-entrepreneurship relationship. Others have focused on Hofstede’s dimensions of power distance, uncertainty avoidance, individualism versus collectivism, and masculinity versus femininity to better understand this relationship (Hofstede & Bond, 1984). Across research, a few points concerning such relationships become clear. The way in which cultural values affect entrepreneurial rates are interrelated to the income of a country as well as to the type of entrepreneurial initiative undertaken; opportunity entrepreneurs who enter into a venture out of interest versus necessity entrepreneurs who enter into a venture out of economic need (Liñán, Fernández-Serrano, & Romero, 2013). Other outcomes of research in this area have found certain cultural dimensions to be generally associated with certain levels of entrepreneurial activity. For example, it has been shown that higher levels of both autonomy and egalitarianism tend to predict higher levels of entrepreneurship as income levels for a country increase, while embeddedness tends to be a more likely predictor of entrepreneurship in lower income countries. In addition, culture plays an important role in supporting

the legitimacy of entrepreneurship; those cultures which foster a supportive atmosphere in the form of valuing risk-taking and entrepreneurial spirit tend to see higher rates of entrepreneurship than those cultures which foster more anti-risk taking and anti-entrepreneurial sentiments (Liñán, Fernández-Serrano, & Romero, 2013). Such notions are further supported in other research. A study conducted using nations of the European Union found a variety of conclusions jointly related to culture, income, and entrepreneurship. For example, it demonstrated that higher-income EU countries that scored highly in the values of autonomy, egalitarianism and mastery also boasted the highest levels of entrepreneurial activity within the study (Liñán, & Fernandez-Serrano, 2014). While the previous studies explained the relationship between entrepreneurial activity and culture in terms of Schwartz’s dimensions, other studies strive to understand this relationship in terms of Hofstede’s dimensions. For example, the most prominent conclusion based on these dimensions has found that those countries which are highest in individualism, as opposed to collectivism, tend to demonstrate higher levels of entrepreneurial startups and venture success (Rarick & Han, 2015). For our model specifically, we will now focus on one socio-cultural factor that can be applied to entrepreneurs; religion.

Most religious beliefs and practices have an impact on the way of conducting business and trade. This can affect the entrepreneur’s behavior differently according to the rules applied to followers of each religion. According to Kwon (1997) “the individual elements making up an entrepreneur’s belief matrix influence the entrepreneurial process. Where religious salience is high, entrepreneurs will tend to use religious criteria to influence their decision making, even if it harms their short-term commercial interests” (p.151). Cheng (1958) in referring to the work of Max Weber concluded that religion was an important link to the business success. Weber believed that the protestant ethic was a powerful force in fostering the accumulation of wealth. This had a great influence on the entrepreneurs of the time.

Religious groups can also provide a resource for creating entrepreneurial capital (Kwon, 1997).

The concept of Islamic banking was developed to overcome obstacles that entrepreneurs were facing as a result of conflict between Islamic trade rules and the global banking system. An important difference between Islamic

commerce and conventional commercial transactions is the Islamic prohibition on paying or receiving interest. But there are also other significant divergences which need to be taken into account. An Islamic belief is that property is God-given. Clearly, the construction of property in the Islamic religion differs from that of property as a secular value. For Muslims, loans cannot be made or accepted in accordance with traditional banking methods. This is because traditional banking requires the payment of interest. To get around this, Islamic banking allows a prospective client to borrow money while still adhering to Islamic Law through a profit and loss sharing with the borrower. This sharing is a form of partnership where lenders risk their investment with borrowers on the basis of their capital share and effort. Unlike interest based financing, there is no guaranteed rate of return (Venardos 2005). To contrast traditional and Islamic banking further, the rationale of Islamic banking is to foster partnership and support businesses in both good and difficult times. There is no interest allowed so there is no payment burden on the borrower. Traditional banking requires the borrower is to pay a pre-determined rate of interest on the sum borrowed even if the borrower incurs losses. To insist on interest payments irrespective of the economic circumstances of the borrower, violates the Islamic rule of justice.

Furthermore, Vernardos (2005) claims that an interest-based system discourages innovation, particularly on the part of small-scale enterprises. Large industrial firms and big landholders can afford to experiment with new techniques of production because they have reserves to fall back upon. It is interesting to speculate how companies using traditional banking methods compare to companies using Islamic banking rules in a recession, where sales and profits are reduced.

Kwon (1997) studied Korean immigrants who show high rates of entrepreneurship and church attendance. The perceived connection is that ethnic churches provide entrepreneurs a pool of potential customers and employees while immigrants (especially new arrivals) benefit from church attendance as a means of finding work.

To summarize religion as a factor affecting entrepreneurship activity is worthy of study. There is much speculation that religion has an influence and relatively little empirical research supporting its importance.

Conclusion

The author has put forth a Global Model of Entrepreneurship and described the factors that comprise the model. Much research is needed to test these factors. It is oped that this research can help nations remove obstacles to entrepreneurship while creating opportunities for new venture creation. It is naïve to think that entrepreneurs can withstand economic, political and socio-cultural factors even if they have a strong entrepreneurial spirit. In a global world, a macro approach to the study of entrepreneurship is long overdue.

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Expanding on Lessons from Hollywood: Using Hollywood Video-clips and Movies to Integrate Creativity and Technology in Entrepreneurship

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Abstract

Today's entrepreneurship programs are charged with teaching today's students to be creative and innovative while considering various business aspects. This teaching brief uses video-clips and moves as an experiential teaching experience to teach students to integrate creativity, innovation, and technology.

Keywords

Experienced-based learning, creativity, innovation, technology, entrepreneurship, entrepreneurial movies, video-clips

Introduction

Entrepreneurship involves the skills necessary to identify and evaluate opportunities, acquire capital and resources, and to start, develop and operate a business. A collegiate curriculum in entrepreneurship emphasizes the development of creativity, innovation, interpersonal skills and entrepreneurial leadership. Experienced-based learning, which includes participative activities, has proven to be a very positive method to assist teaching (Brown et al., 1997, 1998; Heineke et al., 1995; Fish 2001). In a freshman-level Experiential Entrepreneurship, course objectives include developing a student's creativity, innovation and technological skills. This teaching brief uses video--clips and movies as an experiential teaching experience to teach students to integrate creativity, innovation, and technology. The two-part exercise promotes a student's understanding of his passions, strengths and weaknesses, creative brainstorming, innovation and entrepreneurial processes. In recent years, video-clips *chosen by the instructor* have been used by various instructors to supplement the classroom experience (Schindehutte 2006). This teaching brief outlines a significant modification to this teaching method and places the responsibility of seeking appropriate visual material to represent concepts on the student. By having students' self-select visual material, this method assists students with developing their technological and advertising skills. The 'Expanding on Lessons from

Hollywood' exercise has two distinct parts: in Part I, students use video-clips to represent their interests and passions, while in Part II, students use technology and pictures to develop advertisements. These exercises teach the students creativity, marketing, and technological skills and concepts. Student responses to the 'Expanding on Lessons from Hollywood' project reveal that 45 % (13) of them highly favor, 52% (15) favor, neutral,) 3% (1) and 0 % (0) do not favor using this experience in the classroom to teach the entrepreneurial processes

The course

The 100-level, second-semester Experiential Entrepreneurship course is required for the Entrepreneurship major but open to others as an elective. For each exercise in the second-semester, freshman, experiential entrepreneurship course individual and group learning occurs. Every student begins each exercise independently by exploring his or her own ideas and sharing them with the class. The student repeats the process as a member of the team, which the team then presents to the class. Each team consists of 5-6 students, with a team leader and team designated procedures. Individual, team written, and presentation skills are enhanced through this method. New concepts are introduced through reading assignments, lecture, and class discussion. The 75-minute, twice a week course has roughly 25-30 students.

The project and classroom instruction

The 'Expanding on Lessons from Hollywood' experience has two major parts: in Part I, the students use pictures and technology available on the web, and in Part II, the students use a movie clip to develop short advertisements for an innovative idea develop advertisements. Note, in the traditional 'Lessons from Hollywood' exercise, instructors choose video-clips to develop their lectures, but in our case, each student and team self-selects, develops and presents their video-clips.

Therefore, this method enhances self-learning, hands-on learning, and motivation.

Part I begins in the fourth week of class. Each student selects and presents over 2 minutes a picture - preferably his or her own pictures, as an advertisement for a potential business idea. Students' gather their potential business idea from their individual idea journal that they add to and submit one idea

for grading weekly. Each student is expected to submit a picture presentation that they can develop using technology available on the web (www.imadevideo.com). During the presentation, students explain how the picture (photovideo) represents their idea and why the concept is entrepreneurial. (n (no specific form is necessary... However, students need to present their business concept, business logo and slogan, potential target market and client, need to insert short advertisement and promotional sentence on their photovideo presentation). Instructor led discussion with the questions as "What kind of entrepreneurial elements and competencies were associated with?" "What are other web tools and technology exist as free resources for entrepreneurs as a promotional tool?" What is the impact of technology in business etc.). Following classroom discussion, that highlights creativity and innovation, teams meet and brainstorm a potential business venture. Again, using the technology, the team develops and presents a team picture clip. Classroom discussion following team presentations includes such questions and topics as: entrepreneurial behavior, effective use of technology and photovideo as an advertisement tools in business, and innovative marketing strategy and promotional tool.

To begin Part II, in week 9 of the semester, students read "The Care and Framing of Strategic Innovation Challenges"

(Arthur VanGunday, 2005). Students retrieve the associated assignment (Exhibit 1), assignment questions for lesson plan (Exhibit 2), viewing guide form (Exhibit 3), submission form (sample; Exhibit 4), movie clip data form (Exhibit 5), and a sample of a lesson plan (Exhibit 6) from Blackboard. By this time in the course, students have learned creativity, innovation, basic teamwork skills, and basic marketing skills. Each student selects and presents over 1 minute a movie clip - or youtube.com clip, for advertising a new business venture. Classroom discussion follows and may highlight different reactions of students to the same movie, same scene. How/why might this movie clip or photovideo help us understand rules of innovation, integrate innovation into the business opportunity, match innovation to marketing strategy, power of innovative thinking, goal oriented characteristics, persuasive attitude? Then, each team meets and chooses 2 movies to select movie clips from, which each student watches as homework. Using technology available through the media center or internet video making each team develops an advertisement for a new business venture. In 15 minutes the following week, the team presents their movie clip and lesson plan. Class discussion on the exercise then follows, led by instructor questions such as; what kind of entrepreneurial competencies associated such as proactiveness, innovativeness, attitudinal and behavioral aspects of entrepreneurship with? Impact of visual advertisement on business outcome, create the right advertisement and promotional tools and strategy for new venture using innovation and technology, consumer and client hunting.

Summarizing the demonstration

While the basic concept of using videotapes to express entrepreneurial concepts is not new (Coombes & Schindehutte, 2006), the modifications in 'Expanding on Lessons from Hollywood' place the responsibility of video selection and creative development on the student. In Part I, by using pictures, students learn their individual passions and interests, presentation skills, basic technology integration and marketing skills. In Part II, students expand their skill set to include additional technology into the entrepreneurial process and expand their marketing and presentation abilities. Through the 'Expanding on Lessons from Hollywood' activities, students develop their creative advertising methods, learning the value of visual aids to assist in expressing potential business ideas, powerful

tools to supplement current entrepreneurial education to encourage student engagement and imagination, innovative and creative access to learning styles, very flexible way to integrate to). Classroom discussion also highlights the considerations in today's business environment to reach customers through advertising and marketing.

Table 1 – lessons from hollywood in creativity and innovation: submission forms and information for assignment and team project

The movie clips can deal with any aspect of entrepreneurship, any course, and at either the graduate or the undergraduate level. Ideally, these film clips will have previously been used and refined allowing the author to share his/her experience with other members of class and the community.

Movie clips should consist of the following elements:

1	A movie clip (<i>saved in .wmv and/or Quick time format (.mov), approximately 5-10 minutes in length</i>);
2	A description of the scene, with a list of associated keywords, in the movie clip (<i>see Movie Clip Data form</i>)
3	A set of three to five questions that can be shared with classmates to focus their attention on aspects in the movie clip that are specifically important (<i>see Viewing Guide form</i>)
4	An explanation of how the movie clip relates to a specific topic such as creativity, innovation in an entrepreneurship course (<i>see Lesson Plan form</i>).

Please use the DVD+R type of DVD and mark it clearly (on the disk or the disk holder) as "*Lessons from Hollywood in Creativity and Innovation*" with your name (or your group members' name).

To facilitate information required for the database, standard templates have been developed and these are available on the blackboard website at XXX College, ENT 101 Experiential Entrepreneurship: Creativity, Innovation, Opportunity, and Idea Generation.

Table 2 – assignment questions for lesson plan (suggested length: 2-3 pages)

1	State the specific competency that the movie clip addresses (i.e., it is a way to sensitize students to proactive behavior and the effects of such behavior on entrepreneurship, etc.)
2	Explain how the movie clip relates to a content area or objectives in creativity, innovation, and entrepreneurship course
3.	Outline how you use this movie clip as part of a entrepreneurship class lecture session 3-A. What information should students have about this content area or objective prior to watching the movie clip? (i.e., this movie clip is appropriate for an upper division course, such that students have basic knowledge of relevant concepts but benefit from an opportunity for integration.) 3-B. What information do you want classmates to know after viewing this movie clip? 3-C. Provide 3 to 5 specific "lessons" you can share with classmates after watching the movie clip. 3-D. What is the recommended process for delivering the information (i.e., first do a short lecture, then play the movie clip, apply the competency in an assignment, etc.). 3-E. What materials should be provided to students? Provide samples of these materials if at all possible
4	Explain how the movie clip illustrates the principle or enhance understanding of the competency.
5	Explain and report results of methods used to assess whether the movie clip is effective in illustrating or explaining the competency (e.g. student feedback).
6	Summarize problems and/or questions encountered when using this movie clip and how you might deal with these issues

Table 3 – viewing guide form (suggested length: 2-3 pages)

The Viewing Guide is a helpful tool for planning the class session; it provides a snapshot of the timing, flow, objectives, etc. for the movie clip. Depending on the level of the course/students, the instructor might prefer to provide students with a printed handout. Alternatively, this viewing guide could be used by the instructor as a planning tool. Provide a set of instructions and/or questions the instructor can share with students prior to watching, while watching or after watching the movie clip. Ideally, these questions should guide students' attention to important aspects to be aware of or to help students make a linkage to course materials. Here is an example of how one could approach the viewing guide using Seabiscuit as the movie:
[Before showing the movie clip] You: Today we will be viewing a short clip from the movie Seabiscuit. Q1: Has everyone seen the full-length movie? If not, ask one of the students to give a brief overview. You: In this particular scene, you will notice....while watching the movie clip, listen carefully to what the actors are saying. Try to identify words or phrases that illustrate "XYZ" (e.g., risk-taking) and write these down.
[Show the video clip] [After watching the video clip] Questions that help students make connections between the topic and the movie clip could include any of the following: Q3: How does this movie clip apply to our discussion of "ABC" (e.g. resistance to change or dealing with uncertainty) yesterday? Q4: Did the movie clip remind you of an entrepreneur or a company you admire? Q5: What did you learn about "XYZ" (e.g., risk-taking) from this clip?

Table4 –lessons from hollywood assignment: submission form (sample)

Title of the Movie from which the Clip Originates: Good Will Hunting (Used to primary illustrate proactive behavior)		
Your name and contact information Instructor:		
Telephone Number	E-mail Address	Mailing Address
Entrepreneurship course(s) you are taking or have taken in the past? ENT10I: Experiential Entrepreneurship: Spring 2019 ENT201: Entrepreneurial Mind-sets: Fall 2018		
Background about you e.g. what are your interests related to use of film in creativity and innovation I am very interested in cultivating an additional understanding of competencies within our students. By using film clip that exemplify certain behaviors and actions, I believe that we can enhance our innovative and creative thought and communication of entrepreneurship and its intangible elements in the classroom.		

Table5 –assignment: movie clip data form (sample)

Title of the Movie from which the Clip Originates Good Will Hunting		
Year Movie was Released 1997	Genre Drama	MPAA(Motion Picture Association of American: Red Carpet Ratings Service) R (Restricted)
Main Actor(s) Robin Williams Matt Damon Ben Affleck	Director Gus Vansant	Awards Best Actor Supporting role Drama- Robin Williams Best Screenplay- Matt Damon, Ben Affleck (8 other OSCAR nominations: best director, best music-song/score, best picture, best film editing, best actress supporting role, best actor leadin2 role)

Total Clip Viewing Time 5 minutes	Counter start time 00:00:00	Counter stop time 00:00:00
Format of Origin Recorded from DVD	Chapter number (on DVD) 1 Or 2 or 3... 14 etc	Language English
Brief description of the scene in the movie clip (maximum 100 words) Sean tells Will about his life-altering decision to miss a World Series baseball game in exchange for meetin2 a beautiful woman.		
Additional information e.g. how the movie clip relates to the rest of the movie (maximum 50 words) The clip relates to the rest of the movie in that it shows Sean acting as a mentor to Will, and reveals to Will that, brilliant as he may be, he still does not know everything about the challenges that life has to offer.		
Keywords or phrases related to entrepreneurship I got to... I had to... Regret... regret... regret	Entrepreneurship content area(s) covered Proactive behavior. Opportunity Cost. Intuition Elements of Risk-Taking	
Notes and Suggestions	References and/or other sources of information	

Table 6 –lesson plan (sample): suggested length: 2-3 pages

1	State the specific competency that the movie clip Addresses (i.e., it is a way to sensitize students to proactive behavior and the effects of such behavior on entrepreneurship, etc.): Proactive behavior, primarily
2	Explain how the movie clip relates to a content area or objectives in creativity, innovation, and entrepreneurship course By exhibiting proactive behavior, in a real-life context, as well as showing how it can have a hugely significant impact, students may better understand the importance of proactive competencies

3.	Outline how you use this movie clip as part of an entrepreneurship class lecture lesson. 3-A. What information should students have about this content area or objective prior to watching the movie clip? (i.e., this movie clip is appropriate for an upper division course, such those students have basic knowledge of relevant concepts but benefit from an opportunity for integration.) Depending on the background of the students, this film clip is appropriate for both introductory and advanced classes. When competencies are discussed, this provides instructors to have an even greater impact by showing a 'fictionalized' action that exhibits that very competency. 3-B. What information do you want classmates to know after viewing this movie clip? How is proactive behavior able to impact a person's life and choices? Does opportunity always present itself at opportune times? 3-C. Provide 3 to 5 specific "lessons" you can share with classmates after watching the movie clip. Heed your intuition, and weigh your opportunity costs as well as you can. Sometimes, opportunity only has a small window, so gut feeling can often be the element that leads you to beneficial change. You may miss out on the obvious, but by exploring the unknown you may alter your life for the better, in ways that other opportunities would not let you. Discussion of 'how do we know what a good opportunity is' and 'when should we seize opportunity (e.g. trust your instinct and make quick, bold decisions vs. take time to evaluate carefully). Is there a right answer, or do we trust our own judgment depending on the situations? 3-D. What is the recommended process for delivering the information (i.e. first do a short lecture, then play the movie clip, apply the competency in an assignment, ect.) In my view, an introductory discussion followed by film clip, which is then followed by more intense discussion, is the most ideal. Additionally, a guide will facilitate and attune students to the central message within the clip (see attached for an author-formulated example). 3-E. What materials should be provided to students? Provide sample of these materials if all-possible. Potentially a script of the scene, further access to a site that contains the scene, as well as questionnaires that might lead the student through ascertaining what competencies might be involved (primary, secondary, etc.).
4	Explain how the movie clip illustrates the principle or enhance understanding of the competency. We see a 'real-life' example of how seizing a brief opportunity is often the most life altering and appropriate action we might ever take

5	Explain and report results of methods used to assess whether the movie clip is effective in illustrating or explaining the competency (e.g. student feedback). Classmates' feedback, as well as asking students for their own examples of decisions they have made that affected their lives. In this way, students may then begin to relate their own actions to the lessons we are trying to teach them.
6	Summarize problems and/or questions encountered when using this movieclip and how you might deal with these issues. Classmates may still not fully understand the concept of pro-activeness. It is a story being told by one of the characters about his past. It might be beneficial to have additional clips that show characters in the actual process of pro-active decision-making. For example, within the same film, we might show the end, where "Will," decides to drive across the country to be with the woman he loves.

Student feedback

During the last offering of the course, student feedback from 29 students on these activities was gathered. Student feedback is extremely favorable with 97% (28) favoring use of this demonstration to teach brainstorming, creativity and innovation, 0% (0) do not favor continued use, and 3% (1) are undecided.

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An Activity-Centric Quality Model of Software

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Abstract

In this paper, software activity, software activity instance, and the quality of the activity instance are defined as the ‘activity which is performed on the software product by a person or a group of persons,’ the ‘distinctive and individual performance of software activity,’ and the ‘performer’s evaluation on how good or bad his/her own activity instance is,’ respectively. The representative values of the instance quality population associated with a product and its sub-population are defined as the (software) activity quality and activity quality characteristic of the product, respectively. The activity quality model in this paper classifies activity quality characteristics according to the classification hierarchy of software activity by the goal. In the model, a quality characteristic can have two types of sub-characteristics: Special sub-characteristic and component sub-characteristic, where the former is its super-characteristic too simultaneously and the latter is not its super-characteristic but a part of its super-characteristic. The activity quality model is parsimonious, coherent, and easy to understand and use. The activity quality model can serve as a corner stone on which a software quality body of knowledge, which constituted with a set of models parsimonious, coherent, and easy to understand and use and the theories explaining the cause-and-relationships among the models, can be built. The body of knowledge can be called the (grand) activity-centric quality model of software.

Keywords

Software quality, software activity, software activity quality, software quality view, cause and effect relationships

1. Introduction

This paper presents an activity quality model which is a direct extension of Koh and Koh’s [2018] activity-oriented usability model for software. Koh and his colleagues [Koh 2016, 2017a, 2017b; Koh and Jiang 2017] define software activity as the activity which is performed on the software product by a person or a group of persons. Using, changing, and installing software products, for example, are important types of software activity. A software product should be good for various software activity types.

In this paper, the activity type and the activity instance are distinguished. Using, changing, developing, and installing, for example, will be used to denote types of software activity. Using instance, changing instance, developing instance, and installing instance, for example, will be used to denote the distinctive and individual performance of corresponding type of software activity. Rigorously expressing, whenever a person or a group

of persons performs an activity on a software product to achieve distinctive and specific objectives, an activity instance is generated. For example, a specific individual’s playing a specific software game product or shopping on a specific internet shopping mall at some specific moment is a using instance.

The quality of something is can be defined as, according to Collins Cobuild Advanced Learner’s English Dictionary, ‘*how good or bad it is.*’¹ Koh and Koh [2018] define the quality of a software product as ‘how product good or bad is the product?’ In this paper, the activity quality of a software product is defined as “how good or bad is the product for software activity?”

The goodness of a software product may vary by software activity type. Specifically, Koh and Koh [2018] define the usability of a software product as ‘how good a product is for being used’ or ‘goodness for using.’ This definition of usability is very simple and precise in sharp contrast with

¹ In this paper, italic font emphasizes that corresponding part is quoted with no or only slight changes from the cited literature.

many existing definitions of other authors, for example, ISO/IEC SQuaRE (ISO/ IEC 25000 Series, Systems and Software Quality Requirements and Evaluation).

Software quality is a very confusing concept. For example, some authors regard usability concerning user's experiences [Gonzalez Sanchez et al. 2009b; Microsoft Corporation 2000; U.S. Department of Health and Humanity Services 2017] while other authors regard it concerning the product itself [Herrera et al. 2010; ISO 9126-1, 9241-11, 25000 Series; Nielsen 2016]. Koh and his colleagues [Koh 2016, 2017a, 2017b; Koh and Jiang 2017; Koh and Koh 2018] combine these two approaches to define two types of usability: the usability instance as the goodness evaluated by the user him/herself of an individual using instance, and the product usability as the goodness of the product for using as a type of software activity. The product usability is get by aggregating all usability instances associated with a product.

In section 2, a classification model of software activity types is presented. In section 3, an activity software quality model is presented. The parts regarding using and usability in sections 2 and 3 correspond to those in Koh and Koh's [2018] activity-oriented usability model of software. In section 4, the discussions for a more comprehensive software quality body of knowledge are presented. In section 5, the conclusions and suggestions for further research are presented.

2. Software activity model

In this paper, the sub-types of a software activity type (the super-type activity) are classified into two categories:

- Special sub-type: An activity instance of a special sub-type is an activity instance of the super type too.
- Component sub-type: An activity instance of a component sub-type is not a super-type activity instance, but a part of a super-type activity instance.

Figure 1 shows an example of the classification of special sub-types of software activity. The criterion of the classification is the goal of the activity. The classification is not mutually exclusive. That is, it is possible to classify an activity instance to more than two types simultaneously. However, the level 1 classification is designed to be exhaustive. That is, it is possible to classify every activity instance into at least one type of level 1 properly.

It is noticeable that accessing is separated from using since accessing can occur independently with using: For

example, A person may access a software product, for example, to test or study it, or customize its interface [Koh and Jiang 2017].

It is also noticeable that learning, recognizing appropriateness and testing are absent in Figure 1. Testing is classified as a component sub-type of changing (refer Figure 2).

Learning and recognizing is not regarded as a type of software activity since they are generally used to denote mental phenomena which occur inside a person. [Koh 2017a]. For example, Oxford Learner's Dictionary defines learning as '*gaining knowledge or skill by studying, from experience, from being taught*'. On the other hand, studying or examining are usually used to denote a activity type that take time and efforts. Examining and studying are distinguished by their goals: learning about the product itself or some other things.

The classification in Figure 1 is not mutually exclusive. For example, a person can interface with a software product both for using and examining the product.

Maintaining is one of the most confusing software terminologies. For a hardware product, maintaining is typically used to mean preserving and restoring its original state [Koh and Han 2015; NF EN 13306:2001]. For a software product, however, maintaining is typically used to refer changing or modifying it [ANSI/IEEE Std. 729:1983; Boehm 1981; IEEE Std. 1219:1998; ISO/IEC 14764:2006; Martin and Osborne 1983]. GAO (The American General Accounting Office) and ANSI/IEEE Std. 729:1983 define software maintenance to include virtually all changes made on a software product after its delivery. Although the definitions of these organizations are generally accepted as the standard definitions of software maintenance, some literatures define software maintenance as a special type of software modification or change [Abran and Nguyenkim 1993; Chaptin et al. 2001; Hatton 2007; Hunt et al. 2008; ISO/IEC 14764:2006; Koh and Han 2015; Martin and Osborne 1983; Sneed 2004]. It is one of the most important causes of the chaos in the literature and practice regarding software maintenance to use the term 'software maintenance' without mentioning its scope explicitly [Chaptin et al. 2001; Koh and Han 2015; Seed 2004]. Here, maintaining is used to mean preserving the initial installed state of the product and do not involve changing the source code of the product.

- Developing: (Developer)* Making a usable software product.
- Operating: (Operator) Letting a software product able to be used.
 - ✓ Installing: Making the product operative initially.
 - ✓ Maintaining: Keeping the product in operation.
 - ✓ Recovering: Making the product operative again
- Examining: (Potential or Entry-level User) Studying to learn about the product or practicing using the product.
- Accessing (User): Becoming to be able to use the product.
- Using (User): Interfacing with the product with specific goals other than examining and changing the product.**
 - ✓ Working: Using a product to complete a set of predetermined tasks.
 - ✓ Studying: Using a product to learn about a particular subject or subjects.
 - ✓ Play: using a product to enjoy.
- Changing (User or Software Engineer): Making the product altered.
 - ✓ Changing user-interface: Altering user-interface
 - ✓ Changing data-interface: Altering data-interface.
 - ✓ Changing data processing: Altering the processing of data.
 - ✓ Changing architecture: Altering architecture.
- Retiring (Operator): Letting the product unable to be used any longer.

<Figure 1> Level 1 and level 2 special sub-types of Software Activity

* (the type of stakeholder who performs the corresponding activity type)

** This part is the same as the corresponding part of Koh and Koh [2018].

Changing in this paper denotes changing a software product after its delivery. Changing during the development phase is not included in the ‘changing.’ Changing user-interface, data-interface, data processing, and architecture are special types of changing. Special sub-types of changing may be classified otherwise. For example, Koh and Han [2015] classify the post life cycle changes of software classify into modification, enlargement, replacement, and retirement. It is beyond the scope of this paper, however, to classify the special sub-types of changing rigorously. The goal of this section is to present a satisfactory practical example of the classification of software activity.

Figure 2 shows examples of component sub-type of using and changing. Especially, the component sub-types of using are intended to be exhaustive and mutually exclusive. That is, every atomic activity of a using instance can and should be classify into one and only one of them. Those of changing are not intended to be so rigorous. Especially, testing is generally not performed against the current product, but generally performed against the altered product. So, it may improper to define testing as the software activity that is performed to the (current) software product.

Goodness of a software product

In this paper, the representative values of the instance quality population associated with a product and its sub-population are defined as the (software) activity quality and activity quality characteristic of the product, respectively. Koh and Koh’s [2018] usability corresponds to the population of usability instances associated with a software product.

According to Oxford online dictionary, the suffix ‘-ability’ means ‘the quality of being able to be or having to be’ or ‘the fact of having the quality mentioned.’ According to this principle, for example, usability can be used to mean ‘the quality of being able to be used,’ ‘how good it is to be used,’ or ‘goodness for using.’ [Koh and Whang 2016; Koh and Jiang 2017; Koh and Koh 2018]. Applying this naming scheme, the activity quality characteristics associated with software activity types on Figure 1 can be defined as in

Figure 3. Koh and Whang’s [2016] ‘-ability’ principle can be rephrased as the following.

- **Activity quality naming principle:** The suffix ‘-ability’ can be attached to and only to software activity type to denote the corresponding activity quality characteristics.

- Using (User): Interfacing with the product with specific goals other than examining and changing the product.**
- ✓ Navigating: Moving from a page to another
- ✓ Data-Preparing: Preparing the data to be input
- ✓ Data-Inputting: Inputting the data prepared.w
- ✓ Response-Waiting: Waiting for the response of the product.
- ✓ Output-Examining: Examining the output of the product.
- ✓ Output-Utilizing: Utilizing the output examined.
- Changing (User or Software Engineer): Making the product altered.
- ✓ Analyzing: Preparing to alter the product (validly, effectively and efficiently).
- ✓ Changing source code: Altering the source code of the product.
- ✓ Testing: Identifying the faults in the altered product.

<Figure 2> Examples of component sub-type of using and changing

* (the type of stakeholder who performs the corresponding activity type)

** This part is the same as the corresponding part of Koh and Koh [2018].

- Developability: (Developer; Requirement documents and/or specifications)* Goodness for developing.
- Operate-ability: (Operator; Source code or Executable code) Goodness for operating.
 - ✓ Install-ability: Goodness for installing.
 - ✓ Maintainability: Goodness for maintaining.
 - ✓ Recoverability: Goodness for recovering
- Examinability: (Potential or Entry-level User, Manager, Software Engineer; Source code and other documents) Goodness for examining.
- Access-ability (Potential user; Executable code with user interfaces): Goodness for accessing.
- Usability (User; Binary code with user interfaces): Goodness for using.**
 - ✓ Work-ability: Goodness for working,
 - ✓ Study-ability: Goodness for studying.
 - ✓ Play-ability: Goodness for playing,
- Changeability (User or Software Engineer, Manager; Source code): Goodness for changing.
 - ✓ User-interface change-ability: Goodness for changing user-interface.
 - ✓ Data-interface change-ability: Goodness for changing data-interface.
 - ✓ Data-processing change-ability: Goodness for changing data processing.
 - ✓ Architecture change-ability: Goodness for changing architecture.
- Retire-ability (Operator; Executable code and associated things): Goodness for retiring.

<Figure 3> Level 1 and level 2 Special Characteristics of Software-Activity Quality Model

* (The type of stakeholder who performs and evaluate the corresponding activity instance; Object of evaluation)

** This part is the same as the corresponding part of Koh and Koh [2018].

As activity types, an activity quality characteristic can have two types of sub-characteristics:

- **Special sub-characteristic:** The sub-characteristic of this type is its super-characteristic simultaneously.
- **Component sub-characteristic:** The sub-characteristic of this type is not its super-characteristic simultaneously. The aggregation of sub-characteristic of this type can be used as the super characteristic.

Figure 4 shows the component sub-characteristics of usability and change-ability corresponding to their component sub-types. It will provide much richer and more reliable data to measure the component sub-characteristics and to aggregate them than to measure the usability or change-ability directly [Koh and Koh 2018].

Significant special sub-characteristics of an activity quality characteristic can be measured and aggregated to be the activity quality characteristic. It also will provide much richer and more reliable information than to measure the activity quality characteristic directly. For example, study-ability and play-ability can be measured respectively and aggregated to usability for an educational game product [Koh and Koh 2018]. If play-ability is turned out to be low relatively to study-ability, then effort can be devoted chiefly into enhancing entertainingness.

3. Discussions

Koh and his colleagues [Koh 2017a, 2017b; Koh and Jiang 2017; Koh and Koh 2018] have proposed a model of the view (refer Figure 5) and quality view and principles regarding software quality:

- **Principle of one view:** A software quality model should correspond to one and only one software quality view.
- **Principle of Parsimony:** The quality characteristic should be defined as brief and precise as possible.
- **Principle of Cohesiveness:** The quality characteristic should consist of elements that fit together well and form a united whole.
- **Principle of Inheritance:** Every aspect of usability should be able to be inherited by its special sub-characteristics, possibly, with proper specializations.

The activity software quality model in section 3 abides by all the four principles. Specifically, it corresponds to the ‘performer’s view on software activity’ in Figure 5. As the result, the activity quality model is parsimonious, coherent, and easy to understand and use.

Usability*

- ✓ Navigate-ability: Goodness for navigating,
- ✓ Data-prepare-ability: Goodness for preparing data to be input,
- ✓ Data-input-ability: Goodness for inputting data,
- ✓ Response-wait-ability: Goodness for waiting response,
- ✓ Output-examine-ability: Goodness for examining output data.
- ✓ Output-utilize-ability: Goodness for utilizing the output. data

Change-ability.

- ✓ Analyzability: Goodness for analyzing.
- ✓ Source-code change-ability: Goodness for changing the source code.
- ✓ Testability: Goodness for testing.

<Figure 4> Component sub-characteristics of usability and change-ability

* This part is the same as the corresponding part of Koh and Koh [2018].

<Table 1> Koh’s [2017a] classification of the measures of SQuaRE’s product quality model

Category	Measures of SQuaRE’s Product Quality Model
DP (data processing) –Valid	FAP* (functional appropriateness of usage objective, functional appropriateness of system), FCp (functional coverage)
DP - Correct	FCr (functional correctness)
DP - Efficient	ERu (bandwidth utilization, mean processor utilization, mean memory utilization, mean I/O devices utilization,)
Data interface	CIn (data formats exchangeability, data exchange protocol sufficiency, wxternal interface adequacy), PRe (data reusability/import capability)

UI (user interface) – Information providing	UAp (demonstration coverage, description completeness, entry point self-descriptiveness), ULe (error messages understandability, self-explanatory user interface, user guidance completeness), UOp (message clarity, monitoring capability)
UI – Data inputting	SIn (buffer overflow prevention), UEp (avoidance of user operation error, user entry error correction, user error recoverability), ULe (entry fields defaults), UOp (input device support)
UI – Process controlling	UOp (functional customizability, undo capability)
UI–Presentation, appearance & composite	UAc (accessibility for users with disabilities, supported languages adequacy), UIn (appearance aesthetics of user interfaces), UOp (appearance consistency, operational consistency, understandable categorization of information, user interface customizability)
Composite	CCo (co-existence with other products), PAd (hardware environmental adaptability, operational environment adaptability, system software environmental adaptability), PRe (functional inclusiveness, product quality equivalence, usage similarity)
SWE (SW engineering) - Diagnosis and testing	MAAn (diagnosis function effectiveness, diagnosis function sufficiency), MTe (autonomous testability, test function completeness, test restartability)
SWE - Architecture	MMo (coupling of components, cyclomatic complexity adequacy), MRe (reusability of assets)
SWE - Coding	MRe (coding rules conformity)
System - Capacity	ECa (transaction processing capacity, user access capacity, user access increase adequacy), RFt (redundancy of components), ETb (mean response time, mean throughput, mean turnaround time, response time adequacy)
System – Runtime Behavior	MAAn (system log completeness), RAv (mean downtime, system availability), RFt (mean fault notification time), RMa (failure rate, mean time between failure), ETb (turnaround time adequacy), RRe (mean recovery time)
System – Operation Management	PIn (ease of installation), RRe (backup data completeness), SAc (authentication mechanism sufficiency, authentication rules conformity, system log retention, user audit trail completeness), SCo (access controllability, data encryption correctness, strength of cryptographic algorithms), SIn (data integrity, internal data corruption prevention), SNo (digital signature usage)
AV (activity view) –Developing & Maintaining	MMd (modification capability, modification correctness, modification efficiency), RFt (failure avoidance, fault correction), RMa (test coverage)
AV - Installing	PIn (installation time efficiency)

* The sub-characteristic to which the measures in the parenthesis belong. For the abbreviation, refer Table 2.

Table 2> Correspondence between the activity quality model and the product quality model of SQuaRE

This Paper: Level 1 Characteristic	Product Quality Model of SQuaRE			
	Characteristic		Measure	
	Short-term View	Mean View	Short-term View	Mean View
Developability			Activity view ⁱ	
Operate-ability	P, PIn, PRe; S, SAc, SAc, SNo; UOp	SCo, SIn	Activity view ⁱⁱ System ⁱⁱⁱ	Composite ^{iv} Data interface, System ^v Composite ^{vi}
Examinability				User interface ^{vii}
Access-ability				System ^{viii}
Usability	U, UAc	C, CCo, CIn; F, FAp, FCp, FCr; E, ECa, ERu, ETb; UIn,		Data processing; System ^{ix} User interface ^x
Changeability	M, MAn, MMd, MRe, MTe; PAd	MMo	Activity view ⁱ	SW Engineering
Retire-ability				
None	UAp, ULc			Composite ^{xi}

* Abbreviation of characteristics(sub-characteristics): For example, CCo means ‘Co-existence of Compatibility.

C(Co, In) = Compatibility(Co-existence, Interoperability),

E(Ca, Ru, Tb) = Performance Efficiency(Capacity, Resource utilization, Time behavior)

F(Ap, Cp, Cr) = Functional suitability(Functional appropriateness, Functional completeness, Functional correctness),

M(An, Md, Mo, Re, Te) = Maintainability (Analyzability, Modifiability, Modularity, Reusability, Testability),

P(Ad, In, Re) = Portability(Adaptability, Install-ability, Replaceability),

R(Av, Ft, Ma, Re) = Reliability(Availability, Fault tolerance, Maturity, Recoverability)

S(Ac, Au, Co, In, No) = Security(Accountability, Authenticity, Confidentiality, Integrity, Non-repudiation),

U(Ac, Ap, Ep, In, Le, Op) = Usability(Accessibility, Appropriateness recognizability, User error protection, User interface aesthetics, Learnability, Operability)

i. All the items belong to Developing & maintaining in Table 5. It is noticeable these items are related to change-ability too.

ii. Installing

iii. Operation management (including ease of installation only; It belongs to PIn in SQuaRE)

iv. Excluding product quality equivalence, usage similarity.

v. Operation management (excluding ease of installation).

vi. Including usage similarity only; It belongs to PRe in SQuaRE.

vii. Information providing (excluding monitoring capability), presentation, appearance, & composite (including appearance consistency only; It belongs to UOp in SQuaRE)

viii. Capacity (including redundancy of component, user access capacity, user access increase adequacy only; They belong to RFt, ECa, ECa in SQuaRE, respectively), runtime behavior (excluding system log completeness, mean fault notification time).

ix. Capacity (Excluding redundancy of component, user access capacity, user access increase adequacy), time behavior (including system log completeness, mean fault notification time only; They belong to MAn, RFt in SQuaRE, respectively).

x. Excluding the measures that is related to examinability.

xi. Including product quality equivalence only which belongs to PRe in SQuaRE.

Most of existing software quality model violate the principle of one view. For example, SQuaRE suffers from ambiguity, inconsistency, and contradictions in the definitions of quality characteristics and sub-characteristics, making it un-suitable to measure the design quality of software product [Al-Kilidar 2005; Haboush et al. 2014; Kitchenham and Pfleeger 1996; Koh 2017a, 2017b; Koh and Jiang 2017; Koh and Whang 2016].

Koh [2017] reclassifies 86 measures which belong to 8 characteristics (31 sub-characteristics) into 7 categories (15 sub-categories): Data processing (valid; correct; efficient), data interface, user interface (information providing, data inputting; process controlling; presentation, appearance & composite), composite, software engineering (diagnosis and testing; architecture; coding), system (capacity; runtime behavior; operation management), activity view (developing & maintaining; installing) (refer Table 1). The result shows the fundamental reason of SQuaRE's problems: The items related with end and means exist mixed unsystematically in a model (refer Table 1 and 2). For example, usability of a product is influenced by data processing of the product and the system on which the product is operated as well as by user interface of the product. Usability is indirectly influenced by data interface of the product too. In SQuaRE, only the items related to user interface are classified into usability, implying implicitly that usability is influence only by user-interface.

Moreover, among 86 measures of the product quality model, only 21 measures are intrinsic [Koh 2017b]. This means that the product quality model does not provide sufficient information for software engineers to improve the activity quality. It is the intrinsic quality attributes that software engineers can control to improve the activity quality. The contingency quality attributes are influenced many factors other than the product, which software engineers cannot control. More intrinsic quality attributes should be identified to complete a separate intrinsic quality model of software. The model should conform to the principles suggested above.

The quality model subjects to contingency view, third party's view, and long-term view respectively should be developed too. They should confirm to the principles suggested above. The theories to explain the cause-and-effect relationships among the models should be

developed too. The theories and the models will constitute a software quality body of knowledge which will guide development, use, and post life cycle changes of software.

4. Conclusions

The activity quality model in this paper is a direct extension of Koh and Koh's [2018] activity-oriented usability model for software. It has 7 characteristics, developability, operate-ability, examinability, access-ability, usability, changeability, and retire-ability, which correspond to developing, operating, examining, accessing, using, changing, and retiring, respectively. They are designed to be exhaustive and mutually exclusive.

a quality characteristic can have two types of sub-characteristics: Special sub-characteristic and component sub-characteristic, where the former is its super-characteristic too simultaneously and the latter is not its super-characteristic but a part of its super-characteristic. For example, usability has workability, study-ability, and play-ability as its special sub-characteristics. This classification of special sub-characteristics of usability is really an example and is meant to be neither exhaustive nor mutually exclusive. Usability has navigate-ability, data-prepare-ability, data-input-ability, response-wait-ability, output-examine-ability, and output-utilize-ability as its component sub-characteristics. They are meant to be exhaustive and mutually exclusive. The activity quality (sub-)characteristic is defined as "how good or bad is the product for the corresponding software activity?" or, shortly, 'goodness for the corresponding software activity.'

The activity quality model is parsimonious, coherent, and easy to understand and use. The activity quality model can serve as a corner stone on which a software quality body of knowledge, which constituted with a set of models parsimonious, coherent, and easy to understand and use and the theories explaining the cause-and-relationships among the models, can be built. The body of knowledge can be called the (grand) activity-centric quality model of software. To be so, the quality models which are subjects to contingency view, third party's view, and long-term view respectively should be developed. They should confirm to the principles of one view, parsimony, cohesiveness, and inheritance. The theories to explain the cause-and-effect relationships among the models should be developed thereafter.

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Smart Energy Service Modeling and Implementation: Case of Korea Telecom

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Abstract

KT(Korea Telecom), Korean mobile network operator, decided to fundamentally transform the country's energy system with the Korean Government in 2015. They resolved to introduce a system that could reduce waste and cut energy prices rather than meet the growing energy demand by building power plants. That system is KT-MEG, the Internet of Things(IoT) demand response platform which uses micro grids, cloud-based analytics and variety of mobile networks and communication mediums to manage the supply and consumption of energy throughout Korea. Now powering more than 18,000 sites, each with disparate energy requirements, KT has enabled more efficient energy use for power plants, vehicle charging points and a variety of other businesses. This case study explores the context in which the system was modeled and implemented, how it works and how it fits into the business plans in the perspective of the Korean mobile operator.

Keywords

Smart energy service, micro energy grid, platform, korea telecom,

I. Introduction

Telecommunications operators around the world are contemplating and competing severely to secure new growth engine for future revenue[1]. Korean operators (SK Telecom, KT, and LG Uplus) are no exception to this trend. The Korean operators have been pushing the smart energy service for their new business. Specially, the smart energy business developed by Korean telecommunications operators is distinct from traditional energy demand businesses. This is because Korean telecommunications operators can leverage ICT infrastructure. Therefore, this paper study the KT's smart energy service, which is driving the most innovative energy service and exhibiting noteworthy performance in Korea.

II. Kt's smart entergy service

KT runs in total USD 20 billion businesses including mobile business, which has the second most market share in Korean mobile communications market, and fixed businesses such as fixed internet and IPTV (both with the

top market share in Korean market)[3].

In 2014, KT acknowledged the need for new growth engine and identified the five new platform business: media, smart energy, enhancing public value of firms, finance and public safety [4]. The reason behind selection of smart energy as one of the new business opportunities was that KT possessed a nationwide ICT infrastructure based on national network coverage, which leads to KT consuming 0.5% of Korea's overall energy consumption (2500GWh amounting to USD 300 million electricity fee in 2016). Recently, KT has endeavored to reduce energy cost and maximize energy consumption by leveraging accumulated know-hows and adopting new innovations in energy demand technology based on big data analytics, artificial intelligence and cloud infrastructure [5].

In December 2015, KT conducted government-sponsored R&D project 'Korea Micro Energy Grid'. And then KT launched KT-MEG which is an integrated total control and management platform for energy.

KT MEG is, in essence, convergence of KT's ICT capability on energy industry and provides various services such as renewable energy (energy generation), energy efficiency (energy demand) and electric vehicle charging & energy demand operation (energy trade) to various venues including photovoltaic power plant, apartments, office buildings, hospitals, hotels and factories[6].

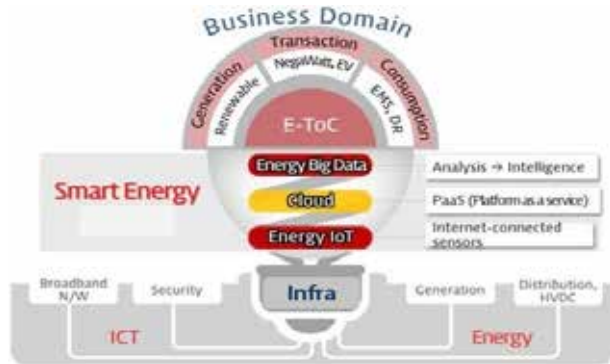


Figure 1. KT's Smart energy service framework

In energy generation, KT analyzes in real-time the factors that reduce efficiency of photovoltaic power plants (e.g., failures, overheating and dust) to maximize energy generation and provides real-time remote failure response service for service recovery. KT's offerings are not limited to management of photovoltaic power plants but also in deployment of the power plants. In 2014, KT already deployed 7.5MW capacity photovoltaic power plant in Daechuok city with total of 13MW of deployment up to date (13MW is a capacity for 3,800 households to use electricity annually). KT-MEG monitors the status of power plants in real-time while providing reliable and economic management/operation of power plants with big data analytics based on various data (e.g., climate status and electricity generation status).

In energy consumption, KT aims to provide energy cost reduction and reliable operation by optimal management of energy facilities of venues such as buildings, factories and hospitals. This is enabled by heat/electricity consumption demand forecast based on big data analytics and guidance on optimal operations & energy reduction. For example, KT helped hospital "P", with capacity of 500 infirmaries, to reduce its energy consumption by 30% with its ICT capability. And a sports complex "B" in Gwangju has experienced a 75% reduction in its energy use since using KT-MEG.

For energy trading, KT additionally obtained license for electricity grid service provider to be able to provide re-selling of electricity and electric vehicle charging. KT's

electricity vehicle offering, with mobile charging, expands the adoption of electricity vehicle by 50% while reducing the deployment cost of charging infrastructure by 83%. This is accelerating the deployment of electricity vehicle charging infrastructure in Korea.

There are also trials on energy demand resource operations, where mechanisms for forecasting situations requiring quick charging are in progress. This maximizes the energy reduction capability and consequently the stability of the electric grid.

The management and control of these services are centralized in KT-MEG Center (In Gyeonggi-do Kwacheon), where 35 energy specialists reside in the center for 24/7. The response becomes quicker when the center interconnects with KT's customer centers, which are spread throughout the nation.

III. Service modeling and implementation

Available to both energy consumers and suppliers, customers can connect to KT-MEG through LTE-M, 3G/LTE, RFID, fixed-line communications and KT will add NB-IoT to its portfolio of network technologies by the end of 2018. With its range of connectivity mediums, KT-MEG has very few restrictions on where it operates and what type and size of business it can serve. With the commercial launch of Mobile IoT(licensed spectrum low power wide area technologies), the service will be able to expand the number of businesses it can serve due to the technologies' ability to operate in very hard-to-reach or extremely remote locations, such as underground, or areas with minimal coverage. Energy use is relayed to the network control center in Gwacheon city, where experts monitor site usage and micro grid demand to inform them of how to ensure optimal grid balancing and power distribution. Supporting this task is KT's cloud-based analytics platform, the 'e-Brain', which analyses usage trends and performs diagnostics in real time. Capable of machine learning, KT's e-Brain is able to factor weather, usage patterns and profitability to generate its own prediction models that enable efficient management of energy generation, energy consumption and energy trading[7].

A. Energy generation

KT-MEG has been integrated into many of the nation's power stations, including 247 renewable energy sites. It aids energy producers by providing real time remote monitoring, diagnostics and, for solar energy sites, consolidated PV-ESS management[8].

Power stations using KT-MEG, have been able to make significant savings. For example, solar power sites in Yeosu and Jeonnam have significantly increased the number of hours in which they generate power per day, respectively producing 3.98 hours and 3.88 hours compared to the national average of 3.5 hours. The Korean operator estimates that these efficiencies add up to colossal savings. They calculate that, if adopted by all the nation's power plants, with proper management and distribution of power demands, KT-MEG could make an energy saving equivalent to 5 new nuclear plants operating in peak demand – 10% of the country's electricity usage. Delaying or eliminating the construction of additional power plants would result in vast savings for the Government and help the country meet its national carbon reduction goal.

B. Energy consumption and trading

Wherever Times is specified, Times Roman or Times New Roman may be used. If neither is available

The KT smart energy service allows a wide range of businesses the means to reduce their consumption, principally by enabling more efficient use of heating, ventilation and air conditioning (HVAC) and lighting facilities. Business customers connected to KT-MEG have the opportunity to observe real time consumption and adjust their energy use through the energy service application. Additionally, smart energy service can also make use of KT's remote monitoring and analysis to provide forecasts, peak management and optimization guides.

Complementing this is KT's energy Demand Response, which allows service the opportunity to profit from reducing their consumption during periods of high demand and increase their consumption at times when there is less demand[9].

By monitoring energy use in real time, KT is also able to advise customers when to make these trades and reduce the risk of outages at times of high demand. Services that have adopted KT-MEG have seen their power energy consumption drop dramatically.

IV. Service performance and challenges

A. Revenue growth from new energy service system

The smart energy business leveraging KT's ICT capability is not only enhancing KT's brand image, but also as new revenue stream. KT made less than KRW 20 billion in 2015, but in 2016 it monitored and controlled 851 sites

through KT-MEG in 2016 leading to 100% growth in revenue. In the first half of 2017, KT already made sales of KRW 100 billion with annual sales target of KRW 200 billion. Currently, KT-MEG Center is monitoring and controlling 3,300 sites (including energy efficiency consulting, demand resource operations and electric vehicle charging) currently. In the future, it will integrate ESS (Energy Storage System) and AMI (Advanced Metering Infrastructure) to expand and advance KT-MEG system.

Figure 2. Business performance of KT's smart energy services

KT's performance has attracted attention of its competitors in Korea (SK Telecom and LGUplus) and they are also considering new energy services leveraging ICT capability as new business items. In addition, Korean regulators see KT's business as an opportunity to foster energy industry and adoption of environment-friendly energy sources.

B. Taking the initiative in global market

KT's KT-MEG smart energy platform was awarded the best mobile award in the smart city in MWC Global Mobile Awards 2017. Global Mobile Awards is awarded by GSMA (GSM Association), which unites over 800 mobile operators and 300 companies in the broader mobile ecosystem, and is considered as the "Oscar award" in the field of ICT. The smart city category awards services that contributed to changes and advances in smart cities by leveraging mobile technologies[10].

In addition to awards, KT deployed energy management systems in Las Vegas (Sahara Hotel) and Chicago (Montgomery), and also deployed 3G-based AMI systems in Uzbekistan along with independent Photovoltaic power generation facilities (with ESS) in Rwanda. KT's performance is not limited to the Korean market, but KT is expanding globally with its technological excellence.

C. Transformation to environmental & sustainability firm

KT has been selected as the best company for 4 consecutive years from 2013 by the Carbon Disclosure Project that evaluates excellence in environmental management. As the selection illustrates, KT is considering to develop its smart energy business beyond mere revenue creation to contributing to international environment issues. KT has already been minimizing the energy consumption of networks by introducing energy efficient equipment

and optimization of cooling. It has also been replacing lighting with that of higher efficiency to reduce building energy consumption. Recently, KT announced that it will replace a tenth (1,000) of its fleet of corporate vehicles (10,000) with electric vehicles and will be replacing all vehicles whose lifecycle ends with electric vehicles by 2020. They currently have 30 electric vehicle charging sites within their offices, but plans to extend it to all 400 offices to support its electric vehicles.

With its smart energy business, KT expects to reduce air pollution (e.g., fine dust and carbon monoxide) and operations & fuel cost for its corporate vehicles.

V. Conclusion

The 4th industrial revolution is expected to converge and add intelligence to traditional industries with latest technologies such as artificial intelligence, cloud, big data and IoT. As a result, boundaries distinguishing industries are blurring and business models are rapidly changing, where firms are faced with new opportunities for changes in all aspects ranging from technology, infrastructure, process and platform.

This case study analyzed the case of Korean mobile operator KT to see how a mobile operator expanded beyond its existing offerings of mobile, internet and media services to new businesses leveraging digital technology. The case study also analyzed in-depth how the system was modeled and implemented and what the opportunities and challenges of the new service system was.

KT's smart energy business utilizes ICT to resolve energy issues such as global climate change and energy consumption growth, and provides growth opportunities for KT with its KT-MEG platform. KT-MEG platform analyzes big data collected from energy generation, consumption and trade to diagnose the energy issues along with forecast and alternatives. This provides new service experience for the customers and therefore makes KT-MEG an "integrated energy service platform".

In this process, KT approached the issue in the perspective of innovation and applied aggressive measures to develop energy service system.

In the future deployments, Having achieved significant commercial success, KT have already announced plans to develop KT-MEG into a more sophisticated smart energy efficiency service by 2018. This will underpin the operator's smart city strategy, in which they hope KT-MEG can incentivize the connection of new devices and services. Central to this is operator's ambition to improve Korea's urban infrastructure. Adding to the nationwide

deployment of the EV charging points, KT have stated their goal to establish widespread monitored smart parking and intelligent transportation, of which LTE-M or NB-IoT could play a key role. The operator has also confirmed their plans to replace existing streetlights with multipurpose LED lamps that connect to a central management system, and is working with various regional governments to reach this goal.

KT's case can be beneficial for other mobile operators in finding new growth opportunities in sustainability rather than perceiving it as a liability. Other mobile operators will learn from this case and develop new service system to differentiate customer experience, and to generate service impact in addition to leveraging latest ICT technologies such as artificial intelligence, IoT and big data.

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Exploring the Effect of Online Time Sales on Actual Purchase in China

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Abstract

This study explores the effect of time-deals, i.e., online promotions with time limit. Recently many online/mobile shopping sites in China utilizes so called hot deal marketing technique for a short duration at a specific time. The purpose of “time-deals” is to attract online shoppers with deep discounted price and induce consumers to purchase items on time-deals. Although some prior research studied the role of time-deals in promoting consumers’ purchase behavior, it used the experimental approach by building mock-up shopping sites and asking participants purchase intention. However, purchase intention does not always result in purchase behavior. This study extracted actual sales for three items on time-deals from an online shopping site in China. A comparison of sales volumes during a normal period and a time-deal period shows that time-deals significantly increased the sales volume. This finding confirms the effect of time-deals on purchase behavior.

Keywords

Online shopping, e-commerce, time sale, promotion, purchase behavior

Introduction

Online or mobile shopping sites in China and Korea have employed hot deal marketing techniques called “time-deals” which provide deep discounts for selected items. Time-deals promotion is neither new nor unique to online shopping. In the US, there has been a traditional time-deals event called Black Friday. On the next day after Thanksgiving, retailers usually used to offer one-day sales bonanza with deep discounted prices for a variety of items in their stores. Nowadays, the sales event starts even before Thanksgiving and extends to next Monday called Cyber Monday with the rise of the Internet. In 2018, the sales amount, online and offline combined, was estimated to be 143.82 billion dollars in total and online sales reached 17.8 billion dollars (See [15]).

The Chinese version of Black Friday is called Singles Day which is November 11 (11-11). Alibaba started a 24-hour shopping event in 2009 for comforting singles ostensibly, and in 2018 made \$30.8 billion sales which is much higher than sales on Black Friday and Cyber Monday combined in the US. Now, other online shopping sites such as Jingdong(JD.com) and Suning(suning.com)

joined the sales spree in order not to lose their customers. As a result, Singles Day becomes a national event and is labeled as an example of ‘day marketing’ which is a kind of time-deals.

Although it is well known that day marketing events like Singles Day generate large sales, each event happens only once a year. Some reports point out that retailers may suffer from low sales for some time before and after those events (See [4], [5]). This could be possible if consumers delayed purchases until the event day and bought more items than necessary on the event day.

However, there is an opposite view that participants to day marketing events expressed higher intention to revisit the shopping site and to repurchase the items for reasons of lower price and convenience (Lee & Whang 2016).

Online consumers can purchase each item selectively from different trustworthy e-tailers that sell the item with the lowest price. In response to consumers, E-tailers employs dynamic pricing mechanism and time-deals mechanism. Each e-tailer comes up with various time-deals mechanism to attract consumers, especially when the number of visitors is low.

This study is interested in whether time-deals promotion has a positive effect on purchase behavior and, if yes, how sales change before and after time-deals.

Time-deals mechanism

Typically, time-deals mechanism imposes a time limit. However, each shopping site sets up time limits in its own way. This section surveys time-deals of three Chinese shopping sites and three Korean shopping sites.

Alibaba has two shopping sites, Taobao and Tmall. When customers visit their home pages or open their mobile apps, they see a banner, ‘buy in a hurry.’ This banner is linked to a web page that displays items with a limited quantity on sale for a limited hour(s) starting at a specific time. Time durations are various: midnight ~ 8:00, 8:00 ~ 10:00, 10:00 ~ 11:00, 11:00 ~ 12:00, 12:00 ~ 13:00, 13:00 ~ 14:00, 14:00 ~ 16:00, 16:00 ~ 18:00, 18:00 ~ 20:00, 20:00 ~ 22:00, 22:00 ~ 23:00, and 23:00 ~ 24:00. For each time block, different items are listed with a discounted price which is sometimes less than half of the regular price. Quality items with big discounts tend to be sold out in a short time. Consumers can set up an alarm notification for items with interest in advance. Selling items during time-deals was free for sellers when it started. Later they charge sellers fees for time-deals as more consumers show interests.



Figure 1 – Taobao's Webpage

JD.com has ‘Spikes Deals’ whose original Chinese word has a meaning that items on ‘Spikes Deals’ will be sold out in a second due to their lowest prices. ‘Spike Deals’ lists both Jingdong’s and other sellers’ items on separate pages.

This site lets consumers know in advance when to sell what items with what price. It updates items every morning from 8 o’clock. ‘Spike Deals’ for each item may last for hours, a day, days, a week, a month, or until sold-out.



Figure 2 – Jingdong's Webpage

Suning.com has ‘Special Deals’ that sell special brand items for special prices at special hours and update items at 9:30 every morning. This site shows how many people are interested in each item to be sold in the coming hours. All three shopping sites show original price, discount price, and remaining volume, percentage of items sold, and items to be sold in coming hours.

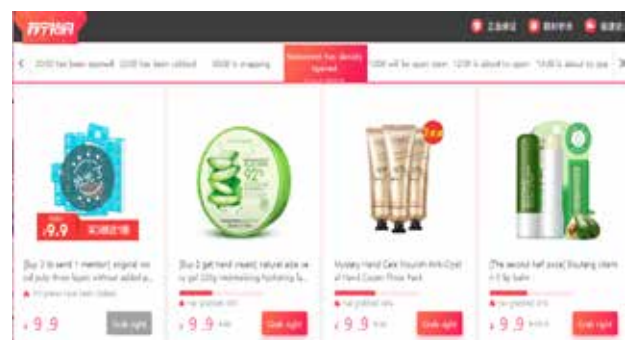


Figure 3 – Suning's Webpage

Korean shopping sites also have time-deals in different styles. Auction.co.kr has a web page called All Kill that shows all items on sale for a specific day and changes items every day. Wemakeprice.com has Today's 11 O'clock Deal which lists a few selected items for a limited volume and sells a half of the volume at 11:00 am and the remaining half at 11:00 pm in addition to Today's Special Price. Coupang.com has Goldbox 1 Day Special Price and New & Hot every Tuesday and Friday. In the past, Coupang had Morning Pang page which listed limited items for consumers who visits the site early morning, similarly to Early Bird Special. Online shopping sites strive hard to come up with new ways of time-deals.



Figure 4 – Auction’s Webpage



Figure 5 – Wemakeprice’s Webpage



Figure 6 – Coupang’s Webpage

Previous studies

According the prospect theory (See [10]), people are more sensitive to loss than gain from a reference point¹ and try to avoid regret over missing opportunities. This theory implies that consumers would be more willing to purchase

¹ People consider a positive difference between an expected outcome and a reference point as gain and a negative difference as loss.

items with discounted price for a limited duration than usual.

Previous studies on scarcity messages in advertisement or promotion have consistently reported that in general scarcity messages have a positive effect on increasing the purchase intention. Although scarcity messages can be classified into two groups, quantity scarcity and time scarcity (See [6]), all the shopping sites surveyed in the previous section utilizes a combination of both quantity scarcity and time scarcity.

Scarcity messages increases the perceived value of an item, product or service (See [1], [2]), incites the desire to own the item (See [3]), and expedites consumers’ decision to purchase the item (See [11]). In case of time and volume restricted promotion offer, perceived value-price ratio would be much higher thanks to dumpy prices of listed items.

Scarcity messages increases the attractiveness of an item due to its emphasis on unavailability (See [12]). Rare items are usually more expensive than easily available ones. As a result, only a limited number of people can possess rare items. However, online shopping sites usually offer popular items rather than rare items.

Scarcity messages put psychological pressure on potential buyers. Time restriction raises felt-time pressure, creates consumer’s sense of urgency (See [14]), and urges consumers to take actions (See [14]). However, in a study the effect of time restriction was not significant, although there was a marginal interaction effect between time limit and discount (See [7] [9]).

Most studies have adopted experimental approaches and the purchase intention as the dependent variable. In experiment, participants were asked to visit mock-up shopping sites, read scarcity messages, and then answer questions about intention to purchase, repurchase, or recommend items to others.

Although intention is a precedent of purchase behavior and a measurable variable, there are many other factors between intention and behavior. It would be better if there is a way to measure purchase behavior directly. This becomes possible recently, since some shopping sites open visitors’ behavior to public and web crawling and data analysis tools are available.

Research approach

This study utilized big data analysis software developed in China which has web crawling features and chose Jingdong for collecting data about purchase behavior.

Jingdong as a B2C site has offered time-deals promotions for years and sells quality items only. It occupies about a quarter of the online market in China and has its own logistics system including 15 logistics parks, over 500 large warehouses, nearly 7,000 delivery & pickup stations, and a quarter million vehicles for transportation and delivery (See [8]; [13]). Jingdong offers regular time-deals every day and special time-deals on event days such as November 11 and December 12.

In order to address the first research question, whether time-deals affect purchase behavior, this study first compared sales volume of time-deals days with that of no time-deals days. For the comparison, three items of cleaning robot, electric rice cooker, and smartphone were selected. The web site was crawled over six months (from September 2017 until February 2018)². and crawled data included User_ID, Membership-Level, Review, Review_Time, Additional_Review_Time, Purchase_Time, Order Quantity, Upvote number, Comment number, Website, Website Title, and Data Crawling Time. In total, 3,036 purchase data were crawled and summarized into daily sales for the three items.

The second research question is about changes in sales before and after time-deals. This study divided time-deals into two kinds, regular time-deals and special time-deals, and analyzed sales volume changes before and after two kinds of time-deals. Selected items in regular time-deals were cleaning robot and electric shaver, while selected items in special time-deals were electric rice cooker and smartphone. The website was crawled again and 2,919 purchase data were collected. Daily sales were categorized into two groups on the basis of time-deal days.

Research result

Effect of time-deals

Sales volumes of three items are shown in <Figure 7>, <Figure 8>, and <Figure 9>.

² Time-deals dates were not the same for three items. In order to extract data enough to perform statistical tests, sales volumes of ninety days were necessary for each item. Crawling over six months generated necessary data.



Figure 7 – Cleaning Robot Sales

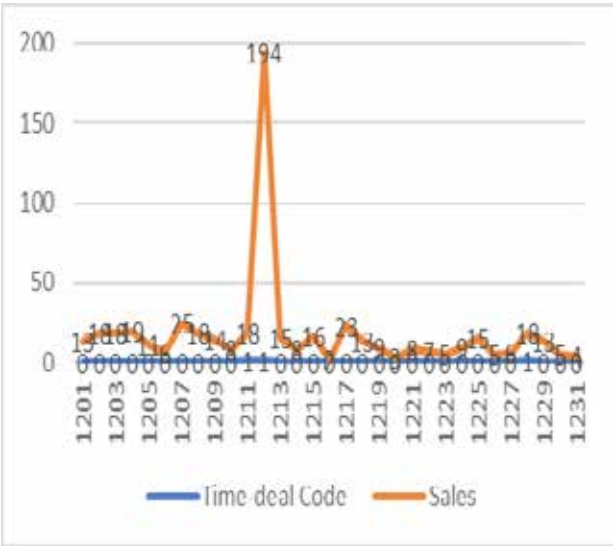


Figure 8 – Electric Rice Cooker Sales

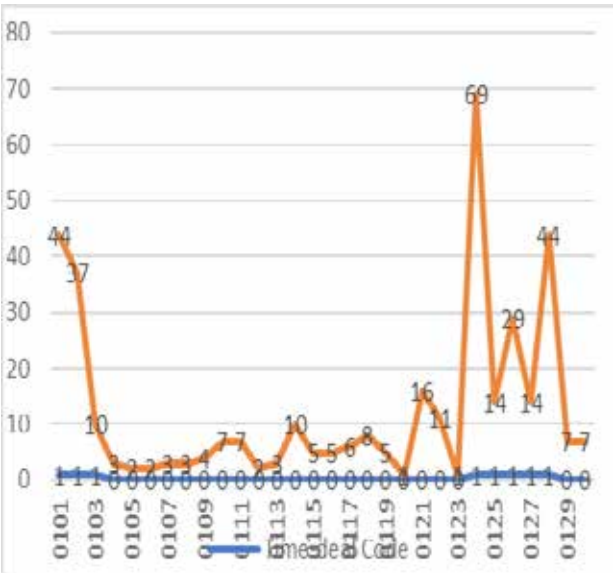


Figure 9 – Smartphone Sales

Sales volume of cleaning robot for September 2017 is shown in <Figure 7>. The horizontal axis represents each day and '0' represents a day without time-deals while '1' represents a day with time-deals. For example, cleaning robots were listed in time-deals for three days, September 5 ~ 7, and the sales volume on September 6 is 189. In September, 9 days were in time-deals and 21 days were not. <Figure 8> shows daily sales of Electric Rice Cooker in December 2017. 3 days were in time-deals and 28 days were not. <Figure 9> shows daily sales of Smartphone in January 2018. 8 days were in time-deals and 22 days were not. In summary, the sales volumes spiked on time-deals dates in comparison with no time-deals dates.

Table 1. Time-deal days vs. no time-deal days

Items	Time-deal			No time-deal			t value	P value
	N	Mean	STD	N	Mean	STD		
Cleaning Robot	14	28.5	28.5	77	5.0	8.1	3.1	0.009**
Electric Cooker	9	12.3	7.1	81	5.4	6.1	2.8	0.02*
Smart-phone	10	40.0	24.5	81	2.3	2.9	4.9	0.001**

* : $p < 0.05$, ** : $p < 0.01$

<Table 1> shows the result from statistical tests for three items. In case of Cleaning Robot, it was on time-deal for 13 days and not on time-deal for 77 days. The average sales volume on a time-deal day is 28.5, while the average sales volume on a non time-deal day is just 5.0. A t-test result shows the sales volume on a time-deal day is significantly higher than the sales volume on a non time-deal day.

In case of Electric Cooker, it was on time-deal for 9 days and not on time-deal for 81 days. The average sales volume on a time-deal day is 12.3, while the average sales volume on a non time-deal day is just 5.4. A t-test result shows the sales volume on a time-deal day is significantly higher than the sales volume on a non time-deal day.

In case of Smartphone, it was on time-deal for 10 days and not on time-deal for 81 days. The average sales volume on a time-deal day is 40.0, while the average sales volume on a non time-deal day is just 2.4. A t-test result shows the sales volume on a time-deal day is significantly higher than the sales volume on a non time-deal day.

In summary, this study confirms that time-deals have a positive effect on consumers' purchase behavior and result in sales boost.

Sales change before/after time-deals

The next concern of this paper is to examine sales changes before and after time-deals. The comparison of sales before and after regular time-deals is shown in <Table 2>. In case of Cleaning Robot, the average sales volume for 42 days before regular time-deals was 5.9, while the average for 35 days after time-deals was 6.9. A t-test shows that the difference is not significant at the 5% level. In case of Electric Shaver, the average sales volume for 24 days before regular time-deals was 4.5, while the average for 24 days after time-deals was 4.1. Another t-test shows that the difference is not significant at the 5% level. In summary, there is no evidence that regular time-deals decrease sales afterwards.

Table 2. Sales change before/after regular time-deals

Items	Before time-deal			After time-deal			t value	P value
	N	Mean	STD	N	Mean	STD		
Cleaning Robot	42	5.9	10.4	35	6.9	16.7	-0.3	0.75
Electric Shaver	24	4.5	3.1	24	4.1	4.5	0.3	0.74

Two special time-deals on November 11 and December 12 were chosen for this study. The comparison of sales before and after the special time-deals is shown in <Table 3>. In case of Electric Cooker, the average sales volume for 21 days before the special time-deals was 10.7, while the average for 21 days after time-deals was 6.5. A t-test shows that the difference is significant at the 5% level. In case of Smartphone, the average sales volume for 21 days before the special time-deals was 1.9, while the average for 25 days after the time-deals was 0.7. Another t-test shows that the difference is significant at the 5% level. In summary, there is evidence that special time-deals decrease sales afterwards.

Table 3. Sales change before/after special time-deals

Items	Before time-deal			After time-deal			t value	P value
	N	Mean	STD	N	Mean	STD		
Electric Cooker	21	10.7	8.3	21	6.5	3.8	2.1	0.04*
Smart-phone	21	1.9	1.8	25	0.7	0.9	2.8	0.01*

* : $p < 0.05$

Conclusion

This study investigated the effect of time-deals from the seller's point of view with focus on consumer behavior, rather than purchase intention that most past research utilized as a dependent variable. In addition, this study analyzed real sales data from real consumers who purchased items from a real online shopping site, rather than subjective survey responses from participants who visited a mock-up shopping site.

There are three findings. First, time-deals encourage consumers to make a purchase and result in significant sales increase. Second, there is no evidence that regular time-deals decrease sales after time-deals. Third, the sales volume of items on special time-deals decreases after special events.

However, this study examined only electronic items, although the price range covered both low price and high price. This study also has limits in that overall long-term effect of time-deals was not investigated. In the future, it is necessary to study time-deal effects with service items and check results and to examine whether decrease in sales volume is the result of temporary effect or of lasting effect.

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Management Education in India: Issues and Concerns

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Abstract

Due to the advent of liberalisation, privatisation, globalisation, change in demographics, social imperatives, technology and environmental factors, Management Education in India is heading towards a drastic transition. Though management being the youngest and most popular domain of social sciences in India. In order to visualise developed India, it is need of the hour to understand various issues, risks, challenges, opportunities and rewards associated with future of Management Education in India. The avenue followed by 'Management Education in India' was never a lap of luxury, but was extensive a treacherous one.

The ascent of India as an economic powerhouse has expanded the requirement of Manager's who can administer, oversee and escalate the rising business of India. The increase in demand of Management Education is followed by threats and opportunities associated with it. At present, one of the greatest challenge faced by B-schools is that of developing an indigenous prototype of the curriculum. The prime factor for this being the paradigm swing in management setup that is more slanted towards the western culture of Management. Indian education system needs to clear a path and be organized for this change. The mushrooming of Management institutes in the past decade across the nation also point towards an alarming situation. The pedagogy in most of the B school is such that more emphasis is on theoretical concept. The lack of application based knowledge both among faculties and students act as a prime obstacle to advances. While thoughts can be imparted, the assimilation of soft skills in the behaviour of the student is needed. This assimilation of soft skill counts as the major difference if we compare Indian students to that of their western counterparts. It is the responsibility of Management institutes to ensure that their faculties are qualified, trained and experienced enough to impart their knowledge.

While India is caught up with conquering these difficulties and approaching slowly and carefully, there appear to be various prospects that points towards the shining future of Management education. With advent of time, Management education has emerged as one of the most lucrative career options prevailing among the youth who were put off by the disgraces inborn in government organization for poor real income. This paper explores the numerous issues, and concerns faced by Management education and also analyses the future course of action for the next decade.

Keywords

Management education, India, issues, challenges, pedagogy

Introduction

Management education has gained huge primacy over the past two decades. A concrete management education system may act as a breeding ground for economic success of the nation. The present state of management education is very different than it was yesterday and the future path resembles a cloud with a silver coating. Globalization, Liberalisation, privatisation, technology, socioeconomics and environmental factors are few of the factors that are moulding the future gateway of Management education as a whole.

In order to reach the vision of developed India, it is mandatory to fill the identified gaps in the education sector. In the process of mending those gaps management education can act as a moderator. India being a developing nation the prime focus is always on removing poverty and illiteracy from the system. This can be achieved by shaping the sphere of Management education in such a way that this component in itself will act naturally propagating and enable India to accomplish its supreme goal. Few facts about management education in India are as following. Consistently there are more than 2 lakh CAT candidates and the success ratio to top 50 B schools ranges somewhere near to 25,000 seats. On an average

India possess 1500 Business school with a capacity of 1, 25,000 MBA seats, it is the class of management graduates that makes the variance to the economy.

Management Education in India is also in its developing state, very similar to that of Indian economy. Though it has covered a long way, there is still a lot to achieve. The synchronization of Indian culture with that of Western influence in the field of Management needs to be inspected. This paper tries to take a long glance in the opportunities lying ahead, so as to ensure that Management education is more culture oriented and indigenous to produce business front runners of future.

The competition to get into renowned B-school is tough and is exponentially increasing each year. Today B-schools dispense one alumni for each 400 aspirants, and with the quantity of courses expanding, there is by all accounts no ending in the assortment in courses also. Similar to that of the trend in USA, In India also the 2 year MBA/PGDM program was trailed by the one year executive MBA. In present times the trend is gradually shifting towards part time MBA's backed by technology enabled distance learning courses.

For India to be a developed nation, it is of supreme importance to nourish a pulsating economy driven by knowledge in the coming years. Additionally it is also important to nourish a society where equity justice and human values succeeds. Challenges in higher education sector are not only nation centric, rather they have conquered global dimensions. Therefore it is the need of the hour to reposition Indian higher education system to be more dynamic, aggressive, significant and deliberate. Since there is no alternate to quality, in spite of the fact that India is facing an acute problem in encountering the quantity needs of the economy. Hence it is important to have a balance between both quality and quantity needs of the society in the near future.

Purpose

The purpose of this paper is to examine the present status of Management Education in India. This paper attempts to discuss the issues and concerns that are acting as a hindrance for management students so as to shine and grow in modern business environment. The paper is drawn from analysis of existing literature and secondary data accessible on the internet substantiated by primary data collection comprising opinion of various stakeholders related to the field of Management institutes.

Scope

All the post graduate and PhD courses taught in Management schools/departments in an Indian institute are covered under the purview of this paper. The programmes may be executive education, full-time, part time, distance learning or specialized in nature. The prime discipline of interest of this paper is post graduate programmes in the field of management offered by Indian institutes. These courses come with a variety of names -Master of Business Administration (MBA), Master in Finance Control (MFC), PG Diploma in Management (PGDIM),), PG Diploma in Human Resource Management (PGDHRM, PG Diploma in Financial Management (PGDFM), Master of Management Studies (MMS), Master of Public Administration (MPAPG), PG Diploma in Operations Management (PGDOM), PG.Diploma in Marketing Management (PGDMM) etc.

Significance of management education in India

Importance of Management education is such that it aims for holistic development of society by providing monetary benefits to students, provides significant talents to the organisation, and leads to economic development of country as a whole (Association to Advance Collegiate Schools of Business (AACSB), 2005).

World Economic Forum ranks countries on the basis of Global Competitiveness. Significance of management education in development of an economy, can also be understood by the fact that the quality of management institute is one among the many criteria to evaluate the competitiveness of the economies (Global Competitiveness Report 2018). Societal and fiscal development of any developing country is also effected by the status of Management Education in the country (Napier et al., 2008). In order to generate prosperity in developing economies, Global Business Schools Network (GBSN) under the umbrella of International Finance Corporation (IFC) encourages develop managerial talent through management institutes (GBSN, 2012). As developing economies like India, China serves as engines of the world economy. In India more job opportunities are reported when compared to United States (QS Top MBA Jobs and Salary Trends Report, 2013). There are more than 3500 business school in India to prepare students to compete with the world economy (All India Council for Technical Education (AICTE), 2013).

Table1: Number of students pursuing Management education in India

	Intake	Enrolment	Students Passed	Placement
2012-2013	443,282	237,000	179,556	95,191
2013-2014	450,866	234,367	185,925	103,178
2014-2015	455,097	248,300	186,305	104,431
2015-2016	431,578	249,894	186,530	101,776
2016-2017	411,826	234,321	179,704	106,022

Source: www.facilities.aicte-india.org

Table2: Global ranking of leading Indian business schools

Rank in 2018	3 year Rank	School Name	Weighted Salary (\$)	Salary Increase (%)
28	28	Indian School of Business, Hyderabad	148,974	164
31	28	Indian Institute of Management Ahmedabad	175,801	101
35	49	Indian Institute of Management Bangalore	166,651	114
78	-	Indian Institute of Management Calcutta	139,244	117

Source: financial times london's global mba ranking 2018

Issues and concerns

In current times, management education has become one of the most sought after field of higher education in India. Reason being the increase in business exposure post liberalisation, privatisation, and globalisation of the economy in 1991. Along with growth of world class management institutes in the country, the quality of graduates remains a serious concern. The Nanda Committee, The Kurien committee, the Ishwar Dayal committee, the Management Review committee have suggested various improvement on Management education. However, other than top business schools, no noteworthy amendments is observed in majority of Business schools. In order to improve the status of Management education in India, it is crucial to investigate the major issues that needs immediate concern.

Need to create independent institutional mechanism

Present regulatory scenario is very complex. Too many agencies like National Board of Accreditation (NBA), University Grants Commission (UGC), All India Council for Technical Education (AICTE), affiliating

universities, state or central government bodies' deals with management education. However there is there is an absence of coordination among them (Jagadeesh, 2000). Management education should be solely under the umbrella of AICTE & its subsidiary A National Task Force (NTF) on Management education ought to be delegated. All India Management Association (AIMA) has expressed its view on formation of a separate parent body for Management education. One similar but independent to AICTE.

Need of accreditation & rating

Accreditation endorses "the prescribed procedures in training through a benchmarking procedure" (Sahay and Thakur, 2007). It mirrors the nature of an instructive foundation or a program. The process for implementation of accreditation in India is one of the emerging concern. In India, accreditation of business schools is done by the NBA yet it has not satisfied the expectancy of the stakeholders. (Business Standard, 2016).

The accreditation must to be independent, fair, transparent and independent. The swift development in number of the business schools require a specific body as opposed to the widely inclusive AICTE to do accreditation. A separate council must be made for accreditation of business schools; whose procedure of accreditation and acknowledgment should be made independent. National Knowledge Commission (NKC) has prescribed rating as an additional way to illuminate the scholars, the guardians and people in general about class of Management education element (MEE) as a result of multi fold expansion in number of business schools. A considerable lot of which don't even obey the base prerequisites of quality in education. By providing ranking to institutes students and recruiters can be made aware the quality of education. Consequently, the commission has prescribed that all MEE should have obligatory rating.

Need of effective leaders

The foundations require compelling torch bearers to react to the altering requirements of the society. Word leaders alludes to the managerial pioneer of an organisation. There is no shortage of elite academicians in the country, however leadership training is required. (Mishra, 2010).

Growth in the number of institutes

Until 1990, number of business schools in India was around hundred. From that point forward, the numbers have "multiplied at regular intervals, following a sort of

a geometrical movement" (Anto G., 2011). The opening of small management institutes throughout the nation has prompted a decrease in the nature of training (Business Standard, 2015).

Emphasis on curriculum

The educational syllabus of the management programs around the globe has been reprimanded for being "out of touch with the present reality" and "unimportant to the necessities of future managers" (Rubin & Dierdoff, 2009). The curriculum at an Indian business school neither gives reasonable preparing nor hones employability aptitudes of students (Dayal, 2002). It is unbending, with limited scope of teacher's involvement in reconsideration of courses (Dayal, 2002).

It is seen that the thoughts and ideas which are effective in the west, have been less viable in Indian setting. India has yet to in sync management practices with culture and tradition of the nation, through deliberate research and analysis. The current curriculum is not yet-explicit or important to Indian setting. Only a handful of business schools are focusing on research along with formulating reading materials pertinent to Indian setting.

Develop interaction with Industry

In 2013 a study was done by IFC on the eminence of the management students demonstrated that around the world, they are "not completely fulfilling the requirements of organisation" (Chaudhry, 2013). Indian business colleges have been condemned in the arena of inadequate industry collaboration, in arena of syllabus development, live project or community oriented research (Ozonol, 2010; Shweta and Kumar, 2011).

Except top notch management institutes, no components to produce familiar connection between academia and industry gatherings is present. The principle quality of best class B-schools like Kellogg, Wharton, Sloan and Howard is their solid association with industry through education, research, campus placements, critical thinking and case study pedagogy. There ought to be institutional component for creating contact with industry for every B-school, even the low positioned ones.

Need of infrastructure

Numerous business schools in India operate with negligible amenities in isolated areas (Jagadeesh, 2000). As per Times of India (2016) report, absence of required infrastructure was referred to as the main reason behind poor enrolment in the business schools.

Ensuring quality faculty

The greatest hindrance faced by the business schools in India is the scarcity of qualified and proficient teachers (Kumar, 2011). This was also featured in an All India Council for Technical Education (2006).

Establishment of large number of B-Schools lead to scarcity of qualified teachers. At present many teachers are without Ph.D. and research context. At the University level UGC expects either Ph.D. or on the other hand NET/SET as a fundamental capability in the determination procedure at school or University level. Be that as it may, because of scarcity of staff in the board just a master degree is sufficient to end up an employee in the B-schools. In interviews, industry experience is given weightage however because of shortage of personnel, the industry experience is additionally not being judged appropriately in number of cases. Also AICTE has no mechanism to create and prepare the faculties to teach management courses with practical approach. It is additionally seen that a portion of the institutes either appoint part time teachers or choose them on contractual basis where they have a little association both with the organization as well as with the students. Inexperienced faculties often embrace just lecture method and give hypothetical or theoretical information to the students instead of conceptualizing or its application. New employees with no experience can't take up the research or advancement in study material and convey just the lectures for the most part drawn from the books.

Faculty development programs

So as to make great faculties for B-schools, the faculty development programs must be executed on a huge scale. Currently the faculties in the majority of business schools are set up on a preliminary and blunder basis at the expense of students who are the genuine sufferers. Recently, AICTE had instructed the business schools to depute their employees to experience Faculty Development Programs, yet it is excessively deficient. That will require another 5-10 years to get the prepared resource with this framework. Also the FDP programs which are executed at the institutional dimension they are likewise not sufficient and wealthy in their Quality. As a piece of custom and states of the AICTE this movement is being executed. This initiative must be executed at the local level all through the nation with the assistance of top notch management institutes.

Inefficient organisation structure and practices

It would be amusing if a business school was not overseen appropriately. However, numerous Indian foundations manage the difficulties of ineffective structures and practices like bureaucratic issues, clumsy staff, poor administration, absence of self-sufficiency for the workforce, etc (Noronha, 2011).

Promote research culture

As indicated by the Indian Institutes of Management Report of IIMs Review Committee Report (2008), the quality and amount of research papers even from the IIMs, the most looked for after organizations of the executives in the nation, "has not been equivalent with the status of IIMs". Comparative concerns have been communicated by different creators (Dayal, 2002; Ozonol, 2010; Anto, 2011).

Business schools don't have culture that is compassionate of research. Good library is a must in order to inculcate research culture. Researchers ought to be welcome to explore in specific territories of national significance. As to inquire about concede strategy there is a need to help more to singular venture recommendations. Urge institutions having adequate resources to start Ph.D. program. Management being a recent discipline there is a deficiency of Ph.D. guides and subsequently the individuals who might want to pursue for research degree are compelled to enrol for their Ph.D. degree under the faculties of commerce. At times these Research supervisors can't direct the students in the field of management.

Pedagogy

The teaching method in business colleges has been slammed for inflexible approach and an absence of advancement for creating practical abilities (Mintzberg, 2004). As indicated by Khurana (2016), instructional techniques for the new century should be created and reclassified on an increasingly all-encompassing premise to deliver managers and entrepreneurs

The executives has been a much looked for after field for understudies, however the purposes behind this are the elitism related with the calling and the extension for gaining high pay bundles (Rao, 2009).

Corporate governance of B-schools

As demonstrated by S.L. Rao, a noteworthy shortcoming is the absence of a Corporate Governance framework in B-schools. This issue needs cautious Consideration. There is a need to have autonomous Directors independent Audit Committee for dealing with the B-schools. Corporate governance must be made a component of accreditations. FDPs and faculties involvement in administration should

be a piece of the Corporate Governance plan. Issues like Qualifications of employees, Size of libraries, and other scholarly and additionally infrastructural offices should likewise turn into a piece of administration.

Need to broaden the specialization

There are a few businesses which are Context explicit to India, e.g., rural administrations, agricultural services, hospital management, hospitality and tourism, NGO are quickly developing territories in business. These organizations require customized syllabus. Educational module customization, Specific material improvement and staff specialization are a portion of the least concerned elements that prompted low quality of management education in India. Most likely a portion of the B-schools have presented MBA, program, concentrated on telecom, tourism, hospitality, healthcare, and infrastructure management board yet at the same time it requires more endeavours on customization so as to widen the Specialization.

Discussion

Beside the top 50 business schools including the Indian Institutes of Management (IIMs), just 10% of alumni from business colleges figure out how to get employed by corporate India. Over the most recent fifteen years, the quantity of MBA situates every year in India has tripled from 4,500 to 3.6 lakh, as per an ASSOCHAM study, however campus placements have gone somewhere down by 40% in the similar period. Indian business schools ought to internationalize their way to prepare students to compete with the global market. In the meantime, Indian business colleges should take care to guarantee that their courses had enough indigenous content so students could identify with them effortlessly. Change in syllabus and teaching methodology must change with time. Specialists view that old educational modules and showing strategies in B-schools has not ready to keep pace with liquid and dynamic condition. Empowering a progression of private quality organizations and foundations with public private association will totally deregulate management education. This will open more extensive alternatives for students to enlist them in good B-school.

Conclusion

Management Education in India has achieved huge importance in past three decades. An exponential rise in number of management institute is being witnessed in the above mentioned time frame, however few issues represent a genuine risk to its survival. It is important to take a long haul viewpoint for dealing with key issues keeping in mind the present status of the management education in India. The activity plan would need to

incorporate both the institutional advancement at the micro scale level and faculty development, adaptability in program structure, research, innovation friendly environment, and change in pedagogy at the macro level. (Dayal, 2002). Many management institutes don't concentrate on the nature of scholastic program. Employees are required to get associated with research or counselling so as to create quality teaching material. The supervising framework must be reinforced regarding accreditation of the programs which will empower giving careful consideration to the administration rehearses and the administration framework. The foundations concerned and the large scale level checking framework, for example, the Government/AICTE/UGC would need to intentionally embrace the undertaking of overhauling the nature of training, and make the projects pertinent for associations. India is where youthful researchers, technocrats, and business officials show most elevated amount of brilliance and duty in various expert fields and direction most elevated amount of regard among friends and managers, all around the globe. Government, officials, legislators, mechanical houses, social pioneers have enormous obligation to engage these adolescent for self-manageability. It is a troublesome errand, yet not an outlandish one and could be accomplished by updating the administration training in India (Sarkar, 2007). Genuine analysis of the problem, unbiased policy framework, rapid efforts and incorporated exertion can lead to increase in effectiveness of Management Education in India.

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The Semantic Expression Characteristics of Sign Language and Intelligent Recognition Method

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Abstract

Natural language based on phonetics is the fundamental way of human's communication. There are more than 70 million aphasics worldwide. Fortunately, sign language compensates for their defects to some extent. Nonetheless, sign languages often fail to convey ideas as clearly as phonetic expressions do. Besides, there is a lack of universally acknowledged semantic expressions of sign language. The progress in neuroscience and advanced video analysis technology sheds some lights on the above issues. This paper intends to help understanding this central issue in three ways. Firstly, the expressive characteristics and communication way of sign language are analyzed, as well as their neural reactions and video signal features. On this basis, a novel recognition method is introduced. Specifically, the fusion analysis of semantic meaning and emotional information calibrated by neural activities are studied. Finally, this paper proposes a scheme of the recognition method, and provides intelligent means to improve the recognition accuracy availably and effectively.

Keywords

Artificial intelligence, sign language, semantic expression, intelligent recognition

Introduction

At present, there live more than 30 million children with physiological language barrier in China. Besides, at May 30, 2018, The BBC news, headlined "The sign language lawyer who became a social star", reported a moving story of Tang Shuai the only lawyer using sign language in China. Indeed, the education, life and dilemma of deaf community have widely aroused increasing attention in society, and it's believed that to overcoming the limitations of sign language is of great significance to improve the living quality of the deaf and dumb.

Sign Language, composed of gestures, expressions and head postures, is a communication tool serving for all the deaf people. Directly related to their thinking, sign language is a stable expression system which has its basic words and some special grammatical rules.

Although, some articles have pointed out that sign language possesses the basic characteristics of language in essence, however, to a certain extent, it still falls

short of language. Sign language is a developing quasi-language, the researches on its phonetics, phonology and morphology are in preliminary scale, while the researches on the semantics and syntax of sign language are not systematic, and researchers pay little attention to sign language pragmatics.

At the same time, compared with the three elements of mainstream language, there are also three corresponding elements of sign language: form, vocabulary and grammar, which have formed their own unique expressive characteristics, such as the integration of verb-object, facial expression as rhetoric, etc. In addition, the phonological features of sign language are divided into five parts: position, hand shape, direction, movement and features unrelated to hands, after the introduction of which Chinese sign language can theoretically form an infinite number of phonological features, increasing the difficulty in the recognition and smooth communication of the deaf using sign language.

Thus, in order to better recognize sign language and assist deaf people to communicate normally, there exist many on-going researches on sign language recognition and understanding. For example, 3D motion-sensing devices, whose cameras are used to obtain the depth and infrared image information of the target, have emerged recently creating possibilities for gesture perception. Researches and efforts are also made to simulate the process of human brain in processing gesture signals, and scientists have designed mixed deep neural network model to solve the problem of sign language understanding based on phonological model, that is, the problem of the conversion of phonological information to text in sign language.

With the continuous development and progress of computer science, intelligent recognition means have been adopted to improve some aspects of human life or have become an important step to build a natural and friendly human-computer interaction mode. The progress of EEG intelligent recognition technology has also provided new motives for solving the problem of sign language understanding deviation.

This paper intends to advance research on sign language for the fields of Neuromanagement, Neurolinguistics and human-computer interaction with a focus on intelligent recognition. We intend to achieve a following contribution: first, it clarifies the expression and understanding of sign language and the semantic method of building library. Second, it explores semantic intelligent identification methods based on neural signal analysis techniques, such as EEG, ERPs, etc. Third, it provides a new communication method based on neural science and technology.

The expression and communication of sign language

Expressive Features of Sign Language

Definition of Sign Language

Sign language plays an important role in the knowledge acquisition, cognitive and social development of the deaf. Unlike braille and semaphore, which are substitutes for spoken language, sign language comes naturally and expresses information according to its own grammatical rules[1].

According to Mei Fusheng, a deaf teacher, "sign language is the communicative language of deaf-mutes, who not only live on it, but also think on it. Sign Language has its own grammar and functions to express thoughts "[2].

Linguistic features of pantomime

Compared with the spoken language system[3], the sign language system also has three similar main components including form, gesture vocabulary and grammar rules. The difference is that the language system of sign language relies on vision rather than the vocal channel as normal communication method.

Phonological features of sign language

In a general way, the phonological features of sign language can be summarized as following aspects[4].

- (1) Hand shape, the basic fingering and configuration of the hand.
- (2) Location of the hand, that is, the location when the sign language was played.
- (3) Orientation of hands, orientation of palm or arm.
- (4) Motion, that is, the combination of gestures, speed, strength, etc.
- (5) In addition, some people use facial expressions and gestures as a dimension of sign language.

Several expressive features of sign language

It is worth mentioning that sign language has several expressive features distinguishing itself from general language as follows.

- (1) Facial expressions and other non-gesture expressions serve as grammatical functions, such as questions, modifications and exclamations.

- (2) The integration of verbs and objects

In sign language, many verbs and objects are completed by one gesture, such as "play basketball", "play abacus", "send a letter", etc. "eat" (verb) and "meal" (object) cannot be separated.

- (3) Classifier

In American Sign Language (ASL), the "person" (hand gesture with the letter G pointing up) is a classifier. The change of its movement direction can be used to express "people come", or "people go"; "Human's leg" is also a classifier, represented by the letter "V" in the shape of the hand, usually with the fingertips facing down for "standing", "walking" and so on. It can be said that the use of classifier makes the content of sign language more vivid in description and expression.

- (4) Chronology order of sign language

The chronology order of sign language is the

sequence of the components of the sign language system, namely the sequence of the appearance of gestures, which is obviously different from that of spoken language. For example, the sentence "I like fish" is expressed as "fish-i-like" in American sign language. In Chinese sign language, negative words are postposition. For instance, "don't pick flowers" corresponds to "flowers - pick - no" in sign language.

- (5) The consistency of the verb with the subject and the object

In addition to the chronology order, sign language also has certain spatial characteristics. The logical grammar function between the subject and the object can be specified by the direction in which action moves. For example, when expressing "The cat catches the mouse", the "catch" gesture is changed from the "cat" gesture and then to the "mouse" gesture. If we change the direction, the meaning is reverse. Thus, sign language retains the characteristics of space and time.

- (6) Reduplication

Reduplication in sign language is often used to generate variation of extent. For example, repeating the gestures of "criticism" means "severe criticism".

The mode of communication of sign language - visual cognition

Basically, deaf people communicate with sign language mainly by recognizing the phonological features of human eye sign language[5]-[7].

As reported, the recent emergence of 3D motion-sensing devices, which use 3D motion-sensing cameras to obtain the depth and infrared image information of a target, substantially enhances the performance of gesture perception[8]. Based on the cognitive principles of the human eye, it transforms traditional 2D objects into 3D space, where five phonological features in sign language can be calculated by this 3D motion sensing device. Compared with speech recognition, these physical features can be directly perceived by visual perception.

Among the features, hand shape acts as the indispensable core element of hand vocabularies while facial expressions and body posture play a grammatical or rhetorical role. Happy and angry expressions indicate different means of expression (positive, negative, interrogative, rhetorical and exclamatory sentences). When the body detecting equipment calculates the phonological features,

calculations can be conducted from hand position, direction, and other gesture features, to the eyebrows, eyes, mouth, head and other none-gesture features. It is indeed a process starting from coarse-grained phonological features to fine-grained ones, in line with the image processing and cognitive mechanism of human brain.

Since none-gesture features include facial expressions and body movements, while facial expressions are comprised of eyebrows, mouth, cheeks and other expressions. After the introduction of none-gesture features, Chinese sign language can theoretically form an infinite number of phonological features, which leads to an unresolved problem of the huge computational cost in intelligent recognition, remaining to be solved in the following scientific research.

Intelligent recognition method of sign language information

The intelligent recognition of sign language is divided into sign language recognition and sign language imaginary recognition, in which the sign language recognition is divided into semantic recognition and emotional recognition. The following is a brief introduction of several common intelligent recognition methods.

Sign language recognition

Semantic recognition

Semantic recognition of sign language uses a computer to automatically understand the information conveyed by the sign language performer, which is called the method of continuous sign language recognition. Two common methods rely on the motion-sensing technology based on accelerometer (ACC) and surface electromyography (SEMG) sensor respectively[9]. Accelerometers are used for detection of large movements, such as the posture of the hand, arm, or the position of hand, while surface electromyography is usually used for the rich and subtle recognition of fingers and wrists. Related preliminary studies have shown that the combination of the advantages of the two methods can improve the types and accuracy of sign language recognition. Therefore, we plan to adopt gesture recognition technology based on SEMG and acceleration information fusion to collect and identify sign language semantics. To improve the efficiency of data processing and reduce the incidence of recognition errors, take "root" as the basic recognition unit.

The following is a brief introduction to the identification method of continuous sign language.

(1) Data collection and preprocessing

Due to the interference of high-frequency Gaussian noise signals in the original SEMG and ACC signals initially collected, the band-pass filter and low-pass filter should be used for filtering and A/D conversion respectively to obtain the undisturbed and discrete signals.

(2) Root data segmentation

When the sign language performer continuously performs an example sentence, the collected information is divided into root words. Compared with motion interval signals, the SEMG energy of other action signals is very significant, and the starting point can be determined by appropriate prefabricated detection method. This work can accurately show the characteristics of sign language movements, which is conducive to the facilitate feature extraction and recognition.

(3) Feature extraction of root data segment

After extracting the significant root motion signal, a group of the most effective features are used to describe the root motion signals, which is convenient for the classification and judgment of the decision tree.

(4) Root recognition with multi-level decision tree

A decision tree (multi-level decision system) with topological structure is constructed by static and dynamic sign language gesture classification, hand gesture classification, motion duration classification, multi-flow HMM final classification (this step can establish error correction candidate set).

(5) Continuous statement recognition and error correction based on statistical language model.

The N-gram statistical model is used to judge the rationality of the recognition results given by the multi-level decision tree.

Emotion recognition

Emotions are manifested as internal experience and external behavior, and the production of a certain emotion is accompanied by complex neurological processes and physiological changes. In this paper, the external behavior of emotion is called visual information, and the internal neural process and physiological changes are called physiological signals. The following is a brief introduction to the two information collection and identification methods.

A. Visual Information

Visual information mainly refers to facial expressions.

Since specific emotional states usually correspond to specific facial muscle activity patterns, image recognition techniques are currently used to achieve[10] [11]. But with the ability to manage facial muscles, people can easily disguise their facial expressions to hide their true emotions. In addition, some people have facial diseases, so it is difficult to realize emotion recognition based solely on visual information.

B. Physiological Signals

The collection of physiological signals mainly relies on the emotion recognition technology based on Electroencephalogram (EEG)[12]. EEG means in chronological order, the potential of the brain neurons idiopathic, rhythmic movement generated at the recording surface of the scalp, brain cells are generally reflected electrical activity in the cerebral cortex or the surface of the scalp. Therefore, a lot of people's psychological and emotional fluctuations can be reflected by the measurement of EEG.

The main steps of EEG signal recognition are briefly described below.

(1) EEG signal acquisition and preprocessing

EEG signals are collected by placing electrodes on the scalp. However, due to the weakness of EEG, it will be interfered by other noise signals in the acquisition process. So we need to amplify the obtained EEG signal through the amplifier first, and then remove the irrelevant artifacts such as the doped electroencephalogram, ECG, EMG, power-frequency interference and electromagnetic interference.

(2) Feature extraction

After preprocessing, EEG signals are transformed, we can find the representative features related to tasks, which are usually divided into three categories: time-domain features, frequency-domain features and time-frequency features.

Time-domain features often refer to the information of EEG signals in the time-domain after the artifact is removed or the signal statistics in the time-domain are taken as features, which is the most intuitive types of features. And event-related potential analysis is a typical application of time-domain characteristics. It refers to the potential changes generated in brain regions during the process of giving and withdrawing or when certain psychological effects are produced by an additional stimulus acting on a system or a certain part of the brain.

Event-related potential analysis can be used to analyze the evoked potentials of different emotions.

Because the delta frequency band, theta frequency band, alpha frequency band, beta frequency band and gamma frequency band of EEG are closely related to various psychological and physiological activities, the original EEG signals can be converted from time-domain to frequency-domain to extract EEG characteristics. The power spectrum density and energy characteristics in frequency domain are usually obtained by power spectrum method.

Combining time-domain and frequency-domain features can often better eliminate the influence of EEG instability on feature extraction results, which is called time-frequency features. Short Fourier transform and wavelet transform are commonly used to extract time-frequency features.

(3) Feature smoothing and feature dimensionality reduction

The change of emotional state reflected in EEG is usually a gradual process, but there are some drastic changes in EEG. Thus the EEG characteristics need to be smoothed to reduce interference, usually by the sliding average or linear dynamic system.

Because the extracted EEG features usually correspond to each electrode, the EEG features have a higher dimension, so more signals need to be collected. In order to improve the efficiency of emotion recognition, feature dimension is adopted to select some features highly related to emotion. Feature reduction includes two categories: feature selection, and linear or nonlinear transformation of original features.

(4) Analysis and classification of emotional patterns

In order to determine the emotional state through the extracted EEG features, it is necessary to analyze and classify them. There are two ways to do this: unsupervised learning and supervised learning.

Unsupervised learning of emotional state is to use a large number of samples without specified categories for homogeneous clustering and heterogeneous separation through their own characteristics. Common methods include fuzzy clustering, K-means and self-organizing mapping.

The supervised learning of emotional state requires classifying and labeling the samples, modifying model parameters, and then applying the obtained training model

to the classification of test samples. Common methods include support vector machines, neural network, decision trees, Bayesian network, K-nearest neighbors and hidden Markov model.

(5) Research on emotion-related brain regions and frequency bands.

Through the obtained analysis results, the representative features, optimization models, and classification accuracy are selected to provide a basis for the application of emotion recognition. The specific method does not elaborate too much.

Imaginary recognition of sign language

When people imagine physical activities, the motor cortex of the brain also shows changes in EEG, which has certain rules. EEG can be used to change both bands at 8-12 Hz (mu-rhythm) and 13-28 Hz (beta-rhythm). The commonly used method is motion image EEG recognition based on HHT and SVM[13]. Since this topic mainly focuses on the semantic and emotional recognition of sign language, the specific methods of imaginary recognition of sign language are not explained here.

Intelligent recognition methods of sign language

Intelligent recognition scheme

As mentioned before, the intelligent recognition of sign language involves the direct recognition and the imaginary recognition, and this paper focuses on the direct one. If we expect the accuracy of the direct recognition is as high as possible, it should be comprehensively considered on the basis of textual meaning and inner emotion meaning. Here is our scheme of the recognition method which is based on the fusion analysis of semantic meaning and emotional information calibrated by neural activities (figure 1).

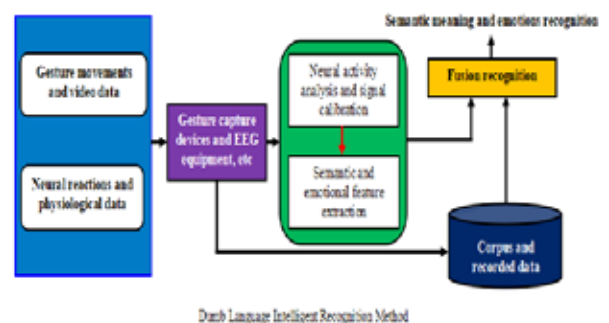


Figure 1 - Sign Language Intelligent Recognition Method

Semantic recognition is proposed based on two kinds of effective and lightweight gesture capture device: ACC and SEMG. We are going to obtain basic information from gesture movements and video data. On the basis of that, to recognize the root of sign language, multistage decision tree is usually applied as an analytical tool. Moreover, statistical language model will be brought in to judge root continuation and correct possible errors[9].

Compared to semantic recognition, emotions recognition is more complicated. The most common methods are recognition based on non-physiological signals and recognition based on physiological signals[12].

Non-physiological signals mainly refer to facial expressions. Psychologist Mehrabian proposed that the amount of information transmitted through facial expressions reached 55% in people's communication[14]. In our research, signals calibration comes to the first, after that, feature extraction should be done, we intend to divide this system into three modules: Processing, original feature extraction and feature dimension. Among them, the original feature extraction methods include Gabor, LBP and HSLGBP, and the feature dimension methods include PCA, LDA and PCA+LDA^[15].

Physiological signal recognition mainly includes emotion recognition based on autonomic nervous system and emotion recognition based on central nervous system[12].

The former refers to the identification of the corresponding emotional state by measuring physiological signals such as heart rate, skin impedance and respiration. Picard of the Massachusetts Institute of Technology identified and measured the autonomic nervous system of the human body, eight different emotions such as calm, anger, disgust, sadness, pleasure, romance, happiness and fear are recognized[16]. Although these physiological signals cannot be disguised and we can obtain real data, they are not suitable for practical applications because of their low accuracy and lack of reasonable evaluation criteria. Therefore, this article does not consider these signals.

The latter refers to the instructions issued by the brain under different emotional states. The common recognition methods mainly include functional nuclear magnetic resonance (fMRI) and electroencephalography (EEG). In view of the huge volume and expensive cost

of fMRI equipment, we intend to use EEG equipment to help us obtain neural-reaction data and analysis neural activities[12].

As for the imaginary recognition of sign language, the existing research materials are very few. Therefore, we intend to simulate the intelligent recognition based on the HHT and SVM[13].

The ultimate goal of this paper is to help the deaf people who have special needs to further improve the richness, complexity and precision of the semantic expression of sign language through intelligent means. In order to achieve the intended research purpose, after carefully analyzing the research object, we hope to collect plenty of real materials and use the data from above various intelligent recognition methods to fully analyze it and construct a corpus.

Corpus Construction

We decide to build a corpus in three steps: corpus collection, corpus arrangement and corpus program construction, so that we can more easily identify the rich meanings of the commonly used continuous sign language in daily life under different emotional conditions through intelligent recognition signals.

Corpus Collection

To begin with, the content of the corpus is intended to be selected from three aspects: words, sentences and paragraphs.

The word part will be composed of 207 Swadesh core words. The Swadesh list lists the basic vocabulary of various languages, which was proposed by the American linguist Maurice Swadesh in the 1940s and 1950s. The most complete version contains more than 200 vocabularies, which will be used in this paper (part of the list is listed in table 1). It is one of the most commonly used tools for judging the affiliation of language, and it also plays a supporting role in linguistic vocabulary learning. Swadesh believes that all the vocabularies of one language should contain these 207 words. Furthermore, as long as you know these 207 words of one language, you can carry out basic communication in this language[17]

Table 1 - part of Swadesh list[17]

No.	1	2	3	4	5	6	7	8	9	...
Chinese	我	你	他	我们	你们	他们	这	那	这里	...
English	I	you <i>sing.</i> , thou	he	we	you <i>pl.</i>	they	this	that	there	...
...	...									

The sentence part is intended to select 20 representative sentences from the HSK (Level 3). The HSK is compiled by the Chinese Confucius Institute Headquarters and it represents the Chinese language test standard. Without doubt, sentences can help us understand the pronouns, adverbs, directives, prepositions, interjections and word order[18].

The paragraph expression part is divided into 8 contents. It is proposed to select eight paragraphs according to the below emotional conditions: calm, anger, disgust, sadness, pleasure, romance, happiness and fear. As a matter of fact, through paragraph expressions, we can figure out how the deaf people grasp the correspondence between Chinese and sign language.

Next, the corpus collection can be done in two ways. One is to invite the deaf and sign language learners as volunteers and collect data from them. The other is to study a large number of reliable sign language video materials with relevant content.

So as to avoid deviations caused by single local characteristics and gender characteristics in the first approach, volunteers from different provinces, cities and genders will be invited. The collection process can be divided into the following steps:

- (1) Pre-preparation.
- (2) Communicating fully with volunteers, adjusting their emotions to the natural state to obtain higher quality corpus.
- (3) Photography and intelligent recognition.
- (4) During post processing, Chinese dubbing and recording should be done for the recorded sign language.
- (5) Performing a second inspection to prevent omissions and errors.

The second way is to pick the proper video materials and make an intelligent recognition record of facial expressions and semantics.

Corpus arrangement

After accomplishing the corpus collection, as for the video materials obtained from the volunteers, we propose to use the video processing software to cut the video with the starting and ending of a sign language action based on the 207 words of Swadesh. Meanwhile, together with the selected network video materials, they will be divided into three independent folders according to the three corpus contents (words, sentences and paragraph expressions), and the paragraph expression folder will be organized into

8 independent folders according to different emotional conditions. Most importantly, the naming format should be simple, clear and easy to retrieve. For example, the naming format of the words collected by the volunteers will be all specified as "province + gender + Swadesh core word order + the word", for example, the video of *I* word which is performed by a Sichuan female volunteer can be named "Sichuan + Female + 1 + I".

Corpus program construction

This paper intends to draw on three development methods which are commonly used in general corpus construction: prototype method, building block method, and stepwise solving method. Due to the limited human and economic resources, a small corpus will be built first. Under the overall design and planning, new corpus will be continuously added, in this way still, it will be gradually modified and improved. The programming purpose is to search and open the specified file in the finished corpus file. For the simplicity of the program, we plan to use Python for programming. Python is a programming language that is easy to learn and it supports Chinese in code.

Fusion recognition

In order to perfect the semantic expression of the sign language, the intelligent identification scheme uses four intelligent recognition methods. Among them, semantic recognition is based on the fusion of ACC and SEMG sensor technology. Some researches show that it performs much better than using one of the sensors alone[19], equally important, the statistical model helps to increase the error monitoring and correction. Then, facial expression recognition is based on the feature reduction method of PCA and LDA combining with HMM to identify, this approach is expected to improve the accuracy of facial recognition and reduce subjective awareness error. Besides, the EEG technology is used in the recognition of physiological signals based on the central nervous system, but the current EEG technology is difficult to completely eliminate the environmental influence factors and individual differences. As a result, there may be some chance to find a joint effect by using EEG and other recognition methods together. Last but not least, sign language imaginary recognition is based on the acquisition of neural signals by EEG technology, and then HHT and SVM will be used to recognize it. Existing researches have initially shown that this recognition method has certain versatility and adaptability[18]. There is also a paper which confirmed that HHT has a good

feature extraction capability of EEG[20]. In any case, at present, it is not realistic to use a single intelligent recognition data set to analyze complex human languages such as sign language. Therefore, the fusion recognition method can greatly deepen the understanding of sign language. All in all, in this way, we may get better research results and a more humane corpus rather than a mechanized one, which will help the deaf to communicate with others more freely and promote the human-computer interaction.

Summarization and discussion

This paper mainly studies and summarizes the semantic expression characteristics of sign language and related neural signal intelligent recognition methods. Different from the existing research on the topic, we introduce a fusion analysis of semantic meaning and emotional information calibrated by neural activities which is to enrich the sign language expression from the objective level. In addition, we will also explore sign language imaginary intelligent recognition which is intended to be studied on the basis of the existing simple motion recognition. We want to help the deaf people who have special needs communicate more smoothly and accurately. And it would be satisfying if a more natural and friendly human-computer interaction environment is built. This paper already has a relatively complete conception, we propose a scheme of the recognition method, and provide intelligent means to improve the recognition accuracy availably and effectively. However, EEG signals have certain individual differences in the process of signal representation and sign language imaginary recognition has unknown issues. There are still a series of problems that affect the smooth implementation of the preset scheme. To obtain more substantial, convenient and long-term research results, we will collect a large amount of real materials, construct them systematically into the corpus and keep working on this almost virgin territory.

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Study on Chinese "Feng Shui" Characteristics of Commercial Community Based on Big Data Analytics

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Abstract

The term "Feng Shui" comes from the experience summarization and philosophical thinking of the ecological relationship between human and natural environment in ancient China. It has become a study of ancient people's investigation, evaluation of natural environment and choice of place of residence. This paper introduces this concept into the analysis of commercial communities, which means the environmental characteristics affect its business development. Today, the big data contains a large number of customer's subjective perception and commentary on the commercial community, providing a new idea for studying the "Feng Shui" of commercial communities. This paper first introduces the origin and development of the Chinese Feng Shui theory, and then takes the Lujiazui commercial community in Shanghai, China as an example, to study its commercial Feng Shui characteristics based on the online review of big data. The general ecological community theory is used to explain the ecological mechanism of the "Feng Shui" characteristics, which provides a new theoretical perspective and suggestions for the planning and business development of the commercial community.

Keywords

Commercial community, feng shui, big data, generalized ecological community, ecological mechanism

Introduction

The "Feng Shui" doctrine is the theory of the location of the ancient Chinese people after observing the heavens and examining the geography. It is used to circumvent the natural disasters as much as possible and to make people live and work in peace. The emphasis is on "harmony between man and nature" and "homeopathic"[1]. The early "Feng Shui" began with climate, mountain, hydrology, vegetation, geology, the sun, the moon and the stars. After a long period of experience accumulation, ancient Chinese people came up with more general guidance for site selection. Later, the "Feng Shui" theory gradually became systematic and perfect, but still retained the characteristics of the environment. With the development of the "Feng Shui" doctrine, in modern society, some of its own theories seem to be superstitious, but the core ideas contained therein are worth learning, and the people and its environment are unified and harmonious. This paper

introduces the above concepts into the analysis of the commercial community, which means the environmental characteristics that affect its business development.

The term "Feng Shui" comes from the philosophical thinking of the ecological relationship between human and natural environment in ancient China, and is more a summary of the experience of life practice. Today, with the increasing popularity of Internet, logistics networks, and mobile communication networks, the increasingly sophisticated big data environment provides a new empirical basis for research in the commercial community. For example, Zhang made an empirical study on the spatial distribution characteristics of commercial community formation in Zhengzhou, China through big data analyses, and put forward opinions on the optimization of commercial community layout[2]. Zhang and Wang not only examined the spatial distribution characteristics of the commercial community from the

perspective of macroscopic analysis of macro data, but also studied its internal relationship from a microscopic perspective[3]. Wang, Duan, and Ma conducted a study on the changes of Wujiaochang commercial community in Shanghai, China through the comparative analysis of big data, and explored the development and evolution characteristics and laws of the commercial community[4]. The above research embodies a new research method combining macroscopic analysis and micro-mechanism research. It provides an important inspiration for the study of the commercial community from the characteristics of "Feng Shui" and the ecological mechanism. The big data contains a large number of customer subjective perception and commentary information, which provides a new way to study the "Feng Shui" of the commercial community from the perspective of customer experience and its subjective evaluation of big data. The theory reveals the common characteristics and sustainable development mechanism of socio-economic community and natural bio-community. This paper will systematically study the commercial community based on the combination of the two. The research in this paper has the following theoretical and practical significance: (1) Inheriting the traditional experience of China's "Feng Shui" research, from the perspective of macroscopic big data analysis and micro-ecological mechanism research. It provides a new theoretical perspective and methodology for the study on the commercial community; (2) Taking the Shanghai Lujiazui commercial community as an example, providing strategies and suggestions for the layout planning and resource allocation of urban commercial communities.

The origin and development of "Feng shui" theory

The origin and concept of "feng shui"

the term "Feng Shui" is a combination of "wind" and "water", which means the natural ecological environment in which humans live. "Feng Shui" has become a science formed by ancient Chinese ancestors in order to choose an ideal living environment. It attaches importance to the harmonious coexistence between man and nature and becomes a cultural idea that is inconsistent with the traditional Chinese philosophy of "harmony between man and nature". It has had a profound impact on people's choice of dwellings, villages, palaces and burial grounds for thousands of years. Even in modern societies, this influence has been popular.

As a special term, Feng Shui was first seen in the book "Zangshu" in the Jin Dynasty. The word "Feng Shui" that can be found in the literature for the first time is the Song Dynasty. The main idea and ultimate goal of Feng Shui is "Heaven and Man". The main method of realization is "phase-to-earth", that is, using yin and yang, five elements and other related knowledge to judge whether a piece of land is suitable for a building. Chinese Feng Shui is classified according to the application object, and it is divided into Yangzhai Feng Shui and Yinzhai Feng Shui. Yangzhai Feng Shui specializes in the location of the site of the residence of the living people, while Yinzhai Feng Shui specializes in the location of tombs. At the same time, in the long-term development of Chinese Feng Shui, many practical methods have been formed, and a number of genres have been formed. Some genres are based on the shape of the geographical environment (For example, the whole mountain can be regarded as the shape of a dragon, judged by the trend of the mountain. The orientation, rise and fall of the dragon, determines whether it is auspicious.)

Figure 1 shows an ancient Chinese method for analyzing dragon veins with a compass. Some genres focus on determining the orientation of the interior and exterior. But no matter what kind of genre, no matter what specific method of operation, it must obey the following three principles: the principle of harmony between heaven and earth, the principle of balance between yin and yang, and the principle of mutual cooperation between the five elements.



Figure 1- The Ancient Chinese Method for Analyzing Dragon Veins with a Compass[6]

Take the Beijing T3 terminal as an example. The Beijing T3 terminal is located in Shunyi District, Beijing. It was designed by the Dutch Airport Consultancy Company and the UK Foster Architects and was completed at the end of 2007. Although the company responsible for the design of the program is a foreign institution, the

designer believes that the architectural design needs to abide by the local culture. He invited He Xiaoting, a specialist in Feng Shui, for consultation of the culture. As Figure 2 shows, the design of the terminal is strip-shaped and shaped like a recumbent dragon with the head facing south and the tail going north. The design of the roof of the building takes into account the “Bagua and Five Elements” factor in Feng Shui. Figure 3 shows the relationship between Chinese Bagua, Five Elements and Geographical Orientation. Because Beijing T3 terminal is located in the northeast of Beijing's urban area, according to the principle of the Five Elements and the relationship between the color orientation, the design is a "earth" or "fire" shape, that is, the shape is square or pointed. The exterior of the terminal building takes into account the “disintegration” principle of Feng Shui, and the design of the fountain pool and Feng Shui forest is adopted. In Figure 4, the fountain pool on the left represents the flow of water, which is the embodiment of “Qi”, a kind of energy; the Feng Shui forest dissolves the “unfavorable factors” of the main entrance in the south side[7].



Figure 2- Satellite Image of Beijing T3 Terminal Building



Figure 3-Schematic Diagram of the Relationship between

Chinese Bagua, Five Elements and Geographical Orientation



Figure 4- Beijing T3 Terminal Floor Plan

Development and application of “feng shui” theory

feng Shui is a summary of the experience of ancient ancestors' living practice. From the perspective of archaeological excavation, the choice of settlement location in the Yangshao culture period has already had a clear tendency of “environmental choice” [5]. The evidences are as follows: 1. Choose to be near the river, not only to facilitate water intake, but also to facilitate the development of agricultural production; 2. At the intersection of rivers, transportation is convenient; 3. On the terrace of the river, both fertile farming soil and avoid flood damage; 4. Facing south, for natural sunlight. It is worth noting that the choice of these ancient settlement locations is still reasonable today. For example, within a certain section of Yan'an in Qishui, Henan Province, 11 village sites in the new period were discovered in 15 modern villages. People's understanding of environmental quality has reached a high level six or seven thousand years ago.

From the Banpo site in Xi'an, various functional areas began to appear. The cemetery and the residence began to be consciously distinguished, which became the precursor to the later division of the Yinzhai and Yangzhai. In the Shang Dynasty, a large number of divination activities (“Bu Zhai”) were recorded by Oracle, leaving a wealth of information on the ancestors' "Feng Shui". However, at this time, the "Bu Zhai" is mainly judged by the lines on the oracle bones. It is a negative way of choosing the environment and has a strong superstition. In the 15th century BC, Zhou's ancestor Liu was very cautious in choosing the settlement and the city site according to the geographical situation. He went on a trek, comprehensively observed, and measured it in the field, “according to yin and yang” and “regulating its flow” and selecting “Feng Shui Bao Di”, was praised as the originator by later scholars.

China is a typical monsoon climate country. How to meet the warm and humid southeast wind in summer and avoid the cold and dry northwest wind in winter has become an important issue for the choice of the ancestors in the Yellow River Basin, and is also the main content of early Feng Shui. It is usually required to have a mountain in the north to block the wind, and the house has sunshine in the south. For the convenience of production and life, it

is best to have water flowing around the front door. Later, the "Feng Shui acupoint" also originated from this, and it is believed that the convenience of the water in the back of the mountain is an auspicious place.

In the Song Dynasty, due to the emergence of compasses, the Feng Shui of "LiQi School" characterized by "yin and yang Qi" was developed, emphasizing the mathematical theory of Qi. The theoretical methods are quite complicated, and ordinary people are not easy to master, but the basic principles remain unchanged.

Later, Feng Shui was transmitted to Korea, Japan and Southeast Asian countries. Nowadays, in many Southeast Asian countries, Feng Shui has become an important folk culture phenomenon.

As a place of wealth, commercial places' choice has gained peoples' great attention to the role of Feng Shui since ancient times. People believe that not only must they have integrity, benevolence, but they must also choose Feng Shui Bao Di. First of all, like a house, it is necessary to stand by the water, since they think that water can gather wealth; secondly, in a place where there are many pedestrians to gather Qi; at the same time, the direction of opening the door should also be noted. The houses facing south are generally open in the southeast or the South, because according to the theory of Chinese yin and yang, the southeast is very auspicious; and the door should be reasonably expanded, not too small, to expand the "port". The book "Yangzhaishiyao" also said that "the house should not be in the communications center, not in the temple, not near the kiln and bureaucrats, not in the desert, not in the army camp, not in the proper water, not living at the prison gate, not at the mouth of water." Many of these arguments have gradually found corresponding explanations and basis in the modern scientific system.

Table 1- The development of Chinese "Feng Shui" theory

Period	Dynasty	Development
From 4700 B.C. to 4000 B.C.	Xi'an Banpo Site	The cemetery and the house began to be consciously distinguished, which became the precursor to the later division of the Yinzhai and Yangzhai.
From 1600 B.C. to 1046 B.C.	Shang Dynasty	A large number of Bu Zhai activities were recorded by Oracle, and Gong Liu became the originator of Feng Shui.
From 618 A.D. to 907 A.D.	Tang Dynasty	Chinese Feng Shui thoughts began to spread to Japan, Korea and other places
From 960 A.D. to 1279 A.D.	Song Dynasty	Compass appeared. People began to emphasize the mathematical theory of Qi. The theoretical methods are more complex.
The 19 th century	Qing Dynasty	The British Protestant Ernest J.Eitel introduced the Chinese Feng Shui system to the Western world for the first time.

Analysis of "feng shui" characteristics of commercial community

Structure and composition of commercial communities

This paper takes the Lujiazui commercial community as an example. The commercial service mainly includes shopping malls, supermarkets, convenience stores, commodity stores, service specialty stores, catering enterprises, cinemas, hotels, etc. Other sports facilities services such as fitness centers are also of a commercial nature and can be incorporated into commercial services. Figure 5 shows the schematic composition of the Lujiazui commercial community. Following is the detailed explanation for each component:

- (1) Large-scale shopping malls: This part of the business is mainly engaged in various types of catering services, entertainment venues, brand stores, etc., to meet the basic needs of living, leisure and work of the surrounding people, and generally close to the subway station, where the flow of people coming in and going out is relatively large.
- (2) Supermarkets and convenience stores: This part of the business is mainly for daily necessities and food. Compared with supermarkets, the size of convenience stores, the number and types of goods, and the number of service personnel are relatively small. Many operating goods are also the most commonly used items in daily life.
- (3) Commodity and service franchise stores: Most of the commodity stores mentioned here refer to retail outlets of branded goods. Service professional stores refer to commercial outlets that specialize in certain services. This part of the business has gathered a large number of industries and brands, the most diverse varieties, and is distributed in major shopping malls and on both sides of the street.
- (4) Food and Beverage Stores: Catering businesses provide services for the daily diet, work and leisure gatherings of the surrounding people.

Sports and entertainment venues such as cinemas and gyms: recreation and physical fitness are also indispensable activities for today's community residents seeking a higher level of spiritual satisfaction. The cinemas are mainly located in large shopping malls, and the gyms are set up in the mall or on the streets.

(5) Hotels: On the one hand, the commercial community formed by relying on the major office buildings has great appeal. The presence of enterprises, commercial centers and tourist attractions will attract many outsiders to enter the community. On the other hand, there are many residents in the outer layer of the commercial community. There are also schools in the district, and there are also many relatives and friends outside the residential area. This has created a large demand of foreign guests.



Figure 5 - Schematic Diagram of the Lujiazui Commercial Community

Big data analysis of “feng shui” characteristics

Lujiazui is located on the Huangpu River in Pudong, Shanghai, China, and is the most prosperous financial center and modern commercial community in Shanghai with important international influence. In order to explore its "Feng Shui" characteristics, this paper first analyzes the big data from the perception and evaluation of tourists and consumers in the commercial community.

Public Comment (www.dianping.com) is an independent third-party consumer review website in China that provides merchants with information on consumer catering, shopping, entertainment, and lifestyle services, consumer preferences, and consumer reviews.

This article will use this as the main data source, using crawlers to find the names, classifications, addresses, comments, praises, and three ratings (depending on the business, for the food businesses: taste, environment, service. The average is taken as the total score), per capita consumption levels and other information. Among the 2927 valid merchants collected, 93% were evaluated. For the food business with the highest evaluation rate, the

average score is similar to the normal distribution. 80% of the merchants are concentrated in the 7.2-8.5 range, 7.7-8.0 is the most, accounting for 19%, as shown in Figure 6; similarly, the favorable rate (praise number / total comments number) distribution left, of which 83%-91% interval is the most, accounting for 32%, as shown in Figure 7; due to the large number of tea shops, cafes and snack bars, the per capita price of more than half of the businesses is concentrated within ¥56; Within ¥100 accounted for 76%; over ¥300 of high-end restaurants accounted for nearly 10%, mostly located in the Riverview Hotel. The distribution of food merchants of various grades is reasonable, basically meeting the different needs of various groups of people. At the same time, from the overall distribution, Lujiazui is located on the west of the Huangpu River and is divided into two parts by the northwest to southeast of Metro Line 2. Zhengda Plaza, Guojin Center and Global Finance are attached to the core of the southwestern part of Lujiazui. Around the three tallest buildings, it provides a full range of goods and services for work, tourism, leisure and entertainment. The office buildings of various financial institutions and banks in the northern half of Line 2 are surrounded by central green spaces. Businesses such as restaurants and entertainment are mainly distributed along the roads. In the east, there are more residential communities, hospitals, hotels, schools, and sports centers, and the eastern and the southern parts have the denser distribution.

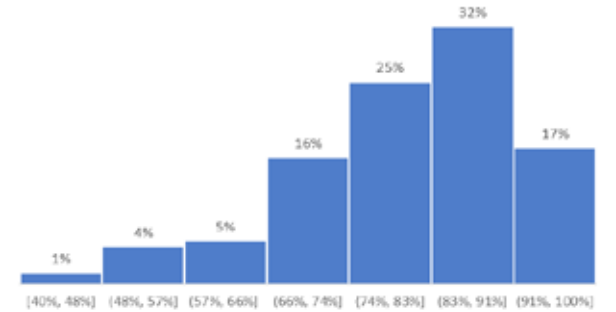


Figure 6 - Lujiazui Food Business Favorable Rate Distribution Map

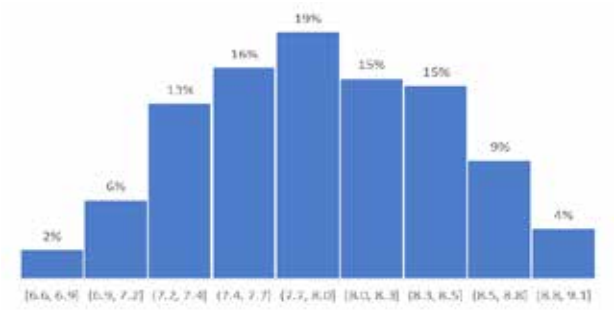


Figure 7 - Lujiazui Food Business Average Score Distribution Map

All in all, in the densely populated office buildings, the distribution of restaurants, entertainment and other businesses is also concentrated, and a large commercial entertainment plaza is formed in the vicinity, which radiates the entire commercial community. In residential areas, it is more scattered, more dependent on the street, the type is also more oriented to the convenience of people and civilian services, such as: supermarkets, convenience stores, hospitals, restaurants, etc., and leisure services, such as: cafes, bars, gyms, etc. accounts for a part of the proportion but slightly lighter than the former; while hotels rely on community residents and businesses, among which high-end hotels are mainly distributed around riversides or commercial areas, while most economical types are distributed in residential areas.

Study of "feng shui" characteristics from the perspective of ecological community

Generalized ecological community theory

Ecologically, a collection of organisms of the same species that occupy a certain space at a specific time is called a Population. A collection of all biological populations that are concentrated in a given area or habitat at a particular time becomes a Community. There are many kinds of ecological communities in nature. They are based on the food chain or the nutrition chain (microorganisms). They maintain the sustainable circulation of the whole community through the balance of three different roles: the Producers who can use organic materials to make organic matter; the Consumers who directly or indirectly use green plant organic matter as a food source, and the Decomposers who decompose complex organic matter into simple. In the long-term evolution of the above communities, the top communities with the highest material and capacity exchange efficiency are finally formed. Professor Dai Weihui of Fudan University proposed the concept of "generalized ecological community" by observing and comparing the similarities between the socio-economic field and the "ecological community" of nature[8]. From four aspects (the community structure, operational mechanism, succession and supporting environment) a generalized ecological community theory is constructed, and applied to the research of innovation ecosystem and industrial park layout planning [9].

For the socio-economic field, the composition of the general ecological community mainly includes producers, consumers, decomposers and the environment. Through energy flow, material flow and information flow, they

form an organically connected sustainable development system. The system model of the ecological community of the commercial circle is shown in Figure 8, in which the Producer refers to the creator of goods and services supplied in the community, the source of the goods that the customer enjoys, and the producer of the facility carrier of the required service; the Consumers refers to the institutions and enterprises that directly convert the producer's results into goods and services or are further processed into the next-level goods; the Decomposers refer to the final consumers who accept goods and services, that is, customers. The environment refers to nature, transportation, living conditions and related infrastructure, service institutions and humanities and social atmosphere.

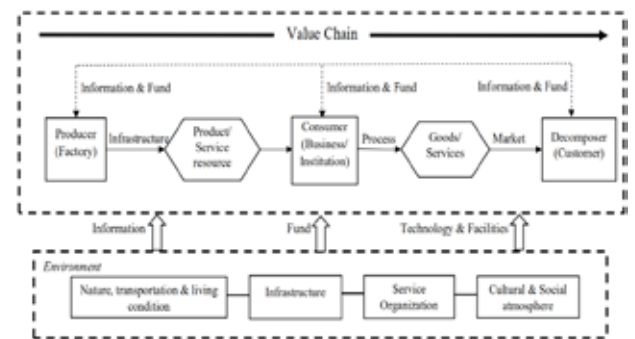


Figure 8 - System Model of Ecological Commercial Community

In the above system, species and individuals may mutually restrict and promote each other, and the interspecific relationships mainly include cooperation, predation, and competition. For example, entertainment venues are mostly concentrated and there is a "cooperative" relationship; due to the stable demand for haircuts, there is a "competitive" relationship between barbers; the number of convenience stores near large supermarkets has plummeted, and there is a "predator" relationship. Thus, similar to the relationship between the nutrition chain and the food chain, this paper refers to the value transformation and factor reduction process formed by the business associations between different "populations" in the commercial community as the ecological chain of the commercial community.

"Feng shui" characteristics analysis of commercial communities

In Lujiazui, there are various business office buildings, shopping plazas, residential areas, etc. Metro Line 2 connects Lujiazui to Puxi and the traffic conditions are well developed. The commercial community includes

food, supermarket convenience stores, hotels, living services, leisure and entertainment, shopping (various goods, service franchise stores), etc. The following pictures, Figure 9 and Figure 10, more vividly represent the typical appearance and various kinds of commercial communities in Lujiazui, Shanghai[10] and the structural proportion of business services.



Figure 9 - Schematic Diagram of The Typical Appearance of Shanghai Lujiazui[10]

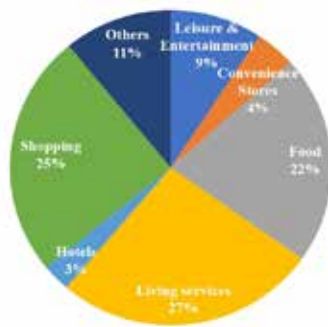


Figure 10 - Structure of Shanghai Lujiazui Commercial Community

In the case of the “Feng Shui” characteristics of many typical commercial communities are found through the analysis of big data. After analyzing these features one by one, it is found that, to a certain extent, they can be explained better using the general ecological community theory.

First of all, the tallest buildings such as the Oriental Pearl in Lujiazui stand by the water and close to the Huangpu River, forming Shanghai's most famous night scene, attracting tourists and businesses from all over the world to visit or office meetings, so a considerable amount of people are guaranteed. The fixed inhabitants (decomposers), and a large number of floating people in and out every day, gather “Qi” into the commercial community, which provides sufficient demand and purchasing power for the entire commercial community, and an inexhaustible source of power for its development.

Based on this demand, the comprehensive entertainment shopping mall and Riverview Hotel have met the consumption and living needs of the passenger flow.

Secondly, “Feng Shui” pays attention to the balance between yin and yang and adapts to local conditions. The so-called yin and yang are like praise and bad reviews or high scores and low scores. It can be seen from the ratings and evaluations of the food categories in the commercial community that the grades and quality are close to the normal distribution, providing customers with a variety of choices. The merchants (consumers) in the Lujiazui are rich in variety, and according to the different functions of the commercial district and residential areas, there are different distribution modes and types of choices. The former focuses on catering and entertainment, while the latter focuses on life services. This distribution perfectly adapts to the supply and demand relationship of different characteristics, achieves the balance of community status, and achieves lasting prosperity.

Finally, just as the ancients chose the suitable climate and the fertile soil to cultivate and live, such areas can nourish the growth of all things, thus further promoting the development of human society. In this case, complete infrastructure, convenient public transportation, orderly social environment and so on provide a favorable environment for the entire commercial community, and promote a reasonable competition and cooperation mechanism within the commercial community, which is a fertile ground for commercial development.

Suggestions for the planning of commercial communities

The planning and layout of commercial communities is also closely related to the development of commercial communities. The quality of “Feng Shui” and the rationality of layout are related to the sustainable development of the commercial population and the healthy development of the entire commercial community. Based on our above analysis and typical case studies of some of the more mature commercial communities, this paper has summarized some rules for improving “Feng Shui” and proposed some planning suggestions.

- (1) The layout is based on customer needs and focuses on diversity. In an ecological community, the decomposer's ability to disintegrate is limited, and the indecomposable output accumulates, which in turn affects the number of consumers involved. In the commercial community, consumers represent

businesses that offer a variety of products and services, and decomposers represent customers. Therefore, in the layout of commercial communities in the commercial circle, it is necessary to consider the consumption power and consumption intention of customers in the nearby radiation range to make plans [11], and diversify the types of businesses and the grades and styles of the same merchants.

- (2) Centralized layout and decentralized layout[12]. Similar to the population distribution of natural ecological communities, the distribution within commercial service populations is also different, which is divided into centralized distribution and uniform distribution. In the densely populated and highly mobile commercial community, service facilities such as catering and entertainment are often more compact and centralized, which is more suitable for market selection and commercial operation, and is also conducive to the effective allocation of resources. For residential areas, they tend to be relatively evenly distributed across streets, such as snack catering, clothing accessories, and some small essential business services, such as convenience stores, repair shops, etc.
- (3) Dependent layout. Dependency layout refers to the layout of certain business services that are heavily influenced by the layout of other business services. First of all, for example, convenience stores often depend on the distribution of residential areas; hotels are often influenced by the distribution of enterprises, attractions and schools. Moreover, "parasitic" as a special part of the consumer, its style and grade should also be selected according to the characteristics of its "parasitic" subject, such as high-end hotels are close to business and leisure areas or travel resorts, and more affordable hotels are distributed in the vicinity of residential, medical, and educational areas.
- (4) Environmental considerations for layout. The layout of the planned commercial community will also be deeply affected by the environment. The residential area should be properly isolated from the noise-prone, disorderly, and polluting commercial service outlets. For example, intensive office areas should be kept away from residential areas, and entertainment and catering industries should not be

placed around residential areas with an excessive proportion. In addition, the business environment is equally important, and infrastructure, transportation, social and cultural atmosphere should provide strong support for the commercial community.

The layout of business services directly affects the development of relevant business individuals and the living experience of residents, which indirectly affects the development of commercial communities throughout the community. The above points are all necessary indicators when measuring the "Feng Shui" of the business community. Similar to the indicators for measuring the ecosystem, good "Feng Shui" means high income of commercial service population, high satisfaction of residents, and strong abilities for sustainable development of commercial communities.

Summary and discussion

This paper introduces the origin and development of the traditional Chinese theory of "Feng Shui". Then, taking the Lujiazui commercial community in Shanghai, China as an example, it analyzes the characteristics of "Feng Shui" through online review data, and studies the business based on the theory of general ecological community, the influence of the geographical location, traffic environment and structural layout on the characteristics of the above-mentioned "Feng Shui" characteristics, and the micro-ecological mechanism is expounded. The research of this paper provides a new theoretical perspective and methodology for the combination of empirical analysis and mechanism research for the study of the commercial community, and provides inspiring countermeasures and suggestions for the planning and business development of the commercial community. The important direction for the follow-up study in this paper is to study the problems with different types of commercial communities and do some interviews with merchants, tourists and customers, and analyze the dynamic evolution process of the commercial community and the influence of various adjustment factors on its commercial development through system modeling and simulation.

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Speech Intelligent Monitoring for Early Warning of Depression Recurrence

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Abstract

Depression, the most common mental illness, has become a serious problem of public health worldwide. Due to the large number of patients and high recurrence morbidity, it causes huge losses to patients and their families, as well as heavy burdens to the society. According to clinical statistics, over 80% of patients will suffer recurrence within five years after their first treatments. However, for the reasons such as weak self-perception and fear of public bias, most patients fail to be treated in the early stage of recurrence. Medical research shows that the speech changes of patients have important clinical significance for early monitoring of depression recurrence. Based on the review of existing researches, this paper analyzes the above changes and monitoring indicators from both acoustic features and semantic features of the patient's speeches with recurrence, and therefore proposes a system's schema for intelligent monitoring and early warning of depression recurrence. It can be developed as an APP of mobile phone or combined into wearable speech device.

Keywords

Depression recurrence, intelligent monitoring, speech, acoustic feature, semantic analysis

Introduction

Depression, also known as depressive disorder, is a syndrome characterized by significant and persistent low mood. Its core symptoms include low mood, lack of interest, anhedonia, and may be accompanied by somatic symptoms, suicidal thoughts or behaviors. Depression can be seen in a variety of mental diseases, such as depressive episodes of mood disorders, cyclic mood disorder, bad mood, etc. Depression can also be a secondary symptom of physical diseases, brain organic diseases and some psychosocial factors such as losing love, the death of loved ones, etc.

Depression includes disruptive mood disorders, major depressive disorder (including major depressive episodes), persistent depressive disorder (dysthymia), premenstrual dysphoria, substance/drug-induced depression, depression caused by other physical disorders, and other specific or unspecified depressive disorders[1]. There are many types of depression, of which the major depression disorder represents this group of diseases. Symptoms are mainly manifested as mood depressed (sadness, emptiness, hopelessness, tears), loss of interest

or pleasure, accompanied with drastic weight change, sleep disorders, fatigue, guilt, inattention, restlessness, recurring thoughts of death.

The prevalence and recurrence rate of depression is high but the rate of diagnosis is low. At present, the diagnosis rate of depressed people in China is currently less than 10%. The highest incidence of depression in the US population is 20%, and the lowest is 16%, while in China it is between 5% and 6%. According to the World Health Organization, depression is by far the fourth largest burden of patients worldwide. Roughly one in seven people suffer from depression in their lives. By 2020, depression will become the second largest disease in the world after cancer[2]. According to clinical statistical analysis, more than 80% of patients will have recurrence within five years after the first treatment, but most patients fail to receive treatment in the early stage of recurrence[3]. Medical studies have found that speech changes in patients with depression have important clinical significance for the early detection of recurrence.

The speech features of depression mainly include saying few words, speaking slowly and incoherently. Besides,

the speech rate, intonation, and volume are much lower than normal people. Clinically, it is also pointed out that patients with depression have some changes in acoustic features, mainly including the fluency and rhythm of speech[4]. Therefore, it is necessary to monitor the depression recurrence through a more intimate and accurate way, namely speech monitoring.

This paper mainly studied on the speech monitoring method of depression recurrence in the Chinese language situation. For the speech collection, it is divided into two parts, one is the acoustic feature, the other is the semantic feature. Because the acoustic signal of the foreign speech database is more perfect while domestic one is faultiness, this paper refers to the foreign speech database and collects depression and normal speech database from domestic medical institutions. For semantic features, the information in the semantic text is analyzed by affective computing. This study will also focus on the algorithm of speech information, compare the various algorithms at home and abroad, analyze the advantages and disadvantages, then choose the best form them. Finally, our speech monitoring program of depression recurrence is given.

The results of this study can be applied to the monitoring of recurrence of depression in depressed patients who have recovered. This study achieved early detection and treatment of recurrent depression, thereby greatly reducing the loss caused by the recurrence of depression.

Speech change characteristics and monitoring indicators of depression recurrence

Acoustic features and monitoring indicators

The speech itself has acoustic physical characteristics, including pitch, volume and timbre for different individuals. The core of studying the physical characteristics of speech is "how to vocalize" without semantic information. Instead, it focuses on the construction of organ models, and quantifies the organs through various physical parameters. Since the acoustic characteristics of speech are rich in content and have certain objectivity, they are easy to identify and measure. Therefore, research topics based on the acoustic characteristics of speech itself for depression detection are more extensive. Depression is mainly characterized by significant and

persistent low mood. It also has typical characteristics in terms of speech performance. Clinically, speech symptoms mainly include the small volume and weak sound, incoherent speech when patients communicating with others, accompanied by long-term intermittent pauses which is obviously different from normal people. Moreover, there are many situations in which discourse and meaning do not correspond. It is difficult for patients to express their subjective will, and they may even stutter when they hesitate[2]. Common acoustic features mainly include prosodic features and spectrum.

The relationship between common prosodic features and depression has been summarized and shown in Table 1.

Early studies on the speech of patients with depression have consistently found that the patient's rhythm is abnormal, which is characterized by lower pitch and pitch range, slower speech speed, and more pronunciation mistakes. Pitch, volume, and speed can be presented by radical frequency and energy parameters. Åsa et al. hired non-psychological background evaluators to identify speech signals which were included in a radical frequency curve.

They conducted a series of hearing test experiments to determine whether the subject was suffering from depression or had been cured. Its research shows that the accuracy of this method reaches 80%; In the study, the basis of the fundamental frequency curve of the hearing experiment is that the fundamental frequency curve contains a wide range of prosody information, such as: fundamental frequency changes, speech rate and pause time[5]. Spectral features are considered to be a reflection of the correlation between vocal tract shape changes and vocal movement. It is consistently observed in the current studies that changes in spectral characteristics are associated with the mental state of the speaker[6]. In speech studies of patients with depression, common parameters of spectral features include linear predictive cepstrum coefficient (LPCC) and Mel frequency cepstrum coefficients (MFCC). Among them, MFCC is an important acoustic feature, which is obtained by the initial speech file Mel frequency and a series of cepstrum calculations. It is often combined with the Gaussian Mixture Model (GMM) and has been proven to be a good indicator in depression recognition

Feature name	Levels of depression		Significance test
	low	high	
Radical frequency range (Hz)	21±2(n=16)	15±2(n=16)	p≤0.001(t-test)
Radical frequency range (Hz)	38.3±11.3(n=11)	15.8±18.2(n=11)	p≤0.004(t-test)
Radical frequency average (Hz)	150.6±31.4(n=19)	142.0±27.2(n=22)	N.S. (t-test)
Radical frequency average (Hz)	153.3±35.7(n=51)	151.8±36.5(n=54)	N.S. (t-test)
Radical frequency change (Hz)	0.23±0.1(n=16)	0.20±0.1(n=10)	N.S. (t-test)
Energy per second (mV ²)	11.0±4.8(n=30)	9.9±3.7(n=30)	p≤0.001(Wilcoxon-test)
Volume (dB)	14.2±7.33(n=19)	18.1±6.37(n=22)	N.S. (t-test)
Average dwell time (s)	0.68±0.136(n=19)	0.70±0.162(n=22)	p≤0.05(t-test)
Total dwell time (s)	36.4±19.4(n=51)	51.9±31.5(n=54)	p≤0.001(t-test)
Rate of dwell time change (s)	0.51±0.15(n=51)	0.69±0.25(n=54)	p≤0.001(t-test)

Semantic features and monitoring indicators

Based on the common symptoms of depression, patients with depression have the following semantic features: I am not happy every day; life is boring; I am not interested in all sorts of things; I have no interest in life; I feel very guilty and remorse; It feels like other people laughed at me; I feel like I have a crime and a deep sense of sin; People always talking about me.

Based on Beck Depression Scale (BDI)[7], Depression has the following semantic characteristics: I feel sad and discouraged about the future; I think I'm a completely failed man; I am not satisfied about the matter, or feel boring; I feel guilty; I feel like I'm being punished; I hate myself; I blame myself broke all the things; I want to commit suicide; I want to cry; I get angry easily; I lost interest to others; I make a decision very difficult; I think I look very ugly; No matter what work I do, I have to try to push myself; I sleep badly; I am very tired and weak; I have no appetite; My weight has dropped a lot; I worried about physical problem and my sex interest has been lost.

According to the Hamilton depression rating scale[8], it will appear in the language of patients with depression, like significant depression, guilt feeling, mentioning suicide, sleeping difficulty, light sleep, early awakening, loss of interest in work, slow response or agitation, spiritual anxiety revealed by words, obvious weight loss, abnormal appetite and body unhealthy reaction, accompanied by delusions, hallucinations, and so on.

Since patients with depression have obvious emotional changes, affective computing of semantic texts should play an important part of semantic monitoring of depression. According to comprehensive psychological research, Mehrabian demonstrated that any type of emotional state can be well described by three nearly independent continuous dimensions: Pleasure–Displeasure (P), Arousal–Non-arousal (A), and

Dominance–Submissiveness (D). Based on this, he proposed the famous PAD model[9][10]. By monitoring the proportion of pleasure–displeasure, arousal–non-arousal, and dominance–submissiveness, the affection can be ensured.

Integrated monitoring indicators and fusion recognition

Clinically, semantic information is more effective for diagnosis. However, it is less involved in existing speech research for depression monitoring. Instead, acoustic features, which are relatively objective, are often used as monitoring indicators. This paper proposes to divide the collected information into acoustic features and semantic features, and creates a new monitoring and evaluation method which combines both of them.

In terms of acoustic signals, foreign researches use some speech databases for depression such as the DAIC-WOZ database. But they have not been proved to be useful in the study of machine learning of depression recognition under Mandarin conditions. At present, there are studies on German and Turkish corpuses abroad[21]. On this basis, the multi-language fusion algorithm of Chinese and English corpuses may be a good direction of inquiry.

In terms of semantic features, it is realizable to convert semantic content from audio to text in order to make further analysis on text. Nowadays, in spite of much room for accuracy improvement, some speech conversion components and APPs can help convert to text successfully.

An inductive review of speech recognition algorithm

Speech recognition algorithm

There are many discussions on the clinical identification of depression in foreign countries, and the use of artificial intelligence and machine learning to simulate clinical identification is the focus of many articles. At present,

the proposed algorithms have the following kinds of detection indexes: language features, interview text of clinical diagnosis, 3D reconstruction of facial features and the combination of above three indexes[11]. This paper focuses on the algorithms of language features as an indicator, which can be subdivided into semantic research, acoustic feature research and non-semantic research. Semantic research is also divided into interactive research which simulates clinical diagnosis questioning methods or uses depression diagnostic scale, and monitoring research which collects clinical phonetic information of patients, comparing with the corpus and studying data's statistical significance to identify the degree of depression. In terms of acoustic features, different rhythmic features, speech spectral features, and sound quality characteristics of patients with depression are studied and distinguished. Non-semantic research focuses on the performance when patients with depression are speaking, such as the frequency of speech, pauses and duration of speech, and variations in pitch[12].

In specific researches, the algorithms proposed in the previous literature often refer to multiple indicators for comprehensive evaluation.

The database selected for most of the papers is the DAIC-WOZ database, which is collected in the form of semi-structured clinical interviews. To be specific, the clinician to talks with the patient for diagnosis by a digital camera, and the camera collects patient's voice and face expression. Typical collection methods of voice, image, text, etc. include C-CNN[13] (Causal Convolutional Neural Network), SVM[14](Support Vector Machine), CNN + LSTM[15](Convolutional Neural Network (CNN) and Long Short-Term Memory (LSTM) and the methods of Williamson[16], Alhanai[17], Gong[18], et al.

C-CNN[13] refers to the Temporal Convolutional Network (TCN), which is a synthesis of a series of computing architectures. The characteristics of TCN are: 1) the convolutions in the architecture are causal, meaning that there is no information "leakage" from future to past; 2) the architecture can take a sequence of any length and map to an output sequence of the same length, just as RNN. The implementation of SVM[14] is: the L2-regularised L2-loss dual solver is chosen (option -s 12) and a unit bias is added to the feature vector (option -B 1), all others parameters are kept to default. CNN+LSTM[15] captures the short-term and medium-term duration and corresponding audio spectrum

through CNN combined with LSTM. The hierarchical structure delivers a comprehensive audio representation by capturing the short-term and middle-term temporal and spectral correlations with CNN, and extracting the long-term correlations via LSTM. Williamson[16] et al. provided an effective depression monitoring system through the fusion of audio, video, and semantic features from the neurophysiological and neurocognitive effects of major depression. Alhanai[17] et al. demonstrated that the use of sequence models utilizing audio features is more efficient than the text feature model and the weighted feature model. Gong[18] et al. proposed a topic-based analysis and context-based model that could reduce the possibility of missing details of audio, video, and interview text during important time in an interview.

Inductive review

Overall, for data-driven scientific research, the research method is from the form of previous telephone recording and diagnostic scale filling to the collection of voice information, data information for machine learning, observation of statistical characteristics and reflection of diagnostic indicators. It is still the process of inputting data, analyzing statistics, then outputting data, but the media is updated due to modern intelligent technology.

The Mel Frequency Cepstral Coefficient (MFCC) is a commonly used speech processing method in depression monitoring. The low frequency MFCC can be used to identify patient speech, but it is limited by a certain degree of noise. In actual research, smart phones are commonly used to collect audio. The noise in this process can be effectively reduced by high-band voice activity detection, conservative speech segment selection strategy and specially customized normalization algorithm[19]. In the detection of depression, Afsha et al.[20] obtained the clustering data by Gaussian mixture model and maximum likelihood estimation. Then the i-vectors vector classification system was used to combine MFCC and speech quality features. It also proved the reliability of using speech quality features to detect depression. Ozkanca et al.^[21] confirmed the feasibility of multilingual database in the detection of depression by comparing German and Turkish, and revealed the possibility of multilingual fusion algorithm, which provided a good example for the establishment of a complete database in China.

Based on the DAIC-WOZ dataset, Haque1 et al. proposed a new multimodal sentence embedding model to capture

long-term acoustic, visual and linguistic features. In clinical interviews, there may be cases where the length of audio and video recording is longer than normal because patients may stutter and frequently pause between words. By comparing the average error of C-CNN and the five methods as described in 2.1 in audio, video and text respectively, it can be concluded that C-CNN is most suitable for modeling these three aspects. In the original text of C-CNN, it is proved that TCN is the structure that is simpler, more computationally convenient because of less storage space requirement, and is also suitable for longer sequence input than ordinary network structures.

Although C-CNN is suitable for long-sequence input structures, this algorithm focuses more on joint operations on faces, speeches, and interview texts. Referring to the Algorithm of Williamson[16] et al. for the speech interview part, we translate the relevant keyword sentences into the Chinese Depression Scale to form a Chinese corpus.

In order to identify the exact semantics of Chinese, we need to make a series of improvements to the noise-reduction function based on the monitoring process built on the smartphone APP. The noise in this process can be detected and conserved through high frequency speech activity, and the conservative segment selection strategies using highly thresholded voice activity detection, coupled with tailored normalization approaches was proved effective to reduce noise[19]. Due to the need for long-term monitoring, the assessment of voice quality has an important impact on the monitoring results. In order to achieve the desired results, we will use a vector method to combine MFCC and voice quality features.

At the same time, monitoring equipment also needs to record significant environmental factors such as local time, weather, temperature, and so on. Lu Xiaoxing's research^[22] shows that the impact of the season on the recurrence of depression is noteworthy. In order to improve processing efficiency as much as possible, the collected speech data will be divided into two parts: one part can be converted into text by the speech conversion component, and the other part can be used as non-realistic speech content to analyze acoustic parameters such as frequency and spectrum. The data processing section will be discussed in detail in next section. In terms of text, we use the previously established Chinese corpus as the standard. We extract, identify and calculate the frequency

of keywords. The text score is obtained by the form of the corresponding depression scales. In terms of speech, the LS-SVR algorithm[23] is used to recognize speech. In the DAIC-WOC database, we convert English content into Chinese and get Chinese standards. The speech score is obtained by compared with the recognized speech data. Finally, we use environmental factors, speech content that can be converted into text and speech content that cannot be converted into text to weight the degree of depression. Through pre-learning, the smart device establishes the correspondence between the above factors and the severity of depression. In comparison to the score of the depression recurrence threshold, an early warning is made and the severity is judged.

Speech monitoring system for early warning of depression recurrence

Different from most existing researches that focus on machine testing of depression diagnosis, we propose an early warning program for recurrence of depression. In the speech monitoring process, the speech indicators used for recurrence of depression are similar with the ones for initial detection. Considering that patients who have been recovered are familiar with the process and means of depression detection, we use wearable speech equipment or APP on mobile phone to complete voice data collection. The specific process of the intelligent monitoring program is as follows. Firstly, collect data through equipment or APP including speech information and local environmental factors such as time, weather, temperature, etc. Then divide the speech data into sound and text which is converted by the voice-to-text conversion component. Among them, the voice features are identified by LS-SVR algorithm, and the text is analyzed by text phrase analysis (such as frequency calculation and affective computing). Then combine two features as indicators for fusion recognition. Through a long-term dynamic statistical analysis, determine whether the patient's depression has recurred, and the results will be presented on the equipment or APP.

The program does not provide interactive functions for patients and is mainly responsible for collecting speech information of patients. At the same time, all data and analysis during the monitoring period can be saved for auxiliary diagnosis of physicians and as a source of data for building large databases.

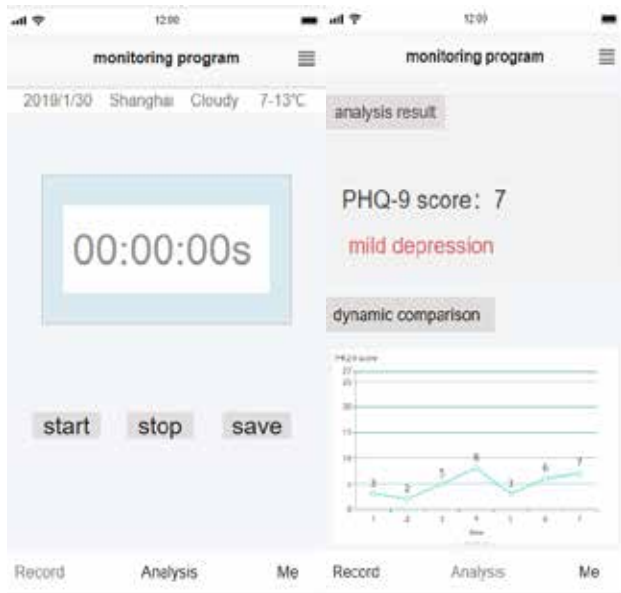


Figure 1 – APP Model Design

A flow chart for monitoring the depression recurrence based on speech is shown in figure 2.

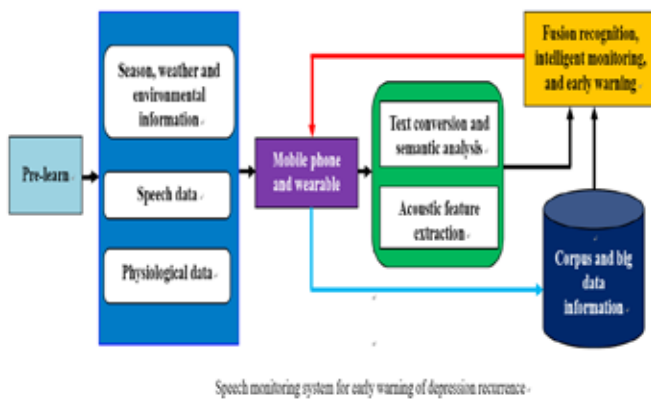


Figure 2 – Speech Monitoring System for Early Warning of Depression Recurrence

Pre-learning and dynamic comparison function

The pre-learning function is designed specifically for depression recurrence. The device is not limited to use among patients who have been recovered. We recommend that the patient start wearing the equipment or using the APP since the depression has been detected so that the equipment can learn all aspects of the specific individual's speech characteristics in advance. It helps equipment to be familiar with the individual's speech habits and the main abnormal speech indicators of the patient, in

order to better adapt to the monitoring environment. The monitoring process for the recurrence warning will also be more stable and accurate.

The dynamic comparison function is designed for the differences of individuals with depression to improve the reliability of long-term monitoring.

Due to differences in personality types and language habits, it is unscientific to use absolute quantitative criteria as a common standard for early warning to monitor depression recurrence. Instead, it is reasonable to do long-term dynamic monitoring for a specific individual. Depression is cyclical, but the specific cycle varies from person to person. It is necessary to constantly compare the frequency and range of various indicators changes in a certain period of time. Moreover, long-term monitoring of the equipment provides a large number of data sets for dynamic analysis and long-term comparison.

There are many data collection methods for the pre-learning and dynamic comparison, and we intend to make the best choice in the following ways:

- 1) Whole process monitoring method. This method is temporarily still an idea and no corresponding algorithm has been found. The speech data of the subject's whole test process is collected by the smart phone, and then uploaded to the cloud database for effectiveness screening. Effective information from the screening was used to determine the degree of depression, using methods of contextual simulations and hyper parameter comparison. This approach requires a large amount of data samples, sufficient storage space to store data and devices with sufficient performance on data processing.
- 2) Change the monitoring method, from the whole process monitoring without interaction to the combination of interaction and monitoring. During the monitoring process, participants are required to conduct interactive clinical interviews at regular intervals. Subjected by a professional doctor, the participants are interviewed for clinical depression through a smart phone. Finally, using the Depression Scale as the criterion, the judgment of the degree of depression and the accuracy of the corresponding

judgment are obtained. This method collects speech data through a smart phone and uses the MFCC method to compare with the existing situation.

- 3) Reduce the monitoring time, from full-time monitoring to specific typical time monitoring. Reduce the 24-hour monitoring process to four typical time periods every day from 7:00 to 8:00, 12:00 to 14:00, 16:00 to 17:00, and 20:00 to 21:00 for data reduction and the typicality can increase the monitoring accuracy to a certain extent.
- 4) Increase the cycle length and the dynamic comparison process will be improved from once a week to once a month and the comparison content will be changed. Specifically, as the number of days changes, compare the indicators within one month before the day and one month before the day before. By comparing the less differentiated databases, the accuracy of the algorithm can be increased to a greater extent.
- 5) When processing semantic information, we divide the speech information into two parts: text and non-text. During the monitoring process, the speech that can be converted into Chinese text by the recognizer and then it is stored in text form, and the voice content that cannot be converted into text accurately is stored in a short period voice data. Thereby, the amount of data storage needed is greatly reduced, and the storage efficiency is improved.

The biggest difficulty of this idea is that there is still a problem of conversion accuracy in the Mandarin text conversionsystem. Due to the large number of homophones, such algorithms may lead to misdiagnosis, which become an obstacle to medical diagnosis. In addition, since the trial anomalous semantic information is difficult to get enough data to build a semantic library, they must be ignored in the statistical process. This part of the data may become a key basis for doctors to diagnose patients during clinical diagnosis. In the future, researchers can create a new algorithm that separates anomalous semantics from noise and establish a corresponding reflection system to further improve the early warning function and accuracy of depression monitoring.

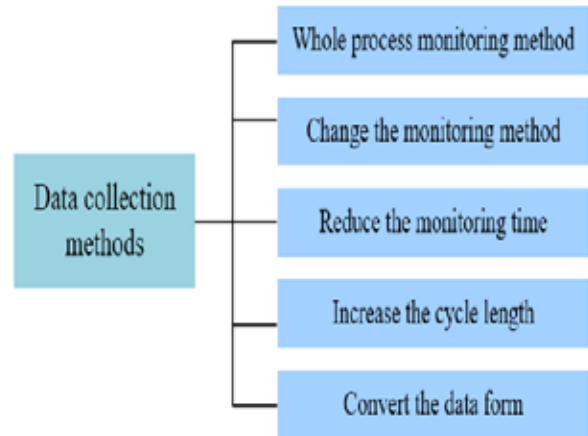


Figure 3 - Data Collection Methods

Construction of dual indicators

Different from most previous speech monitoring studies of depression, we will combine the acoustic features and semantic features as dual indicators of speech monitoring. Acoustic features mainly include pitch, volume, speech rate, abnormal pauses, and pronunciation changes. Semantic features focus more on whether patients have extreme words and negative emotional words frequently in a certain period of time, and determining whether they meet the characteristics of depression by analyzing the emotions in the patient's speech.

The dual indicators have the practical significance of judgment in clinical medicine, so the establishment of dual indicators can be used to improve the accuracy of the monitoring by combining acoustic features and semantic ones.

Semantic analysis indicator

For the specific algorithm, this paper establishes a two-dimensional semantic analysis model and takes PHQ-9 scale[24] as the benchmark. The scale questions, the scores and keywords are shown in Figure 4.

The question group is composed of question descriptions and time duration descriptions, and each part has corresponding score. When the subject mentions the corresponding keywords in the interview, the corresponding X_i is assigned 1 point. When X_i is assigned 1 point, the program will automatically give the second

question, and the corresponding point for Y_i is shown in the table. Finally, the score is got by accumulating points.

$$\text{semantic score} = \sum_{i=1}^8 X_i + Y_i \quad (1)$$

When using the equipment, subjects are required to select a period of time to answer questions every day. Three questions are randomly selected from eight questions as a group (the remained two questions are asked in the third day), and three days is a small cycle. The device will automatically convert the answers and questions into text. According to the score standard, a score will be given according to a lexical analysis and affective computing based on the corpus and big data information.

We hereby proposed a two-dimensional semantic analysis model as shown in Figure 4. It includes 8 questions, and calculates the feeling indicator according to the subject's answers.

1) Feeling Indicator

Variable X_i ($i=1, \dots, 9$) (Point +1)

1 How is your mood?

Low, depressed, desperate

2 How do you feel about doing things?

Not good, boring, not interested

3 How is your sleep?

Can't sleep, not stable, too much sleep

4 How does your body feel?

Tired, weak

5 What is your diet?

No appetite, overeating

6 How is your self feeling?

Self-blame, feel bad, let people around

7 How efficient is it when you do one thing?

Unable to concentrate and inefficient

8 Have you ever thought of a suicide?

Have been +2, often+3

2) Frequency Indicator

Variable Y

How long have you been in this mentality?

Y=1 A few days, occasionally

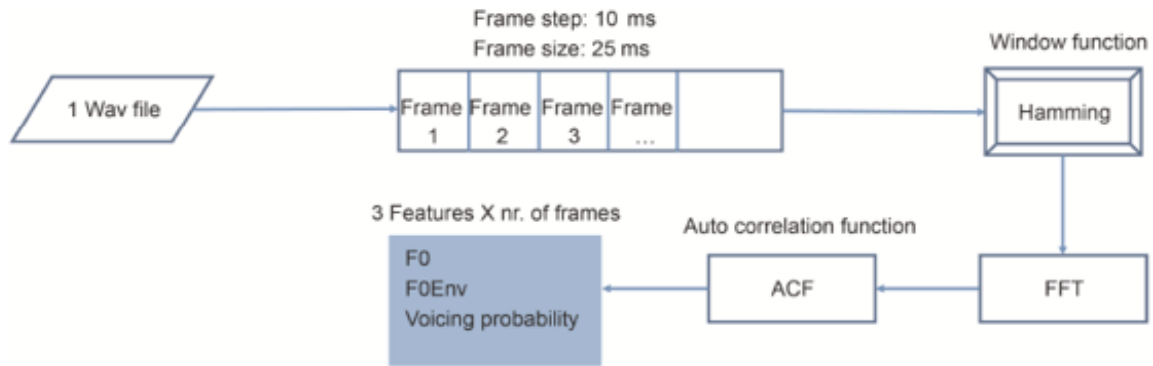
Y=2 More than half of the number of days, usually

Y=3 Almost everyday, always

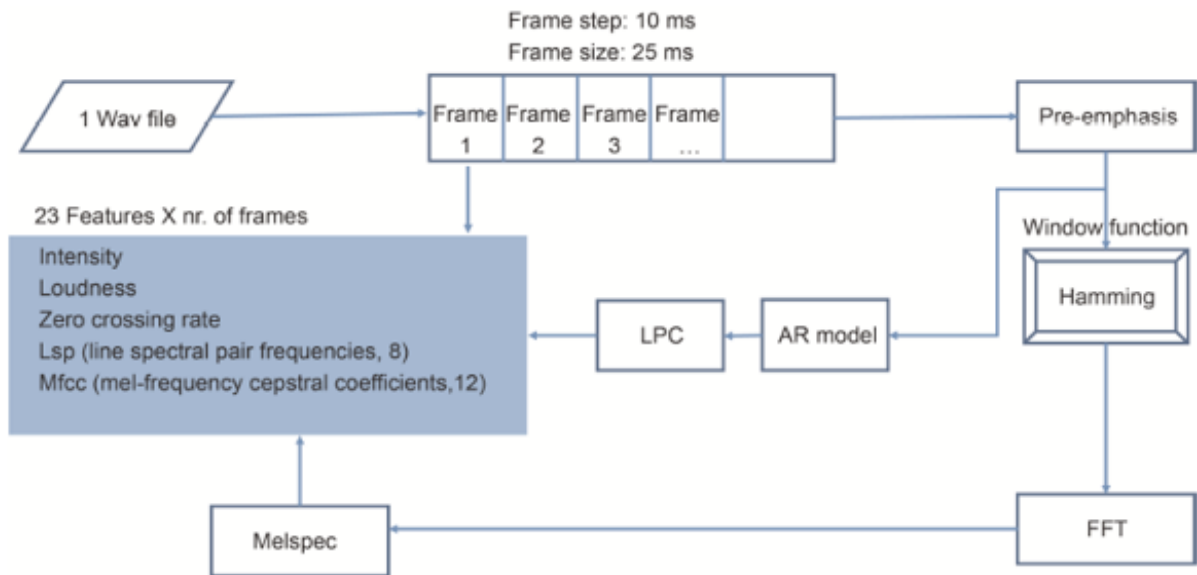
Acoustic indicator

In the actual process, the acoustic features of the subjects during conversation are collected by intelligent device. A piece of the most concentrated conversation time of the day is randomly selected on a daily basis, and the audio file with a length of 124s is captured. The audio file is divided into 498 frames by using the method of Pan Wei et al. Among the short-term features, the discontinuity of the fundamental frequency, F0 envelope and voicing probability are reduced by using Hamming Window Function, and then the signal related with frequency domain is processed by fast Fourier transform. The autocorrelation function is used to calculate the pitch period of the sound and then three short-term features are obtained from each frame of the signal. The other 23 features are processed with pre-emphasis, Hamming Window operation, fast Fourier transform and Mel Frequency cepstrum analysis to obtain 12 MFCC and obtained from each frame of signal by LPC (linear predictive coding) basing on AR (auto-regressive) model. As for long-term features, the smoothing processing and the first derivative calculation are carried out on the 26 short-term features of each frame to obtain 26 short-term delta features and there are totally 52 features in each frame. After that, each feature is statistically calculated vertically on 498 frames, and finally 988 long-term features are obtained. The extraction process is shown in Figure 5. WEKA software is used to construct a depression classification model that only includes voice Q&A tasks while intelligent device gives positive and negative assessments of depression under different emotional conditions[25].

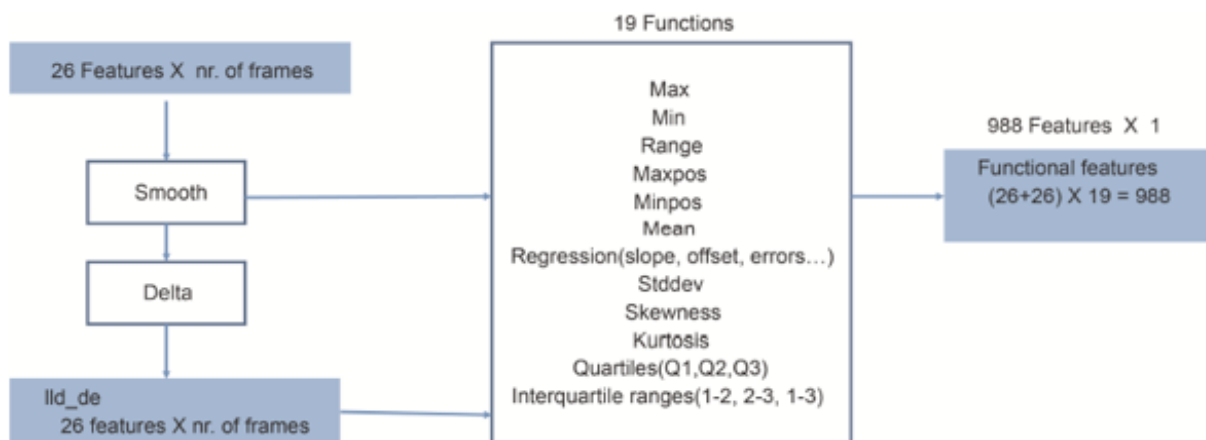
Figure 4 - Two-dimensional Semantic Analysis Model



Extracting procedure for 3 short-term voice features⁴



Extracting procedure for 23 short-term voice features⁴



Extracting procedure for 988 long-term voice features⁴

Figure 5 - Acoustic feature collection process[25]

In this algorithm, combined with the experimental results shown in Table 2, this paper re-assigned the results obtained under three emotional conditions.

Table 2 - The results of classification models under different conditions (%)

	Speech Q & A		
	Positive	Neutral	Negative
Precision	77.3	67.6	82.9
Recall	73.9	54.3	73.9
F score	75.6	60.2	78.2
AUC	78.3	66.8	80.9

Emotional indicator

The monitoring device can only ensure that the speech of the subject is monitored, but it does not acquire the context of the conversation between the subject and others in most of situations. Therefore, this paper attempts to perfect the monitored audio by analyzing the emotional state with the help of speech.

The data transformation method of Weihui Dai[23] et al. adopted Chinese three-digit emotional model of PAD as the standard and we also take it. During the process of interview, audio content of subjects' answers is collected, and then acoustic parameters are obtained by pre-processing: Short-time energy (Max, Min, Mean), Pitch (Max, Min, Mean), Short-time zero crossing rate (Max, Min, Mean), First formant, Second formant, Voice speed, Number of voice breaks, and the 12-order MFCC (12 coefficients). The LS-SVR model is used as follows.

$$f(x) = \sum_{i=1}^n \alpha_i \left[\exp \left(- \frac{\|x - x_i\|^2}{2\sigma^2} \right) \right] + b \quad (2)$$

X_i is the value of the input characteristic parameter. Weihui Dai et al.[23] have verified the identification reliability of this model for CASIA database, as shown in Table 3.

Table 3 – LS-SVR algorithm identification reliability^[23]

Emotion type	Recognition rate (%)
Happy	81.32
Sad	85.27
Angry	87.72
Surprised	77.69
Afraid	79.37
Neutral	83.23
Average	82.43

According to the analysis above, when carrying out pre-learning and dynamic comparison, the confidence degree of emotional type should be 0.82 for calculation. Different emotion types were divided as follows: Positive -- Happy & Surprised, Neutral -- Neutral, Negative -- Sad & Angry. The emotion degree obtained in this process is taken as the influencing factor of the algorithm for acoustic feature. To be precise, the error will fluctuate between 0.6 and 0.8.

Environmental indicator

Due to the lack of existing suitable scoring method for environment indicators, we firstly introduce our collection methods, statistical algorithms, and scoring criteria. By pre-learning, the corresponding environmental parameters are input into the device, which consists of five parameters: temperature, humidity, weather, season, day or night. Temperature and humidity are collected by smart devices, and seasons and weather are required from real-time weather reports. Day or night indicators are input by the time at which the information is measured. These environmental factors correspond to the time of interview and acoustic audio. On this basis, the device can pre-learn, input the environmental factors of the subject, and use the above algorithm to determine the degree of depression, which verifies clinical diagnosis. The related probabilities of the relationship between depression degree and three indicators: season, weather, day or night of the investigation time are calculated separately and judged by chi-square test. The total sample was randomly divided into totally K groups and each one has 20 people. Assuming that each group obtained a P value of P_{ik} , ($i = 1,2,3$), when $P_i \geq 0.05$, it is judged to be correlated, and the value about the indicator is assigned 1 point. For example, a set of samples show that the P value in winter is greater than 0.05. At this time, the value X_{ijk} related to the recurrence of depression in winter is recorded as 1. Otherwise, it is recorded as 0. In X_{ijk} , i represents the parameter corresponding - season and j represents the specific seasons like spring, summer, autumn, winter, and k represents the kth group of samples. Collect multiple sample data and calculate:

$$X_{ij} = \sum_{k=1}^K X_{ijk} \quad (3)$$

$$X_i = \sum_{j=1}^J X_{ij} = \sum_{j=1}^J \sum_{k=1}^K X_{ijk} \quad (4)$$

Then obtain different levels of depression recurrence and relevant environmental factors. Through different scores, this algorithm aims to give the possibility of depression recurrence in different environment, improving the reliability for the final evaluation of the depression monitoring.

Finally, these four indicators are used to establish a predictive model of depression recurrence by means of logistic regression analysis. The core is to predict the probability of event occurrence by fitting the data into the Logit function, which is suitable for the classification problem of complex data.

Creation and improvement of high frequency vocabulary of depression speech

The Chinese semantic library formed by the interview translation by the algorithm of Williamson et al. is still in the exploration phase. Due to the lack of domestically semantic library data, the semantic library formed by the form of translation can only be used as a reference, because different languages are used in different environments, which comes from different social and cultural atmospheres.

In the face-to-face depression diagnosis, the semantic information contained in the speech itself is often used as a key judgment indicator. It is used by doctors to judge the tendency and severity of depression. However, in the process of machine learning for speech recognition, influenced by the cultural customs of the semantics and the environment in which the dialogues happen, semantic features are generally not involved in the indicators of speech research.

In order to effectively include semantic information of speech into the intelligent monitoring indicators, this paper proposes to establish a Chinese high-frequency vocabulary library of depression speech. It includes vocabulary, phrases and short sentences that happen to people with depression at a higher frequency than normal people. Though the basic vocabulary is limited, it can be automatically learned and updated during the working process of the device by capturing high-frequency vocabulary related to negative emotions of specific individual, such as extreme words and negative emotional words. For one thing, it is better adapted to the individual needs and creates individualized vocabulary library, For the other thing, it also provides a large number of reliable sample data for the expansion and update of the high-frequency vocabulary of depression.

Text word analysis and affective computing

Emotional words can be obtained by searching the dictionary, web search, and HowNet query. It is divided into four categories: joy, anger, sorrow and fear. The four categories of words are assembled into a corpus, which facilitates the monitoring of various emotional words in the later stage.

The construction of emotional sentences can be supported by supporting SVM or machine learning. SVM is a new classification method developed in recent years. It is a learning system that uses linear function hypothesis space in high-dimensional feature space and has been proved to have good performance in classification. Support vector machines have been widely used in theoretical research such as pattern recognition, knowledge discovery and related technologies such as computer vision and image recognition, bioinformatics, and natural language processing. In natural language processing, SVM is widely used in phrase recognition, word disambiguation, automatic text classification, and information filtering. This paper will first select the information according to the corpus and then use the support vector machine to judge the emotional tendency of the sentence and identify the emotional words[26].

According to the foregoing, the affective computing needs to utilize the PAD model. After the pre-processed sound is extracted from the acoustic characteristic parameters, the non-linear machine learning is performed by using HMM, ANN, GMM and SVR. The PAD estimate of the acoustic signal, the resulting PAD value can be used as a result of affective computing. Affective computing can accurately determine the emotion of the monitored person to determine whether the symptoms of depression described above are met.

Summarization and discussion

This paper mainly analyzed the characteristics of speech changes in depression recurrence, and studied the related monitoring indicators from two aspects, acoustic features and semantic features, and summarized the existing speech recognition algorithms. On this basis, a speech intelligent monitoring program for depression recurrence was proposed by this paper.

Particularly for depression recurrence and the differences in semantic information of different individuals, the intelligent equipment can pre-learn according to previous conditions and dynamically update new data through

long-term monitoring. Different from most previous researches, we combine acoustic features and semantic features as dual monitoring indicators for depression recurrence warning. The speech features are identified by the LS-SVR algorithm, and the semantic features is analyzed through text word analysis and affective computing. Moreover, the application on mobile APP and wearable speech equipment will provide an intelligent means for early detection of depression recurrence.

Nowadays, the Chinese depression speech database and the accuracy of the voice-to-text conversion function are still in the process of improvement. After these functions are perfected, the accuracy and effectiveness of our monitoring program will be further improved.

Acknowledgments

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Meta-Analysis of the fMRI Observations of Brain Emotional Responses

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Abstract

The discovery of neuro basis of emotions is essentially preparatory to the development of Neuromanagement. And Functional neuroimaging, usually referring to the functional magnetic resonance imaging(fMRI), has the spatial resolution to explain the neuro structure distribution of emotions. As opposed to general qualitative meta-analysis, activation likelihood estimation method (ALE) is more common and more convenient for coordinate-based meta-analysis. And this algorithm is readily available in form of the GingerALE. This paper makes use of the BrainMap database, GingerALE and other collected materials to run separate meta-analysis on coordinates reported for anger, anxiety, disgust, embarrassment, fear, guilt, happiness, humor and sadness. Then it generates resultant ALE maps for each emotion category selected as above to compare the convergence of their neural distribution. Furthermore, this paper gathers the positive emotions' data together along with negative ones to run another two separate meta-analyses. These mapping results implicated that an integration hub for emotion and affective network must exist based on some important areas like Right and Left Inferior Frontal Gyrus and then divergent in some scattered areas. This is one reliable outcome for future studies and development of Neuromanagement so that researchers can furtherly research on how to target customers and employees with precise emotional detection.

Keywords

Neuromanagement, emotion, fmri, activation likelihood estimation, meta-analysis, brain function, brainmap

Introduction

Background and purpose

Neuromanagement is a young interdisciplinary subject which mainly combines the main research results of management, psychology and neurobiology[1]. It analyzes the behavioral decisions of human beings from the underlying mechanism of human cranial nerves and furthermore forecast our action. It also adds a new source of information to the traditional management theory, namely called objective neuron activity information. The introduction of this more objective variable will make many management decision models more perfect and closer to reality. As one important behavioral indicator, emotions play a key role in Neuromanagement[2]. According to previous research[3], emotions are biologically based

motivating states causing changes in feeling, behavior, and neurological and physiological function and likely have adaptive functions for communicating and making decisions. They can be categorized into anger, anxiety, disgust, embarrassment, fear, guilt, happiness, humor and sadness[4]. Understanding the brain structure of emotion processing is vital to the Neuromanagement and help us validate some sharp point.

Meta-analysis[5] is widely used in the field of clinical medicine and especially in the process of comprehensive analysis of the results of multiple research on the same subject. It's a propiate tool for us to get one complete summary for emotions in neuro way. Generally, the procedure of meta-analysis follows as Figure 1:

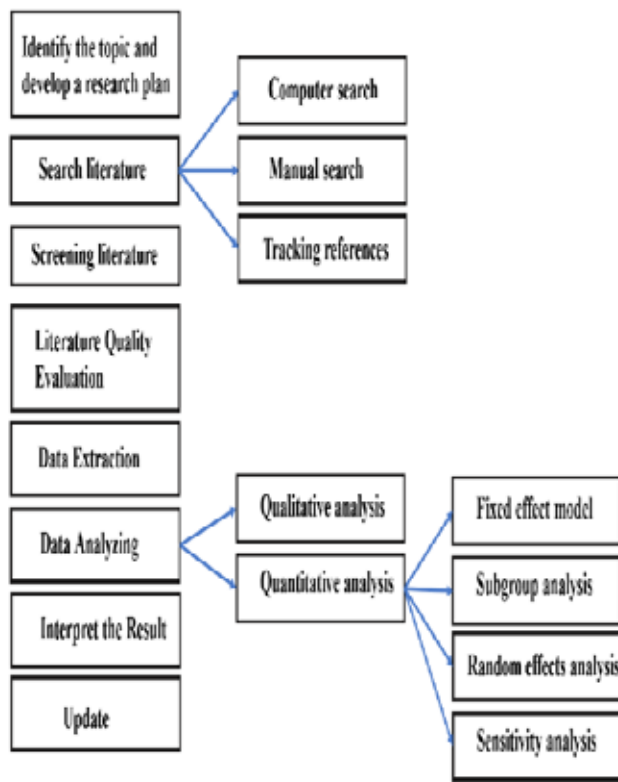


Figure 1 - The General Procedure of Meta-analysis

The reason we used meta-analysis was that in the field of Neuromanagement, people's behavioral experiments are mostly small sample sizes, and the results of these studies are not the same[6]. A single research result might lack credibility due to sample bias. Therefore, we could use the method of meta-analysis to quantitatively synthesize the results of these literatures, which leads to more reliable conclusions. And our purpose was to conduct meta-analysis on the research of emotion distribution of brain and come to a good conclusion and thus support the research of Neuromanagement.

Literature review

We conducted a preliminary literature review in the early stages of the research, summarizing the functions associated with each brain region found so far[7][8][9] as Table 1.

Table 1 - Previous research of the function of different brain regions

Brodmann Area	Main Function
1, 2, 3	Primary Somatosensory Cortex
4	Primary Motor Cortex
5	Somatosensory Association Cortex
6	Premotor cortex and Supplementary Motor Cortex
7	Visuo-Motor Coordination
8	Frontal eye fields
9	Dorsolateral prefrontal cortex
10	Anterior prefrontal cortex
11	Orbitofrontal area
12	Orbitofrontal area
13, 14, 16	Insular cortex
15	Anterior Temporal lobe
17	Primary visual cortex (V1)
18	Secondary visual cortex (V2)
19	Associative visual cortex (V3, V4, V5)
20	Inferior temporal gyrus
21	Middle temporal gyrus
22	Superior temporal gyrus
23	Ventral posterior cingulate cortex
24	Ventral anterior cingulate cortex.
25	Subgenual area
26	Ectosplenial portion of the retrosplenial region of the cerebral cortex
27	Piriform cortex
28	Ventral entorhinal cortex
29	Retrosplenial cingulate cortex
30	Part of cingulate cortex
31	Dorsal Posterior cingulate cortex
32	Dorsal anterior cingulate cortex
33	Part of anterior cingulate cortex
34	Dorsal entorhinal cortex
35, 36	Perirhinal cortex
37	Fusiform gyrus
38	Temporopolar area
39	Angular gyrus
40	Supramarginal gyrus
41, 42	Auditory cortex
43	Primary gustatory cortex
44	Pars opercularis
45	Pars triangularis
46	Dorsolateral prefrontal cortex
47	Pars orbitalis
48	Retrosubicular area

It was also found that there were few relevant findings about emotional intelligence compared to the functions of perceptual classes, and also not many conclusions significant in the academic field[10]. On the other hand, emotional intelligence is an important issue in Neuromanagement. Our subject was mainly concerned with the brain function research of emotional intelligence in Neuromanagement, hoping to find the correlation between human emotional intelligence and the activities of human brain regions, thus creating experimental research on Neuromanagement in the emotional field. With the assistance of neuroimaging technology, for instance, fMRI, it's relatively convenient to figure out the emotional activated areas. fMRI uses magnetic fields and radio frequency waves to detect blood oxygen levels in

different brain regions of the brain, while blood oxygen levels reflect the activity of different brain regions of the brain. Thereby, it is possible to detect the activity of each brain region of the brain when people have different emotional activities. This could make experiment results more direct[11].

Generally, the purpose of meta-analysis is to perform statistical verification of a large number of research results to ensure the correctness of a certain direction. Through previous literature research, we found that traditional meta-analysis is based on the statistical method of effective quantity. However, in our research, we pay more attention to the position information in the field of functional magnetic resonance imaging, so we can use ALE (Activation likelihood estimation) method[12]. This is probably the most common algorithm for coordinate-based meta-analyses. This approach treats activation coordinates or foci reported in neuroimaging studies not as single points, but as spatial probability distributions centered at the given coordinates. ALE maps are then obtained by computing the union of activation probabilities for each voxel. As in other algorithms for quantitative meta-analysis, the differentiation between true convergence of foci and random clustering is tested by a permutation procedure. Here is the procedure for ALE algorithm^[13] as shown in Figure 2:

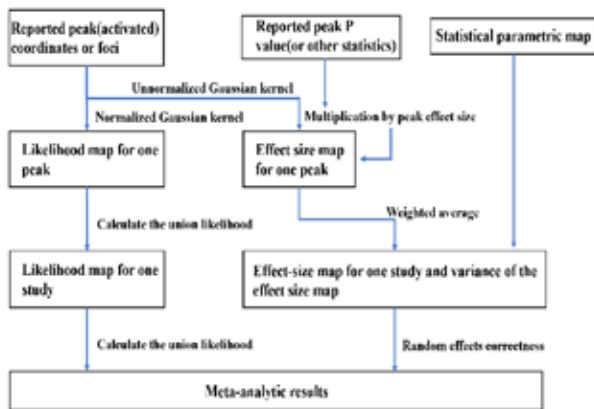


Figure 2 – The Procedure of General ALE Method

ALE has several advantages over traditional qualitative neuroimaging meta-analytic techniques[14]. While using coordinates or foci reported in standard space by individual studies as its input into a meta-analysis, it avoids the arbitrariness of qualitative methods. Also, the coordinates can be converted to make comparison across different standard spaces which just need adjusting the weight of foci. Probability of activation is calculated

based on both individual voxel statistical significance and a minimize cluster size threshold. And we could use some tools to help us execute the process. In Figure 3 we show a trial for ALE image with foci of sadness. The result of ALE is concise.

Method

Data source and tools

BrainMap is a database of published functional and structural neuroimaging experiments with coordinate-based results (x, y, z) in Talairach or MNI space[15]. It is developed at the Research Imaging Institute of the University of Texas Health Science Center San Antonio. It involves three programs: Scribe, Sleuth, and GingerALE. Sleuth is used for searching the database with a variety of filters (in the form of drop-down menus for options like context, subjects, behavioral domain, and paradigm class) and with features to save and export the results. It currently features the (x, y, z) coordinate results of 3406 neuroimaging papers, 111 paradigm classes, 76016 subjects, 16901 experiments and 131598 locations[16]. GingerALE uses the metadata exported into text files by Sleuth to complete ALE analyses, which put out tables of 3-dcoordinates of common activations across studies[17] [18]. For the workspace you want, please contact authors.

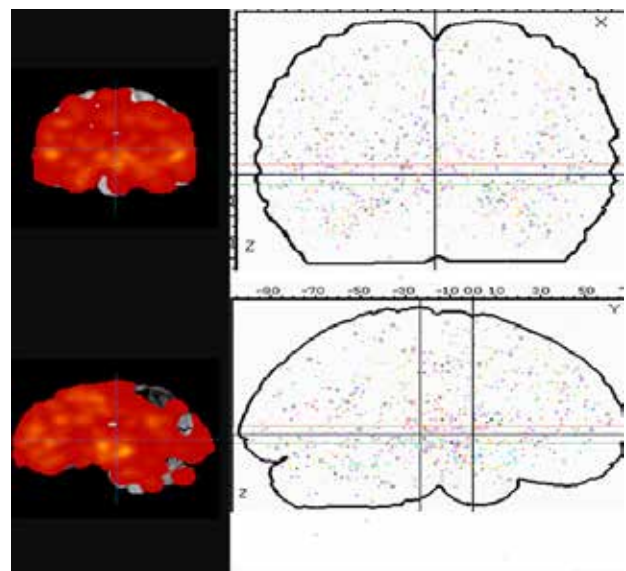


Figure 3 – One Case Using ALE

Processing procedure

First, we selected papers for our meta-analysis by filtering the search keyword through the following procedure:

- 1 normal mapping (ignoring the effects of gender, aging, disease, handedness, drug effects);

- 2 activations only (excluding the deactivations);
- 3 papers with emotion keyword we select (such as anger) and coded as emotion defined in the BrainMap lexicon.

After that, we inquired the data base for the above emotions class available, including anger, anxiety, disgust, embarrassment, fear, guilt, happiness, humor and sadness.

Then we ran separate ALE meta-analyses for sets of (x, y, z) coordinates and generated ALE maps using BrainMap's GingerALE program 2.3.6[19] to identify our meta results and find out the convergent areas of corresponding activation. Activations were arbitrarily regarded as in the same area if all (x, y, z) coordinates were within 6 mm of each other.

When running ALE, the GingerALE provides 4 effective significance threshold method on the ALE scores[20][21], and in this article, we selected these two more adaptive statistics to test significance: (1) Uncorrected P value threshold[22] (with medium samples) ;(2) False discovery rate[23] (FDR pN with large samples).

Results of typical emotions

Anger

The anger search[24] yielded 43 papers, 743 subjects, 109 experiments, 153 conditions, 694 locations. When running ALE²⁵, we set the uncorrected P value at 0.0001 and set the minimum cluster size at level of 200 . The ALE result is showed in Table 2.

Table 2- Anger-related ALE results organized by Brodmann area

Anger					
Lobe	Region	BA	x	y	z
Anterior	Right Culmen	*	40	-54	-20
Frontal	Left Inferior Frontal Gyrus	47	-46	26	-8
	Left Medial Frontal Gyrus	9	0	52	20
	Left Medial Frontal Gyrus	6	0	0	54
	Left Precentral Gyrus	6	-42	-8	46
	Right Inferior Frontal Gyrus	44	56	8	10
Limbic	Right Middle Frontal Gyrus	9	54	20	28
	Left Cingulate Gyrus	24	-2	-4	44
	Right Parahippocampal Gyrus	Amygdala	22	-2	-16
Midbrain	Left Red Nucleus	*	-10	-24	-6
Parietal	Left Precuneus	7	0	-56	36
Sub-lobar	Left Amygdala	*	-20	-10	-12
	Left Insula	13	-40	16	-8
	Left Insula	13	-40	-2	8
	Left Thalamus	*	-4	-8	-2
Temporal	Left Fusiform Gyrus	37	-38	-60	-12
	Left Superior Temporal Gyrus	39	-48	-58	24

3D map as in Figure 4 shows the meta result of direct

distribution of anger activation area.

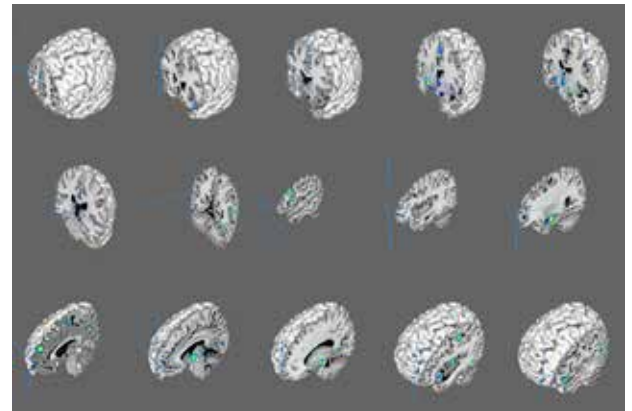


Figure 4 - The Result of Anger ALE Meta-analysis Thresholded 3D Map at Uncorrected P=0.0001

Anxiety

The anxiety search yielded 35 papers, 824 subjects, 96 experiments, 114 conditions, 747 locations. When running ALE, we set the uncorrected P value at 0.0001 and set the minimum cluster size at level of 200 . The ALE result is showed in Table 3.

Table 3 - Anxiety-related ALE results organized by Brodmann area

3D map in Figure 5 shows the meta result of direct distribution of anxiety activation area.

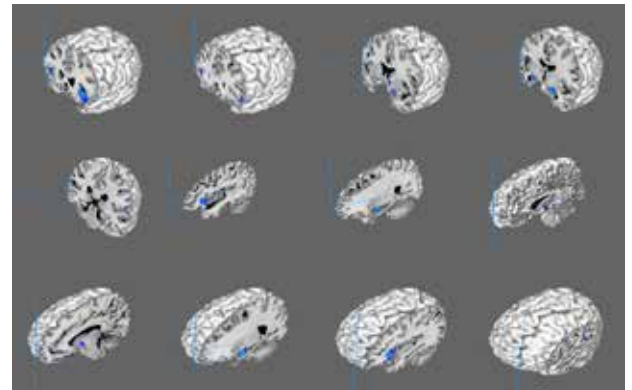


Figure 5 - The Result of Anxiety ALE Meta-analysis Thresholded 3D Map at Uncorrected P=0.0001

Disgust

The disgust search yielded 48 papers, 759 subjects, 123 experiments, 156 conditions, 1040 locations. When running ALE, we set the uncorrected P value at 0.0001 and set the minimum cluster size at level of 200 . The ALE result is showed in Table 4.

3D map in Figure 6 shows the meta result of direct distribution of disgust activation area.

Embarrassment

Table 4 - Disgust-related ALE results organized by Brodmann area

Disgust					
Lobe	Region	BA	x	y	z
Frontal	Right Inferior Frontal Gyrus	9	50	18	18
	Right Middle Frontal Gyrus	46	50	22	18
	Right Middle Frontal Gyrus	46	52	42	14
Limbic	Left Parahippocampal Gyrus	Amygdala	-22	-4	-20
	Right Parahippocampal Gyrus	Amygdala	22	-4	-16
	Left Insula	*	-38	26	-6
Sub-lobar	Left Thalamus	*	-4	-8	-2
	Right Claustrum	*	42	-8	0
	Left Fusiform Gyrus	37	-46	-66	-8

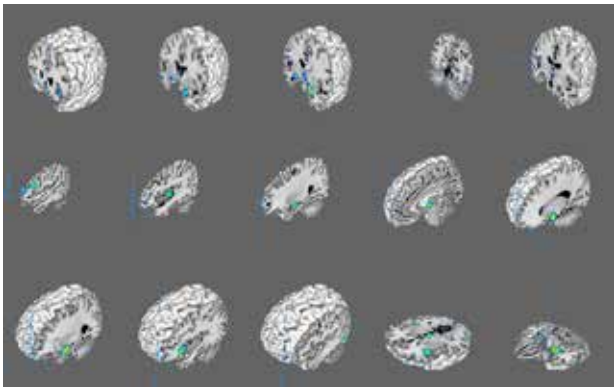


Figure 6 - The Result of Disgust ALE Meta-analysis
Thresholded 3D Map at Uncorrected P=0.0001

The Embarrassment search yielded 13 papers, 301 subjects, 31 experiments, 40 conditions, 238 locations. When running ALE, we set the uncorrected P value at 0.0001 and set the minimum cluster size at level of 200 . The ALE result is showed in Table 5.

Table 5 - Embarrassment-related ALE results organized by Brodmann area

Embarrassment					
Lobe	Region	BA	x	y	z
Frontal	Left Inferior Frontal Gyrus	47	-40	26	-12
	Left Inferior Frontal Gyrus	45	-56	24	8
	Left Medial Frontal Gyrus	9	-6	56	20
	Left Medial Frontal Gyrus	6	-6	10	54
	Right Inferior Frontal Gyrus	46	48	36	6
Sub-lobar	Left Insula	13	-38	24	0
	Left Insula	13	-30	24	6
Temporal	Right Fusiform Gyrus	37	44	-56	-14

3D map in Figure 7 shows the meta result of direct distribution of embarrassment activation area.

Fear

The fear search yielded 89 papers, 1530 subjects, 237 experiments, 285 conditions, 1570 locations. When running ALE, we set the FDR pN value at 0.01 and set the minimum cluster size at level of 200 . The ALE result is

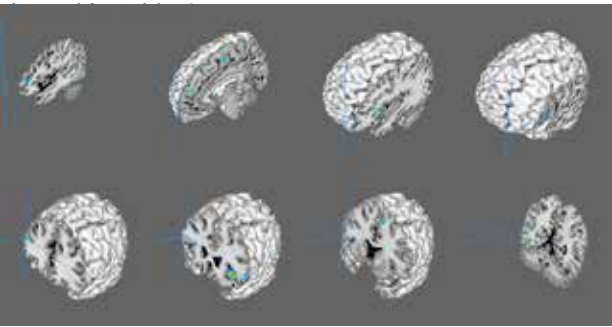


Figure 7 - The Result of Embarrassment ALE Meta-analysis
Thresholded 3D Map at Uncorrected P=0.0001

Table 6 - fear-related ALE results organized by Brodmann area

Fear					
Lobe	Region	BA	x	y	z
Anterior	Right Culmen	*	40	-52	-20
Limbic	Left Anterior Cingulate	*	-10	40	-10
	Left Cingulate Gyrus	32	0	30	28
	Left Parahippocampal Gyrus	Amygdala	-20	-6	-16
	Right Anterior Cingulate	32	4	50	-4
	Right Cingulate Gyrus	32	4	20	40
	Right Parahippocampal Gyrus	Amygdala	24	-6	-16
	Right Parahippocampal Gyrus	34	30	2	-26
Midbrain	Left Red Nucleus	*	-4	-24	-10
Occipital	Right Fusiform Gyrus	19	42	-80	-10
Posterior	Left Declive	*	-36	-60	-14
	Left Declive	*	-32	-70	-10
	Right Declive	*	30	-64	-14
Sub-lobar	Right Insula	13	44	18	-4

3D map in Figure 8 shows the meta result of direct distribution of fear activation area.

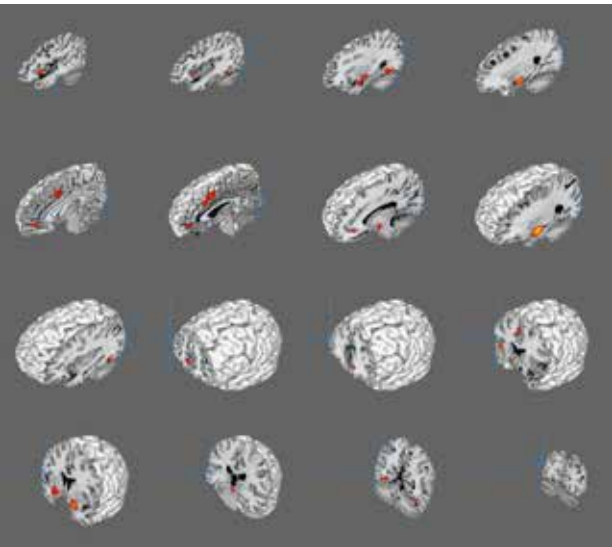


Figure 8 - The Result of Fear ALE Meta-analysis
Thresholded 3D map at FDR pN=0.01

Guilt

The guilt search yielded 16 papers, 392 subjects, 80 experiments, 67 conditions, 590 locations. When running ALE, we set the uncorrected P value at 0.0001 and set the minimum cluster size at level of 200 . The ALE result is showed in Table 7.

Table 7 - guilt-related ALE results organized by Brodmann area

Guilt					
Lobe	Region	BA	x	y	z
Frontal	Left Inferior Frontal Gyrus	45	-38	26	0
	Left Medial Frontal Gyrus	9	-4	52	20
Parietal	Left Precuneus	7	0	-56	36
Temporal	Left Superior Temporal Gyrus	39	-48	-58	24

3D map below in Figure 9 shows the meta result of direct distribution of guilt activation area.

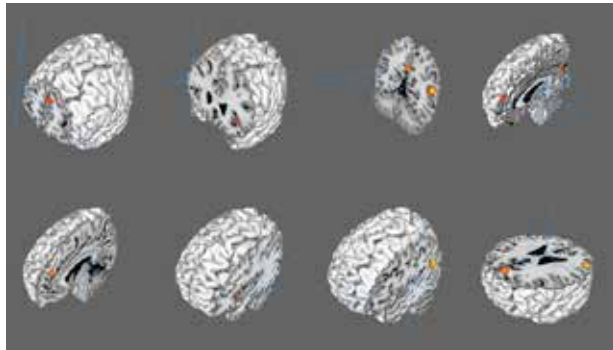


Figure 9 - The Result of Guilt ALE Meta-analysis Thresholded 3D Map at Uncorrected P=0.0001

Happiness

The happiness search yielded 80 papers, 1230 subjects, 184 experiments, 285 conditions, 1334 locations. When running ALE, we set the uncorrected P value at 0.0001 and set the minimum cluster size at level of 200 . The ALE result is showed in Table 8.

3D map below in Figure 10 shows the meta result of direct distribution of happiness activation area.

Humor

The humor search yielded 6 papers, 149 subjects, 33 experiments, 20 conditions, 211 locations. When running ALE, we set the uncorrected P value at 0.0001 and set the minimum cluster size at level of 200 . The ALE result is showed in Table 9.

3D map in Figure 11 shows the meta result of direct distribution of Humor activation area.

Sadness

The sadness search yielded 63 papers, 1000 subjects, 161 experiments, 207 conditions, 1142 locations. When running ALE, we set the FDR pN value at 0.01 and set the minimum cluster size at level of 200 . The ALE result is showed in Table 10.

3D map in Figure 12 shows the meta result of direct distribution of sadness activation area.

Table 8 - happiness-related ALE results organized by Brodmann area

Happiness					
Lobe	Region	BA	x	y	z
Frontal	Right Precentral Gyrus	44	58	10	8
	Right Precentral Gyrus	6	46	-2	42
	Right Inferior Frontal Gyrus	47	46	16	-12
	Right Inferior Frontal Gyrus	47	48	20	-18
	Right Middle Frontal Gyrus	10	42	42	10
Limbic	Right Parahippocampal Gyrus	Amygdala	26	-4	-18
	Left Parahippocampal Gyrus	Amygdala	-22	-6	-16
Midbrain	Left Red Nucleus	*	-2	-26	-8
	Right Mammillary Body	*	4	-8	-12
Occipital	Left Lingual Gyrus	18	-12	-86	0
	Left Lingual Gyrus	18	-22	-82	-6
Sub-lobar	Left Thalamus	*	-4	-6	-2
	Right Lentiform Nucleus	Putamen	24	2	2
	Left Lentiform Nucleus	Lateral	-10	6	-2
		Globus Pallidus			
	Right Thalamus	*	8	-20	0
	Right Lentiform Nucleus	Medial	18	-10	-4
		Globus Pallidus			
	Left Lentiform Nucleus	Putamen	-18	12	-8
	Right Caudate	Caudate	12	24	-6
		Head			
Temporal	Right Superior Temporal Gyrus	41	58	-20	2
	Left Superior Temporal Gyrus	22	-58	-16	2

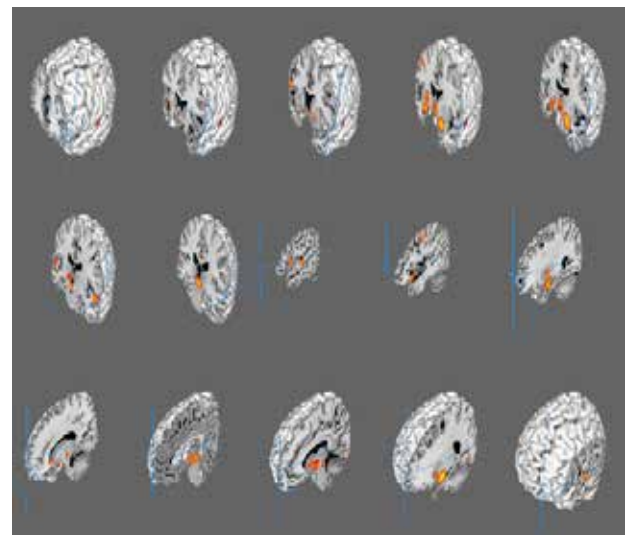


Figure 10 - The Result of Happiness ALE Meta-analysis Thresholded 3D Map at Uncorrected P=0.0001

Discussion

Meta-result of emotional network and structure

From the results, we can first summary that there's unique activation for each emotion. For instance, the unique activation of happiness is (Table 1): Right Precentral Gyrus, Right Mammillary Body, Left Lingual Gyrus, Right Caudate, Right Superior Temporal Gyrus. The unique activation of anger is: Left Precentral Gyrus. The unique activation of anxiety is: Left Mammillary Body, Left Postcentral Gyrus. The unique activation of fear is: Left Anterior Cingulate, Right Anterior Cingulate, Right Cingulate Gyrus, Right Fusiform Gyrus. The unique activation of humor is: Left Culmen, Left Claustrum, Left Middle Temporal Gyrus. And the unique distribution of sadness is Left Superior Frontal Gyrus, Left Extra-Nuclear. Moreover, they share some same important areas such as left and right Inferior Frontal Gyrus.

Table 9 - Humor-related ALE results organized by Brodmann area

Humor					
Lobe	Region	BA	x	y	z
Anterior	Left Culmen	*	-42	-46	-24
Frontal	Left Inferior Frontal Gyrus	47	-46	26	-12
Limbic	Left Parahippocampal Gyrus	34	-20	-2	-18
	Right Parahippocampal Gyrus	Amygdala	22	-2	-16
Posterior	Left Declive	*	-50	-74	-16
	Right Declive	*	8	-88	-22
	Right Declive	*	32	-62	-16
Sub-lobar	Left Claustrum	*	-34	12	-4
Temporall	Left Thalamus	Ventral Posterior Lateral Nucleus	-18	-20	8
	Right Claustrum	*	38	6	-8
	Right Thalamus	Medial Dorsal Nucleus	6	-12	6
	Right Thalamus	Medial Dorsal Nucleus	4	-18	6
	Left Middle Temporal Gyrus	*	-48	-38	-4
	Left Middle Temporal Gyrus	21	-58	2	-26
	Right Fusiform Gyrus	37	34	-48	-16

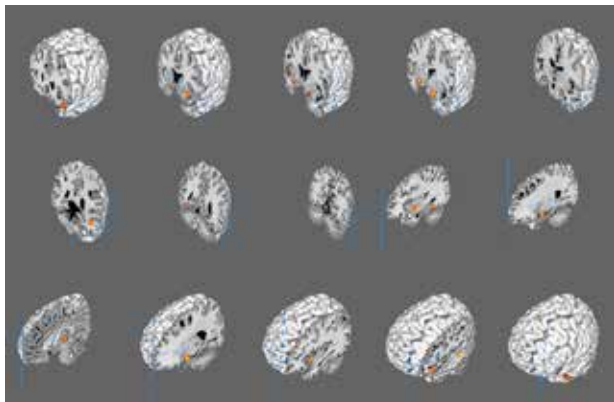


Figure 11 - The Result of Humor ALE Meta-analysis
Thresholded 3D Map at Uncorrected P=0.0001

Furthermore, we divided our selected emotions into two categories: Negative and Positive. And run ALE on these two big categories to furtherly compare the emotion mechanism and neuro distribution. However, the search results on negative emotional behavior are far more than the positive ones so that the effect is not so good as shown in Table 12 and Figure 13. Regardless of the amount bias, we can still find that their distributions show an initial significant difference. The negative ones tend to be activated in Left Insula of Sub-lobar Gray Matter which could be taken as Brodmann area 13 and in Left Middle Frontal Gyrus of Frontal Lobe Gray Matter which can be taken as Brodmann area 46 along with Left Precentral Gyrus of Frontal Lobe Gray Matter taken as Brodmann area 6.

The positive ones tend to appear in Right Cingulate Gyrus of Frontal Lobe Gray Matter taken as Brodmann area 32. Amygdala and Medial Dorsal Nucleus also have strong activations along with Right Medial Frontal Gyrus of Frontal Lobe Gray Matter taken as Brodmann area 9. However, we cannot deny that all of these emotions, either negative or positive, have some same activation areas. Are these areas central pivot of dealing and producing all emotions? Or they are just one part of the reaction chains to produce brain emotional response? Maybe, but this could only be seen as one initial infer and need long-time updating. More experiments and data are preferred in our further research[26].

Table 10 - Sadness-related ALE results organized by Brodmann area

Sadness					
Lobe	Region	BA	x	y	z
Frontal	Left Inferior Frontal Gyrus	47	-38	30	-14
	Left Inferior Frontal Gyrus	47	-34	22	-14
	Left Superior Frontal Gyrus	6	0	14	56
	Right Inferior Frontal Gyrus	47	44	22	-16
	Right Medial Frontal Gyrus	9	4	54	22
Limbic	Left Parahippocampal Gyrus	Amygdala	-22	-6	-18
	Right Parahippocampal Gyrus	Amygdala	20	-6	-16
Sub-lobar	Left Extra-Nuclear	13	-30	18	-16
	Left Insula	13	-38	22	0
	Left Thalamus	*	-2	-8	0
	Right Insula	13	48	18	-6
	Right Lenticiform Nucleus	Putamen	24	10	-16

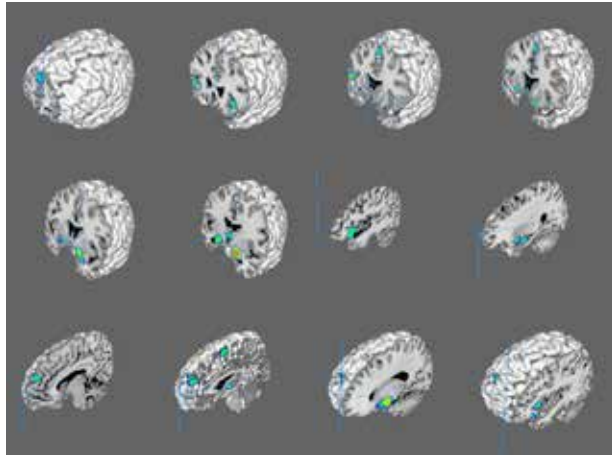


Figure 12 - The Result of Sadness ALE Meta-analysis
Thresholded 3D Map at FDR $pN=0.01$

Table 11 – Unique activation of each emotions

Category of emotions	Unique activation areas
Happiness	Right Precentral Gyrus, Right Mammillary Body, Left Lingual Gyrus, Right Caudate, Right Superior Temporal Gyrus
Anger	Left Precentral Gyrus
Anxiety	Left Mammillary Body, Left Post-central Gyrus
Disgust	*
Embarrassment	*
Fear	Left Anterior Cingulate, Right Anterior Cingulate, Right Cingulate Gyrus, Right Fusiform Gyrus
Humor	Left Culmen, Left Claustrum, Left Middle Temporal Gyrus
Sadness	Left Superior Frontal Gyrus, Left Extra-Nuclear
Guilt	*

As further extensions, there are two main theories about emotional mechanisms[27]: one is localism and the other is psychological architectism. The former believes that all kinds of emotions, such as happiness, fear, anger, sadness, etc., are responsible for a specific region of the brain or a specific group of regions and can be repetitively activated; while psychological constructivism believes that these separate emotional categories don't exist, and emotions are generated based on a more basic psychological activity, formed through a complex brain neural network. Our research provides evidence for both two theories. But the brain structure is so complicated and furthermore research and evidence are needed.

Application on neuromanagement

As brain emotional response plays a great role in Neuromanagement[1], with our initial results, we can decide to focus on which specific areas to track people's brain activity and interpreting their psychological states and thus make more efficient strategies. We can also collect these biological data from device users and analyze these data to better understand the market. Moreover, we can impact people through legal method which can indirectly activate their specific brain areas. For instance, if we can verify that one kind of no-harm magnetic wave could have some stimulations on those areas which is related to happiness in our research, then we can apply this to many situations such as treating depressive disorder and marketing reinforcement[2]. We expect to find the correlation between human emotional intelligence and the activities of human brain regions, thus creating a new objective basis for the experimental research of Neuromanagement in the emotional field.

Table 12.1 – Part of Summary ALE results for positive emotions

Positive					
Lobe	Region	BA	x	y	z
Frontal	Left Inferior Frontal Gyrus	47	-48	26	-8
	Left Inferior Frontal Gyrus	9	-44	6	30
	Left Medial Frontal Gyrus	6	-4	12	54
	Left Medial Frontal Gyrus	9	-2	54	22
	Left Medial Frontal Gyrus	6	0	-2	54
	Left Medial Frontal Gyrus	9	-4	58	12
	Left Middle Frontal Gyrus	10	-34	50	12
	Right Cingulate Gyrus	32	6	22	32
	Right Inferior Frontal Gyrus	45	52	30	-4
	Right Inferior Frontal Gyrus	9	46	8	26
	Right Medial Frontal Gyrus	*	0	54	-8
	Right Medial Frontal Gyrus	6	4	20	46
	Right Medial Frontal Gyrus	9	4	54	24
	Right Middle Frontal Gyrus	46	46	42	16
	Right Middle Frontal Gyrus	46	44	32	20
Limbic	Left Anterior Cingulate	32	-2	38	-12
	Left Anterior Cingulate	32	0	40	6
	Left Cingulate Gyrus	32	0	30	32
	Left Cingulate Gyrus	23	2	-26	34
	Left Parahippocampal Gyrus	Amygdala	-22	-4	-16
	Left Posterior Cingulate	31	-6	-56	24
	Right Parahippocampal Gyrus	Amygdala	24	-2	-16
	Right Parahippocampal Gyrus	28	24	-22	-10
Midbrain	Left Red Nucleus	Red Nucleus	-2	-26	-6
	Right Red Nucleus	Red Nucleus	6	-20	-10

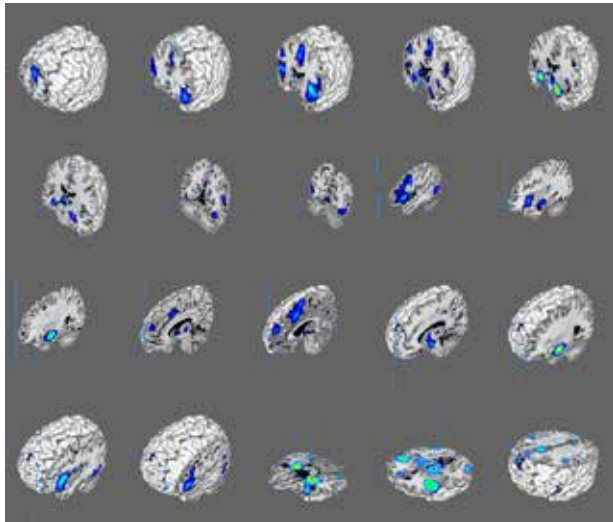


Figure 13.1 - Negative ALE map at FDR pN=0.01

Table 12.2 – Part of Summary ALE results for negative emotions

Negative					
Lobe	Region	BA	x	y	z
Frontal	Left Fusiform Gyrus	37	-40	-60	-14
	Left Inferior Occipital Gyrus	19	-42	-76	-2
	Left Medial Frontal Gyrus	8	2	30	42
	Left Middle Frontal Gyrus	6	-42	12	42
	Left Middle Occipital Gyrus	19	-42	-78	12
	Left Middle Temporal Gyrus	*	-58	-36	0
	Left Middle Temporal Gyrus	22	-52	-44	4
	Right *	Substantia Nigra	20	-24	-10
	Right Cingulate Gyrus	32	4	20	38
	Right Culmen	*	40	-52	-22
	Right Declive	*	30	-64	-14
	Right Fusiform Gyrus	37	46	-64	-12
	Right Inferior Frontal Gyrus	46	52	34	6
	Right Inferior Occipital Gyrus	19	44	-78	-8
	Right Insula	*	38	22	-4
	Right Insula	13	44	22	-6
	Right Thalamus	Medial Dorsal Nucleus	8	-18	2
Limbic	Left Cingulate Gyrus	24	-6	18	28
	Left Cingulate Gyrus	32	2	24	36
	Left Cingulate Gyrus	31	0	-58	34
	Left Cingulate Gyrus	32	0	26	32
	Left Cingulate Gyrus	32	-6	22	40
	Left Fusiform Gyrus	37	-46	-66	-8
	Left Lentiform Nucleus	Medial Globus Pallidus	-10	4	-2
	Left Medial Frontal Gyrus	32	-6	18	42
	Left Medial Frontal Gyrus	9	-4	54	18
	Left Medial Frontal Gyrus	9	-6	54	18
	Left Medial Frontal Gyrus	6	-4	8	54
	Left Medial Frontal Gyrus				

Summary and future work

In this article, our results came from the fMRI observations, which has been used for many years. It's definitely reliable but, it also has many shortcomings. The time resolution of fMRI is not so good, and it has unignorable latency which can lead to any mistakes and impede some of our conclusions. Meanwhile, the imaging of fMRI performs not so well in deep stratum and sometimes lacks accuracy. With more experiments and results brought into our research, we can consider using more advanced neuroimaging technology to get more reliable outcomes in our meta-analysis.

Also, for emotional response, human beings' emotion is usually complicated and most probably includes many different and vague emotions. Happiness is usually accompanied by many other slight emotions. In experiments, the border of different emotions is obscured. Is sadness really just sadness? This is a big issue in the exploration of emotional intelligence. It seems that it's impossible to separate emotions thoroughly, and without new method, the border of emotions would be obscure in many cases. This is also what we can further research.

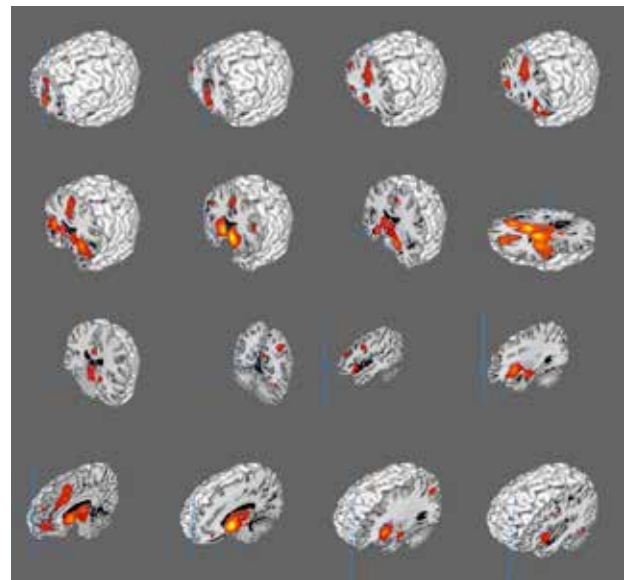


Figure 13.2 - Positive ALE map at FDR pN=0.01

Meanwhile, for different emotions, number of research results is not the same. Due to this, in the aspect of statistical efficiency, those conclusions of different emotion with more verified papers and experiments are definitely more convincing. How to deal with the bias generated by research amounts is also what we need to further explore. And the time validation is also worth consideration. Such as one paper or experiment in year

2000 and another paper or experiment in year 2019 both researching the activation of happiness, which should be more reliable to use? Many factors would impact our samples and we need to set up one efficient standard.

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The Application of Information Network for Health Poverty Alleviation

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Abstract

Health poverty alleviation is aimed to help the poor be able to treat with illness, and avoid people being gotten into the trouble of greater living burden, which is a long-term, difficult and important project. It's a question worthy of further investigation that how to make good use of the development of information network in big data environment, and take effective measures to improve the level of medical service capacity in poverty-stricken areas, and therefore improve the health level of the rural poor comprehensively. This paper expounds the cyclical relationship between poverty and health, and analyzes the application of information network in China's existing health poverty alleviation. On this basis, the development directions of health poverty alleviation based on information network are proposed and discussed from the following four aspects: Using information network to optimize medical resources and reduce medical expenses; establishing a dynamic monitoring system for the work of health poverty alleviation; providing accurate poverty alleviation programs for sick and needy families based on big data analysis; and attracting and guiding more social forces to participate in the health poverty alleviation program.

Keywords

Health poverty alleviation, information network

Introduction

Health alleviation is aimed to improve the level of medical security, medical service capabilities, and strengthen public health services, so that the poor can be able to prevent the disease, pay for treatment, and be rescued if they are seriously ill. Implementing a health poverty alleviation project will provide basic medical and health services for the rural poor, prevent poverty due to illness, and prevent people returning to poverty due to illness. The development of information network in big data environment can help to further strengthen overall coordination and resource integration, take effective measures to improve the medical security level of the rural poor and the health care service capacity of poor areas, and comprehensively improve the health of the rural poor.

The cyclical relationship between poverty and health

Many scholars have explored the relationship between health and poverty. Once poor households suffer from diseases, diseases become a huge burden for them. People in poverty are unable to escape poverty due to lack of rights, and poverty makes them more difficult to obtain these rights, so they fall into a vicious circle. Guoxiang Wang(2007) and Yanming Wang(2009) did an empirical analysis of the impact of health on the incidence of personal poverty respectively, both absolute and relative poverty indicators indicated a negative correlation between the two [1][2]. Qiumei Hong(2010) studied the negative impact of health shocks on static and dynamic poverty from both theoretical and empirical aspects[3].

Yu Zhang(2016) used CHNS data, simultaneous equation panel model, and the three-stage least squares method to study the relationship between poverty and health of rural residents in China. The study found that rural residents had a cyclical relationship between poverty and health, that is, the worse the health status, the greater the probability of falling into poverty; the poverty will make the health worse[4]. Xiaoyan Xu(2018) raised the concept of poverty-illness trap, analyzed the process of it from dynamic and periodical aspect, and recognized the specific damage of disease and poverty at different stages [5]. According to the existing literature, this paper summarizes the cycle-effect mechanism of disease-health as follows.

Illness caused by poverty

Illness caused by poverty means the deterioration of health caused by poverty, and its main mechanism is as follows:

First, rural poor groups often have fixed behavioral norms and values, but due to the low level of education and limited cultural knowledge, it is easy for them to develop some unscientific eating habits. At the same time, there are few channels for information acquisition, resulting lack of knowledge about health care and how to choose healthy lifestyles, and lack of awareness and conditions to actively prevent diseases (such as regular medical examinations). In addition, due to the limited economic conditions, malnutrition and uneven diet are likely to occur, which also increases the risk of illness.

Second, due to the low level of education, the poor groups have limited job choices and they are engaged in manual labor. For the sake of livelihood, many people also have to work in harsh environments. In the second season of the documentary "The Life", there is an episode introducing pneumoconiosis patients. In the lung transplant center of Wuxi People's Hospital, the largest group of lung transplants in China, the filming group took 234 days and contacted 18 patients with pneumoconiosis. These pneumoconiosis patients used to be coal miners, stone carving workers, and gold miners. Most of them have family difficulties, and some people are still working even

before surgery. They have to do it for their livelihood, and they inhale dust for a long time, eventually leading to disease.

Third, once the rural poor are sick, some are afraid to see a doctor, some think that they have no problem and will be better in some time, and some use the more ignorant method to deal with it at first. Coupled with the limited medical resources they can obtain, they often do not see a doctor according to their state of illness, but their economic affordability. As a result, it is easy for a small disease to become a serious and even incurable illness.

Fourth, rural poor groups are also prone to psychological problems. Rural poor groups are marginal groups in terms of social status and economy, and are prone to loss, depression, loneliness and other psychological distress. The psychological burden of long-term overweight also affects the body's function and makes it easier to get sick.

Poverty caused by illness

The rural poor have low incomes but they need to afford high medical expenses once they are sick, which results poverty caused by illness. The impact of poverty caused by illness is pretty huge, not only on the patients themselves, but also on their relatives, even their friends who have economic relationship with them.

First, there is increase in medical expenditure. In addition to the narrow expenses for medical treatment and hospitalization, the specific medical treatment expense also includes a series of general expenses related to treatment behaviors such as transportation expenses, nutrition expenses, family accommodation expenses, rehabilitation expenses, and health care products. Second, there is reduction in direct labor income. This is divided into three situations: The first is the reduction in short-term labor income that patients cannot engage in when they are sick. The second is that patients with chronic diseases can not be engaged in labor activities for a long time. The third is that if the patient loses part or all of his or her self-care ability, he/she needs to be taken care of by his/her families, which reduces the labor income from the family member who takes care of the patient. This is the most serious situation.

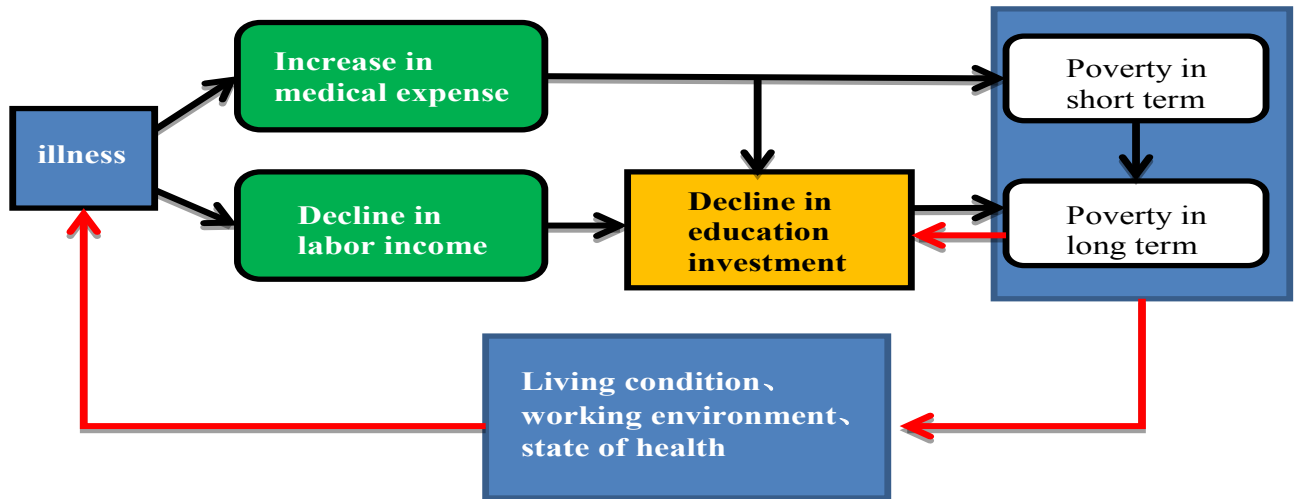


Figure 1 - The Cyclical Relationship between Poverty and Health

In the case of increased medical spending and a decline in direct labor income, these households tend to reduce their educational investment in themselves or their children. Because of illness and poverty, it is difficult for such a family to rely on their own status quo, it is difficult to guarantee the material capital of the next generation to obtain the basic work threshold, resulting in the lack of income acquisition capacity, thus entering a state of long-term poverty. In addition, the impact of disease on a family, in addition to the reduction of physical capital, also brings a great psychological burden on the spiritual level. In Lowyck's research, he pointed out that rural family members' long-term care for patients can cause problems such as depression, which will have a negative impact on family life.

According to the above analysis, the main influencing factors of health and poverty and its cyclical impact mechanism can be summarized as shown in Figure 1. The increase in medical expenditures caused by diseases can lead to short-term poverty, and the reduction in labor income will lead to a reduction in health investment and investment in education, leading to long-term poverty. Long-term poverty, in turn, leads to a reduction in health investment and investment in education, and affects living conditions, occupational environment, and physical condition, which in turn leads to an increased risk of illness. This forms a vicious circle.

The situation of poverty and health

As is shown in figure 2[6], in terms of the current distribution of extremely poor people in the global region, Africa is still the continent with the largest proportion of the world's extremely poor. Especially in sub-Saharan Africa, the proportion of extremely poor people still exceeds 40%. At the same time, we know that in these poor areas, there are many infectious diseases, and the proportion of people died from illness is pretty high.

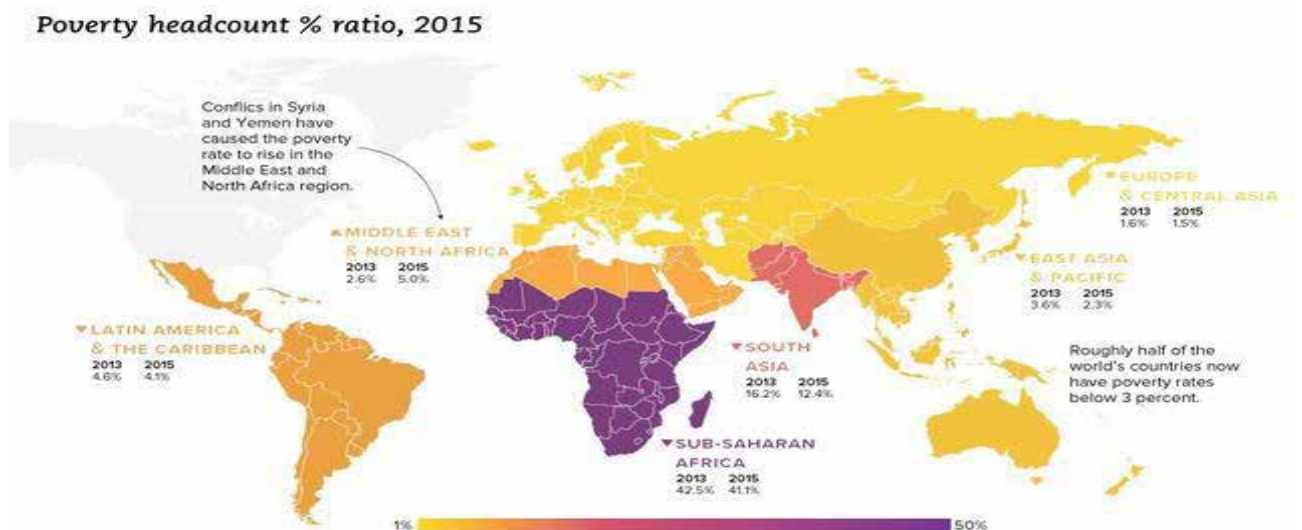


Figure 2 - Poverty Headcount % Ratio, 2015

According to the report of Chinese National Bureau of Statistics, the situations of rural medical and health care in China are shown as from Figure 3 to Figure 6.

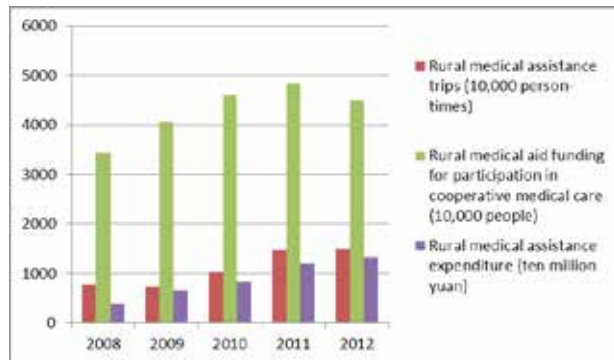


Figure 3 - Yearly Rural Medical Assistance in China

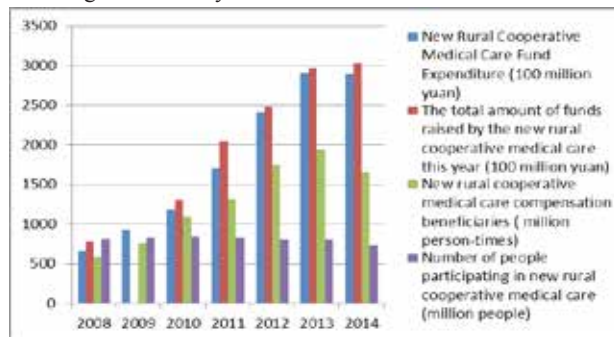


Figure 4 - New Rural Cooperative Medical Care in China

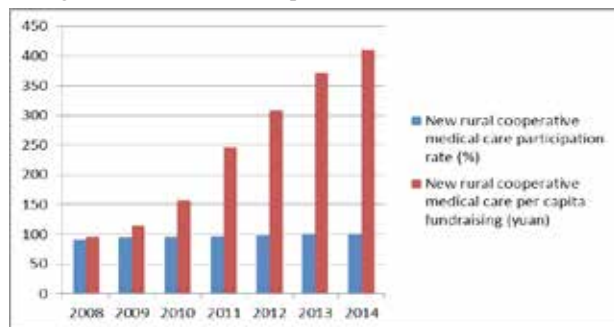


Figure 5 - New Rural Cooperative Medical Care per Capita Fundraising in China

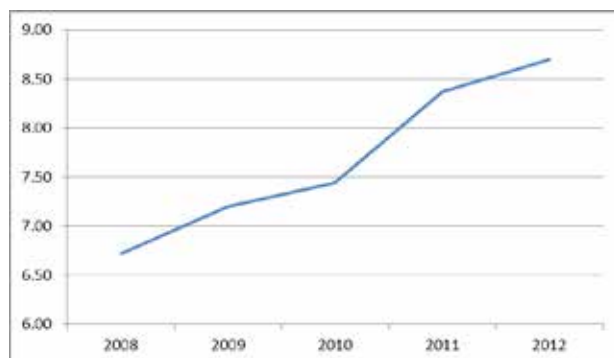


Figure 6 - The Proportion of Health Care Consumption per Capita of Rural Households in Their Total Consumption Expenditure in China

From Figure 3 to Figure 6, we can see that yearly medical assistance expenditure, number of people participating in new rural cooperative medical care and the proportion of health care consumption per capita (RMB) of rural households in their total consumption expenditure (RMB) have increased year by year. The residents' willingness to consume and their spending power have increased significantly, reflecting the growing awareness of residents' health care as income continues to grow. There are more and more people benefit from the medical assistance from the Chinese government and society.

As for China, according to the latest survey conducted by the Chinese State Council Poverty Alleviation Office, the main cause of poverty among the more than 70 million poor farmers in the country is sickness, and the proportion of poverty caused by illness accounts for 42%. According to the data released by the Information Office of the State Council of China, the poverty-stricken achievements of poverty alleviation and poverty alleviation due to illness accounted for 44.1% of the total poor population, and the poverty-stricken and returning poverty-affected families affected 5.53 million households. To nearly 20 million people, the number of people with major and chronic diseases was 7.34 million, accounting for 36.7%. In 2016, the proportion of people suffering from poverty was 44%, and the number of rural poor was 43.35 million, a decrease of 12.4 million from 2015. By the end of 2017, the number of poor and poor households due to illness was 3.882 million, the number of poor people involved was 8.516 million, and the number of poor and poor households due to illness was reduced by nearly half. The fight against poverty has been sustained and the effect is remarkable. Comprehensive policy and multi-pronged measures will be carried out to make up for all kinds of shortcomings and build a healthy foundation for the revitalization of rural areas in poverty-stricken areas.

Application of information network for health poverty alleviation

On June 6, 2018, the ministry of industry and information technology of China issued the "implementation plan on promoting online poverty alleviation (2018-2020)", which clearly proposed to further focus on the deep poverty-stricken areas, and to help achieve targeted poverty alleviation by implementing "Internet + health poverty alleviation", strengthening the development and application of targeted poverty alleviation platform and other means in China. The application of

information network technology in the field of health poverty alleviation has attracted people's attention. For instance, big data platform and Internet public welfare crowdfunding are representative means of online health poverty alleviation.

With the advent of the era of big data, the integration of new concepts and technologies of big data into the field of medical and health care will promote great reform of the health and medical service industry [7][8]. In the field of health poverty alleviation, especially in the area of precision poverty alleviation, big data has unique advantages and huge development prospects. In China, some provinces and cities have tried to build the big data platform for health and poverty alleviation.

For example, Gansu Province, relying on the provincial health information platform for the whole people and connecting with the Gansu Provincial Precision Poverty Alleviation Database, has established the big data platform of Health Poverty Alleviation [9]. The whole system includes the process of "health management -- classified poverty alleviation management -- diagnosis and treatment cost management -- medical insurance reimbursement supervision -- poverty risk warning -- comprehensive evaluation of health poverty state". This big data platform in Gansu Province is designed mainly from the three angles of medical care, medical insurance and medicine to precisely manage the poor people caused by illness, thus forming the "three medical linkage" management model, and the implementation process management of the key health and poverty alleviation policy has been taken into account. Moreover, the "three pressure" evaluation system of health stress assessment, poverty stress assessment and poverty relief work stress assessment is constructed. Through this platform, the "three-dimensional" accurate positioning of the poor population can be achieved by timely obtaining the historical medical records, health conditions and other information. Through regional inquiry, data collection, case inquiry and other functions, the disease status of the poor can be mastered in real time, and the classified treatment in batches can be scientifically implemented. The establishment of this big data platform not only provides information support for the health and poverty alleviation work of the health administration department, but also provides high-quality health management services for the poor in Gansu Province.

Ningxia Hui Autonomous region also carried out the

exploration and practice of Internet + precision health poverty alleviation model [10]. Ningxia uses information such as "Internet plus", "big data of health and medical" to refine the strategy of precise health poverty alleviation to precise identification, accurate management and precise assistance. The Government has ensured the successful implementation of the model by ensuring the full coverage of rural network facilities, the establishment of a dynamic database on poverty alleviation and the strengthening of information skills training for poor rural households. In addition, a series of medical assistance measures have been implemented for impoverished people who are impoverished due to illness. According to the information released by the Autonomous region's Health and Family Planning Commission, by the end of June 2017, targeted health poverty alleviation has achieved certain results. The proportion of people who have been rescued in the whole region to all people in need of treatment was 64.87%. The cost of self-paid medical treatment was reduced, and the reimbursement rate of medical insurance was above 60%.

Another kind of popular network technology applied in the area of health poverty alleviation is the Internet public welfare crowdfunding, which refers to online platforms that provides online help, online fund-raising, project implementation feedback, public supervision, and other one-stop public services[11]. The sponsors of a public service project are required to issue and raise funds under the supervision of a third party foundation with a public offering qualification, and to inform the public of where to raise the funds. Internet commonweal funding has the characteristics of wide coverage, fast communication, strong interaction, timely feedback, transparency and so on[10], which has played a significant role in targeted poverty alleviation.

In 2016, the birth of "water drop funding" initiated the zero-fee mode of Internet serious illness fundraising, and promoted the free crowdfunding activities for the common people in China [12]. "Water drop funding" was originally created to help more people with economic difficulties, so as to realize the vision of helping the seriously ill people and fulfilling small dreams. In the first year since its launch, "water drop funding" has helped more than 40,000 families of patients with serious diseases raise money for medical treatment, and more than 20 million users have donated. However, platforms such as "water drop funding" are confronted with problems such as lagging legal supervision, imperfect relevant laws

and regulations, and immature operation mode, which make the Internet public welfare crowdfunding industry face risks in the fields of credit, fund management and regulatory [13]. The intervention of relevant government departments can standardize Internet public welfare crowdfunding to a certain extent and give full play to the positive role of this means.

Hubei Province Charity Federation, in cooperation with the Internet fundraising Information platform designated by the Ministry of Civil Affairs, "Public Interest Treasure", launched the "Charitable Medical crowdfunding" project [14]. Relying on the WeChat public platform of the Hubei Provincial Charity Federation, patients can enter "medical help" through this platform on the mobile phone, complete uploading information to submit applications, and "initiate help" after approval. The applicants retweet their WeChat circle of friends and so on to raise money (charity enterprises can make matching donations). All fund-raising will go to the account of Hubei Charity Federation, which will eventually be used for the applicants' medical treatment. The charity medical crowdfunding project embodies the characteristics of convenience, quickness, timeliness and standardization, and has achieved certain results. As of September 1, 2018, 140 hospitals in the province have signed project cooperation agreements. Of these, 56 hospitals have realized automatic docking of the project, benefiting 2021 seriously ill patients, and the number of donations has reached 315000. A total of 14.15 million yuan has been raised. The per capita amount of money raised was 7003 yuan.

Development direction of health poverty alleviation based on information network

Health poverty alleviation is a long-term and arduous task. On the one hand, it is necessary to solve the problem of health maintenance and disease treatment for poverty alleviation under the constraints of government financial input, better guide the participation of social forces, and build a sustainable development mechanism for health poverty alleviation. Modern information network has great application potential and spillover effect to solve above problems. The main development directions and specific plans of health poverty alleviation based on information network are as follows:

- (1) An important factor in poverty due to illness is the high cost of medical care and the unreasonable distribution of medical resources. Therefore, the information network can be used to solve

the problem of difficulty and expensiveness of medical treatment. Establish a patient electronic database, open a data resource sharing channel, and realize medical image, inspection and test results, medication records and other information materials shared among various medical institutions, and realize real-time dynamic update of electronic medical records, which can reduce treatment costs. For example, the United States has helped the government to reduce medical errors and reduce redundant inspections by building a shared electronic medical record database, saving one-third of the national medical costs each year, equivalent to 5.3% of GDP [15]. The use of information networks to optimize the allocation of medical resources can be based on big data analysis, rationally increase the rural medical and health service centers, and provide effective and convenient health consultation and initial disease diagnosis for the poor. For example, if according to big data analysis, the incidence of certain diseases in some region is high, a health service center should be set up in conjunction with local geography, population, transportation and other information, focusing on prevention and publicity of related diseases, providing science services, and conducting health education. At the same time, medical and health services can be diagnosed and treated for common diseases and frequently-occurring diseases. It is not necessary to go to a large hospital for minor illnesses, which can effectively reduce the cost of medical care.

- (2) Establish the National Health Poverty Alleviation Data Collection System to realize the data collection and digital management of the family and personnel information of the rural poverty-stricken population due to poverty caused by illness and returning to poverty due to illness. Accurately connect the data of the Poverty Alleviation Office and the health system, compare and check the verification, and track the information of the families who are "poor due to illness and return to poverty due to illness", and monitor the health and poverty alleviation dynamically.
- (3) Based on health poverty alleviation data, combined with local geography, humanities, economics, medical care, industry, employment and other

information, conduct big data analysis, formulate guidelines for macroeconomic regulation and systematic policy support measures.

- (4) With the development of information network and the formation of a big data environment, medical consumption have enabled the poor and sick families to acquire new opportunities for creating value and increasing income for themselves and their family members. The medical data have many values and significance for medical research, drug development, and insurance product design, and should fully explore and utilize its commercial value.
- (5) Make full use of the information network platform to guide the participation of social forces. For example, the Internet public welfare crowdfunding platform has promoted the popularization of free crowd funding activities to help more poor families solve the problem of not seeing a disease. In the future development, big data analysis and other means should be used to optimize the middle links of the micro-crowdfunding projects of application, initiation, dissemination, review and withdrawal, and introduce big data platform and credit system to prevent fraud and better carry out the whole process. In addition, the promotion of the information network platform can also help family members who are “poor and returning to poverty due to illness” to find more employment opportunities. For example, some poor patients cannot be engaged in physical labor, and their relatives taking care of them does not have time to go out for physical labor, they can combine their local characteristics to conduct e-commerce activities and earn income.

Summary

Health poverty alleviation is a long-term, difficult and important project. In the context of big data environment, we should make good use of information network, optimize medical resources, reduce medical expenses, establish dynamic monitoring of health poverty alleviation data systems, and provide accurate poverty alleviation programs for poor families based on big data analysis to guide social forces and take effective measures. Government should take measures to improve the medical security level of the rural poor and the ability of medical and health services in poverty-stricken areas, comprehensively improve the

health level of the rural poor. This paper proposes the development directions of health poverty alleviation based on information network and discuss it from the following four aspects: using information network to optimize medical resources and reduce medical expenses; establishing dynamic monitoring system for the work of health poverty alleviation; providing accurate poverty alleviation programs for sick and needy families based on big data analysis; and attracting and guiding more social forces to participate in the health poverty alleviation program, which provides theoretical guideline for health poverty alleviation.

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Precision Fitness for the Elderly Based on Artificial Intelligence Technology

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Abstract

With the advent of aging society, it has become an important task for public service of government that strengthen the health and resist diseases of the elderly through fitness activities. The fitness activities of the elderly have strong personal characteristics, so it is necessary to carry out appropriate fitness activities according to their physical conditions and available fitness resources. The development of artificial intelligence is an intelligent way to solve the relevant problems and to achieve precision fitness. Through literature analysis and survey data, this paper expounds the physiological and psychological effects of fitness on the elderly, and analyzes the characteristics and demands of fitness for the elderly. On the basis of this analysis, we designed an intelligent public service system solution for the elderly to accurately exercise, and this paper also make the following discussion: artificial intelligence technology for intelligent customization of personalized exercise prescriptions; intelligent guidance of social fitness services; the application in the intelligent matching of public fitness resources. All these provide new ideas and countermeasures for the development of public fitness services for the elderly in the age of intelligence.

Keywords

Artificial intelligence, elderly health, precision fitness, public service

Introduction

According to data released by the United Nations, as of June 2017, the total population of the world has reached 7.6 billion, of which the population aged 60 and over is about 962 million, accounting to 12.8% of the global population. By 2050, the total population of the world will reach 9.8 billion, of which about 3.1 billion will be aged 60 and above, and the proportion of the total population will rise to 31.6%[1]. The problem of aging has become a serious problem facing the world and will have a serious impact on economic development, social security and family burden. Aging has become a serious problem in the world, which will have a serious impact on economic development, social security and family burden. It has become an important task of the government's public service to improve the health of the elderly and their resistance to diseases through fitness activities, and to alleviate the pressure of aging on society.

The fitness activities of the elderly have strong individual characteristics. The fitness activities must be carried out according to their physical condition and available fitness resources. Although the current physical fitness facilities in China have been perfected, the elderly are only the initial stage of health. The elderly do not have professional and correct physical knowledge of physical fitness. For the average elderly, their understanding of physical fitness only stays involved, and there is no specific physical fitness knowledge. Some elderly people confuse the consumption of housework and the consumption of sports, which greatly hinders the elderly in China to carry out recreational activities.

Secondly, because the elderly do not pay attention to the scientific nature of physical fitness[2]. They always do unscientific physical fitness without depending on their physical condition, and may even affect their health. The development of artificial intelligence technology provides

an intelligent means for solving the above problems and realizing precision fitness. Artificial intelligence is equal to double brain fusion. Artificial intelligence promotes innovative research and development in the traditional fitness industry, and advance traditional industry's innovative development. With precision intelligence as the core of precision fitness, innovation is a necessary means of current social development.

Fitness needs of the elderly

The influence of fitness for elderly

For the elderly, Physical fitness is a Physical Activity(PA) that beneficial to body health and Bodybuilding. The PA is refers to physical activity caused by the energy consumption and results in energy consumption, which divided into anaerobic exercise and aerobic exercise. Anaerobic exercise, such as running, weight lifting, throwing, jumping, tug-of-war, etc., has the characteristics of high load intensity and strong instantaneous, which is a kind of rapid and vigorous exercise of muscles in the state of "hypoxia", this exercise produces excessive lactic acid in the body, resulting in muscle fatigue. While aerobic exercise, such as jogging, swimming, rowing, cycling, mountain climbing, etc., with a low intensity and long duration (more than 15 minutes), it provides kinetic energy through aerobic metabolism, which enables a good supply of oxygen and nutrients to all tissues and organs, maintaining optimal functional status. Obviously, the old people's physical fitness is an aerobic exercise, the United States department of health and human services (HHS) recommends that older person take 150 mins of medium intensity exercise or 75 mins of the above exercise per week[3]. For the elderly, physical fitness is not only for physical health, but also for bodybuilding. In China, like square dancing, taijiquan and body building exercises, those have become the favorite physical fitness methods for the elderly. Physical fitness has two effects on the elderly, which are mainly reflected in physical and psychological.

Physiological impact on the elderly

In recent years, the four main popular sports for the elderly in China include fitness walking, Tai Chi, running, and dancing[4]. Regular exercise can helps the elderly to improve physiological and physical functions under scientific guidance [5]-[7].

- (1) The impact of exercise on the cardiovascular system
With the increase of age, the physical function of the

elderly will decrease, the elasticity of blood vessels will decrease, the blood pressure will rise[8], and high blood pressure will occur. Physical exercise can lower high blood pressure, increase beneficial cholesterol levels, reduce harmful cholesterol levels, reduce weight, and help prevent clot formation.

- (2) Slowing down the aging rate of the elderly

In the paper, *The Effects of Physical Exercise on the Elderly Fitness*, the author Dongdong Liu analyzes the elderly's physique, cardiovascular system function and various sports-related quality- the results show that moderate exercise is beneficial to the elderly, and proper exercise can appropriately slow down the aging rate of the elderly[9].

- (3) Physical exercise can improve sleep quality

Older people who regularly participate in physical exercise can maintain normal sleep time. Physical exercise can reduce the loss of brain cells , ensure adequate sleep, and delay the aging process of various organs. So that to maximize the accumulation of substances and abilities in the body, what's more, to enhance physical strength and disease resistance.

- (4) Moderate exercise can enhance bone quality

Bone mineral density is an important indicator of bone quality, reflecting the degree of osteoporosis and it is an important basis for predicting fracture risk. Regular physical exercise can enhance bone quality. Continuous, regular and moderate exercise can ease the degree of osteoporosis. The muscle strength of the elderly is weakened, the mechanical stimulation is relatively reduced, and the bone turnover tends to be negatively balanced, which will accelerate the development of osteoporosis. Those conditions like heavy overweight, obesity or arteriosclerosis are more serious. Older people who regularly participate in physical exercise have higher bone health than those who do not regularly participate in physical exercise. Some elderly who often participate in physical exercise are between health and osteoporosis, they often actively participate in physical exercise, enhance bone quality, prevent osteoporosis, and promote physical health.

Psychological impact on the elderly

for old people, especially elderly patients, not only have functional disabilities, but also often suffer from cognitive

impairments and/or mental disorders. As showed in many studies, More active physical activity is associated with improved mental health[10]-[12].

A review by Gogulla, Lemke, and Hauer[13] confirmed that physical exercise results in a significant reduction of depression and fear of falling in the elderly. In addition, Precision in exercise intensity and type can lead to better health benefits. High-intensity strength or endurance training was most effective in reducing depression, while participation in Tai-Chi or multifactorial training was most effective to reduce fear of falling.

Exercise appears to be beneficial in reducing some Behavioral and psychological symptoms of dementia, especially depressed mood and agitation. By participating in the exercise program, the anxiety behavior and emotional symptoms of dementia were reduced[14]. Research has indicated that a high-intensity functional exercise program is needed to reduce apathy in patients with dementia[15].

Fitness exercise demand of the elderly

With the variety of physical condition and life style, the old people have their own demand characteristics on fitness. A survey of 585 elderly people on fitness issues was conducted in Shanghai, China[16].

Table 1 shows the main purposes of taking exercises for the elderly as follow: a healthier and longer life, prevention and treatment of diseases, bodybuilding and display of vigor. Therefore, the most basic concern of older people is how to keep fit and decrease the risk of developing diseases. In addition, the strong desire to maintain a vigorous status and the pursuit of beauty, are also important factors to attract the elderly to into participation of fitness activities.

Table 1-The main purposes of participation in fitness activities[16].

No.	The list of purposes	Count
1	Promote health	454
2	Live longer	271
3	Improve mobility	208
4	Prevention and treatment of diseases	190
5	Enhance cardiopulmonary function	181
6	Bodybuilding	173
7	Display of vigor	166

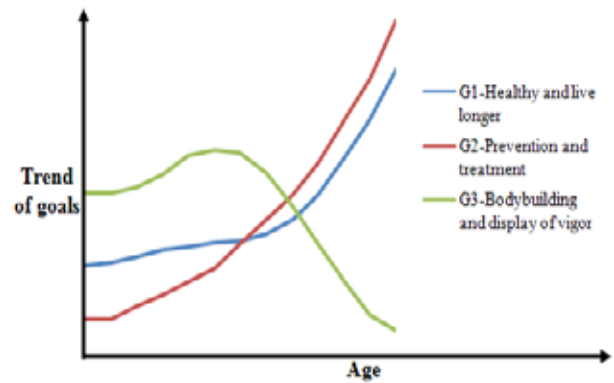


Figure 1- Different Tendency to Fitness Goals at Different Age
As can be seen from Figure 1, with the increase of age, the elderly pay more attention to healthy and live longer, Prevention and treatment. In particular, when they feel at risk for a disease or are already sick, Prevention and treatment will be their primary purpose for participating in the fitness program. For the purpose of Bodybuilding and display of vigor, they look more and more closely as they grow older. But when people reach a higher age, feel at risk for a disease or are already ill, their attention drops sharply.

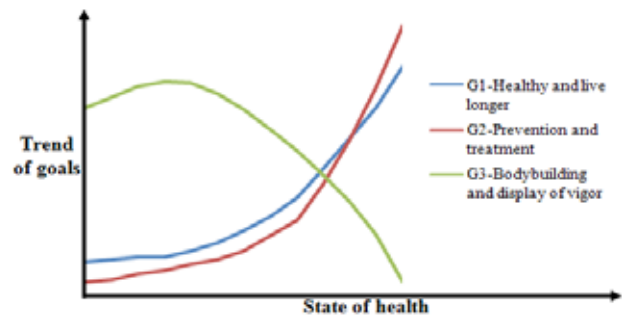


Figure 2 - Different Tendency to Fitness Goals with Different State of Health

From left to right in Figure 2, declining health status is represented. As we can see from this figure when health status declines, prevention and treatment, healthy and live longer become the main targets of their attention, while their attention to bodybuilding and display of vigor decreases sharply. Through the above analysis, we should fully consider the above differences in the design of fitness activities and the implementation of public service for the elderly, and provide Precision Fitness mode and personalization for different population and even individualized exercise prescriptions, promote the physical and mental health of the elderly, delay aging, and meet the needs of the elderly health care, medical care, bodybuilding, recreation, leisure, entertainment and so on.

A survey in Shanghai showed that the main demands of the respondents for the public services provided by the government for the elderly are shown in Table 2:

Table 2 The demands of the elderly for fitness public services[16].

No.	Items	N
1	Good fitness environment	462
2	Establish a physical culture	314
3	Regular physical fitness monitoring	304
4	High quality fitness facilities	262
5	Reasonable charge	254
6	Create opportunities for communication and display	228
7	Scientific guidance on exercises	220
8	Add leisure and entertainment facilities	162
9	Add health care and rehabilitation facilities	141

It is obvious from the statistical data that the elderly have many requirements for fitness public services in the following aspects:

- (1) The needs for the construction of environment and facilities, such as ranking 1, 4, 8 and 9. These facilities should be suitable for elderly and ensure their safety. At the same time, they need to be equipped with certain leisure and entertainment facilities after working out.
- (2) The organization and atmosphere of the event, such as ranking 2 and 6. The elderly extremely hope that they can participate in fitness with their friends and they have the opportunity to fully show themselves.
- (3) The needs for physical measurement and fitness guidance, such as ranking 3 and 7. There are some differences in the physical condition for the elderly. They want to be able to understand their physical condition and get precision fitness guidance, what's more, they also hope that they can know the fitness results after the gym.
- (4) Reasonable charges, such as ranking 5, the elderly have no financial income, they always pay more attention to the cost of fitness activities. These facilities and activities should be low-cost, which generally provided by the community as a public service.

Through the above analysis, we should pay attention to the demand on the design of fitness activities and the implementation of public services for the elderly. Among them, the main considerations are following factors: the specificity and safety of fitness facilities, the organization of group activities and physical fitness monitoring, health guidance, equipment of recreational facilities as well as reasonable fees.

Intelligent public service system for Precision fitness

The concept of precision fitness

The concept of Precision Fitness (also known as Precision Exercise) comes from Precision Medicine. In medical theory, scholars have divided medical patterns into three categories: empirical medicine, evidence-based medicine, and precision medicine. Among them, empirical medicine is a traditional medical model, which mainly relies on the empirical observation and practice verification of doctors to make medical decisions, such as Chinese traditional medicine. Evidence-based medicine ,based on scientifically analyzed clinical trial evidence, which emphasizes the combination of personal experience, the actual situation and willingness of patients to make the best medical decisions. Precision medicine is a new medical model based on the development of modern medical technology. Precision medicine is a new medical model based on the development of modern medical technology, it refers to making the most appropriate personalized medical decisions for each patient , which based on the patient's genetic characteristics and big data analysis.

It is worth noting that personalized medicine is not necessarily precision medicine, it depends on the basis of its decision-making. In fact, the above three medical models will also pay attention to the individualized characteristics of patients, but the basis for decision-making can be personal experience, evidence-based evidence or genetic characteristics information and big data analysis conclusions. The concept of personalized medicine is proposed from the perspective of differences in individualized characteristics of patients. Similar to the concept of precision medicine, precision fitness or precision exercise refers to the accurate diagnosis and scientific evaluation of each fitness on the basis of the most appropriate exercise program for its.

Because fitness is different from the treatment of diseases such as tumors, the genetic characteristics of fitness people are generally less considering, mainly considering the individualized exercise program of the fitness person from experience, evidence-based basis and big data analysis. Referring to the concept of doctor's prescription, according to the definition of the World Health Organization in 1969, Exercise prescription refers to the results of medical tests (including exercise tests and physical tests) based on its health, physical strength and cardiovascular function. It provides exercise methods in terms of exercise patterns, exercise intensity, exercise time, and exercise frequency and precautions to guide people to exercise in a purposeful, planned, and scientific manner.

Principles of precision fitness

the main contents of exercise and fitness for the elderly should be concerned about six aspects: sport purpose, sport items, sport intensity, sport time, sport frequency and precautions. During exercise, the following principles should be followed[17]:

(1) Security

There are many risks for the elderly to participate in fitness activities. The sport items, sport intensity, sport time, and sport methods must be carried out within a safe range, and do the best to ensure the safety of exercise. When carrying out Fitness exercise prescription, it is necessary to pay attention to the changes of their personal subjective feelings and physiological indicators such as heart rate.

(2) Step by step

When the elderly exercise, they should start from the small amount of exercise and exercise intensity according to their actual physical conditions. The elderly gradually increase the amount of exercise and the intensity of exercise after the body adapts. They need to warm up before exercise to avoid accidents such as sudden brain hemorrhage.

(3) Personalized management

For the fitness of the elderly, we should pay attention to the differences in their living environment conditions, physical conditions, as well as the history of diseases, interests and hobbies, sports habits, etc., and select appropriate sports items according to the differences in personality.

(4) Supervision and monitoring

When the elderly are exercising, they should be supervised from two aspects: one is monitoring by others, which is the responsibility of the physician, the family, the sports partner or the social counselor; the other is self-monitoring, during the fitness exercise, the elderly should pay attention to their own feelings and physiological changes at any time and take protective measures according to their own experience.

Intelligent public service system of precise fitness

In order to make the elderly better accurately fitness, we designed a scheme of intelligent public service system, as shown in Figure 3.



Figure 3 - Intelligent Public Service System of Precise Fitness for the Elderly

The above system is built on the cloud service platform and will automatically collect daily Weather and environmental information and Information of fitness venues and equipment.

It provides seniors with fitness venues-facilities booking services-fitness activities and participant information, So they choose to participate in a fitness activity of interest with a familiar fitness partner. During the fitness process, the system will dynamically collect data such as data of fitness facilities and their data of wearable devices used by the elderly. , and it can also use Exercisers' mobile phone to collect the above information and send it to the cloud platform for real-time monitoring of exercise amount and physiological index changes of the elderly. In addition to professional coaches' guidance on the fitness spot, there is a Fitness expert team that has the Big data analysis and expert system set up on the cloud service platform to provide the elderly with Exercise prescription and precision Fitness guidelines, then generating Fitness analysis reports, finally sending them to the old people's cell phone in time.

Application of artificial intelligence technology

the elderly provide a full-featured precision fitness service as part of the government's public service system. We will explain the application of artificial intelligence technology in the intelligent customization of personalized exercise prescriptions, the intelligent guidance of socialized fitness services, and the intelligent matching of public fitness resources.

Intelligent customization of personalized sports prescription

Smart customization of face-to-face sports prescriptions. Based on the obtained large amount of information and case data, the system mines and analyzes the fitness programs and actual effects of different groups of people, and establishes statistical analysis models and rules knowledge, which are stored in the expert system. However, according to the principle of precision fitness and the specification of personalized exercise prescription, each elderly person is intelligently generated a customized prescription scheme that meets his individual characteristics, and the effect of the above scheme in actual application is evaluated, combined with seasons, weather, and the changes in the distribution of fitness resources, and therefore timely adjusts the above programs.

Intelligent guidance of social fitness services

the system adopts autonomous intelligent technology to automatically monitor and analyze the physical condition of the elderly, the participation status of fitness activities and their hobbies, and organize socialized fitness according to the season, weather and available fitness resources. Activities, attracting relevant seniors to participate, carry out fitness competitions suitable for them, and form a group fitness atmosphere that encourages and supervises each other. At the same time, under the guidance of the Fitness expert team, through the Big data analysis and expert system, provide accurate fitness guidance for each elderly, and provide intelligent guidance for them to find suitable fitness resources and solve problems in the fitness process.

Intelligent matching of public fitness resources

the system adopts intelligent optimization matching algorithm according to the distribution of various public fitness resources in different communities and the use conditions in different seasons and weather environments. The automatic generation can meet the diverse flower demand of the elderly and maximize the efficiency of fitness resources. The best match solution. At the same time, according to the above matching of supply and supply, the government provides intelligent suggestions for the planning, deployment and expansion of public fitness resources.

Conclusion

Population aging is an inevitable trend in the development of social and economic civilization, as well as an objective phenomenon in the process of human social development and a common challenge faced by governments around the world. It is an important task for the government to improve the health status and quality of life of the elderly by promoting socialized fitness activities, so that they can make more contributions to social development, alleviate social and family burdens. This paper deeply analyses the characteristics of the fitness of old people and needs, and the above activities influence on their physical and mental. Based on the advanced artificial intelligence technology, this paper designs the intelligent public service system scheme of precise fitness for the elderly, analyzes and elaborates the application of the above technology, which has important significance and reference value for the development of public fitness service for the elderly in the intelligent era. How to provide systematic and

accurate fitness guidance for the elderly, from the point of view for whole life cycle management of the elderly increases with age and physical condition change and the dynamic change of demand for fitness. What's more, How to integrate and share the medical data of the elderly in major hospitals to form a more comprehensive big data environment and protect their privacy is an important direction for the subsequent research in this paper.

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The Impact of the System and Information Quality of Smart Government in UAE on User Satisfaction

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Abstract

In the most recent years, the smart government is the main players in the most modern contemporary organizations. It can affect user satisfaction in many aspects of the business in the organization and country levels. This research uses modelling of structural equations via PLS to assess the 147 suitable questionnaires so as to evaluate the recommended model to identify the effect of system and information quality of smart government applications on the satisfaction of users among members of staff in the public domain in the UAE (United Arab Emirates). The research will describe relationships among the different constructs. Our efforts have improved our understanding of the state of smart government applications. Results suggested that both independent variables significantly predicted user satisfaction. The recommended model also clarified 44% of the variance in user satisfaction.

Keywords

System quality; information quality; user satisfaction; smart government; UAE

1. Introduction

The rapid rate of change in the organization's environment has continuously pushed the need for technologies and acceptance of these technologies at an accelerating rate. The new technologies are enabling organizations to be flatter, networked, and more flexible. Organizations in the 21st century inevitably make substantial investments in IT in order to achieve competitive advantage, by spending enormous sums of money on computer hardware, software, communication networks, databases and specialized personnel (Kripanont, 2007). Consequently, IT is not exclusive for the workplace but has also become widespread in public areas and houses. Technology is going to give us the tools to make us independent, imagine the world which everything become an application on the internet (McNamee, 2011).

Although the government of UAE has innovation at the core of its vision and policy by making advance technology products available where it ranks in the first place among its neighbors in this regard (Global Competitiveness Report, 2018). Nevertheless it ranks on the 25th place with regard to innovativeness (see figure 1.3). Further, among the innovative technologies that are being introduced in the UAE is the application of smart government which is a representation of UAE vision

2021. Based on such reports and data, there is a gap in the utilization of such innovative technology and the goals of the UAE government in this perspective.

The study examines the impact of the technology factors on the satisfactions of smart government services users in the United Arab Emirates.

2. Literature review

2.1 System quality (SYSQ)

System Quality is defined as suitability, reliability of the system, and stability of the software and hardware whereby information needed are supported (W H DeLone & Mclean, 2003) and as characteristics of the system in terms of ease of use, functionality, flexibility, understandable, and reliability (Petter & McLean, 2009). It is formed in the process of interaction between the user and the system such as when completing a specific task (Maes & Poels, 2007). Numerous researches have been done on the role of system quality in many technology applications all over the world. Rana, Dwivedi, Williams, & Weerakkody (2014) studied the influence of system quality on user satisfaction in the context of e-government application in India. Consequently, the following hypotheses are proposed:

H1: System quality has a positive effect on user satisfaction.

2.2 Information quality (INFQ)

Information quality is referred to as the characteristics of system output as being accurate, up-to-date, and complete (Petter & McLean, 2009), besides relevance, understanding, and accessibility as other characteristics of information quality as described by Tam & Oliveira (2016). Moreover, in the context of online learning, the term information quality is sometimes substituted for knowledge quality as suggested by Wu & Wang (2006). where they consist of content quality and context and linkage quality. Nevertheless, Wang et al. (2014) described information quality as the instructional attributes shaped by educators and their students. Additionally, other researchers in the internet context have described information quality as being well organized, effectively presented, and useful (Halonon, Acton, Golden, & Conboy, 2009).

Many types of research have investigated the role of information technology in different applications and different contexts, for instance, a recent study by Da?han & Akkoyunlu (2016) in Turkey to investigate the effect of information quality on user satisfaction found that there is a significant relationship between the mentioned constructs. Consequently, the following hypothesis is proposed:

H2: Information quality has a positive effect on user satisfaction.

2.3 User satisfaction (SAT)

Customer satisfaction is regarded as one of the central aspects in the domain of IS and usage of technology (DeLone & Mclean, 2003). Therefore, it has extensively been used to study the use of technology systems and applications (Montesdioca et al., 2015). User satisfaction is referred to as someone's attitude towards a particular computer application with which he is in direct interaction (Norzaiddi, 2008), while Almarashdeh (2016) defined it as the extent to which customers think a certain application or system fulfils their requirements of information. Additionally, user satisfaction means the opinion that depends on whether the customer feels the application is useful and wishes to utilise it again (Xinli, 2015). As performance and user satisfaction are two of the key aspects in the Delone& McLean IS success model, this correlation has been confirmed widely in the literature. Isaac, Abdullah, Ramayah, & Mutahar (2017) and Culibrk et al. (2016) mentioned the significance of this correlation with reference to internet and e-government in that order

3. Research method

3.1 Overview of the proposed conceptual framework

The correlations between the parameters conjectured in the conceptual model have been obtained from the DeLone& McLean IS success model. Fig 2 displays the recommended model that includes system quality, information quality, and user satisfaction. These correlations are adapted from DeLone & McLean (2003).. The given model evaluates the relationship among the aforementioned aspects for the employees of the public sector organisation in the UAE. The proposed conceptual framework has two hypotheses to be tested.

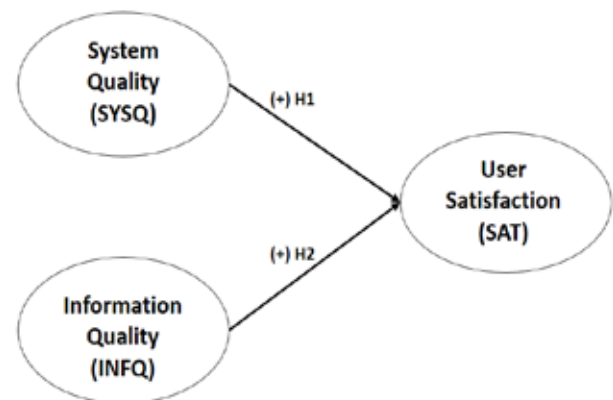


Figure 1: The proposed conceptual framework

3.2. Instrument development and data collection

The creation of a tool for this research involved a questionnaire of 13 questions, and on the basis of the literature on IS, the research employed a multi-item Likert scale (Lee, Yoon, & Lee, 2009). The parameters were evaluated using a Likert scale recommended in the earlier studies (Isaac, Abdullah, Ramayah, & Mutahar, 2017; Isaac, Abdullah, Ramayah, Mutahar, & Alrajawy, 2017; Isaac, Abdullah, Ramayah, & Mutahar Ahmed, 2017). The information was gathered by delivering a self-managed questionnaire 'in-person' between January 2017 and March 2018 to employees of the governmental organisations. The number of the distributed questionnaires was 200, and the number of the returned sets is 160 of which 145 responses were considered suitable for the analysis. According to Tabachnick & Fidell (2012) and Krejcie & Morgan (1970), the sample size was seen as sufficient.

4. Data analysis and results

PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilising the software SmartPLS 3.0

(Ringle, Wende, & Becker, 2015). A two-phase analytical technique (Anderson & Gerbing, 1988; Hair, Hult, Ringle, & Sarstedt, 2017) consisting of (i) measurement model analysis (reliability and validity) and (ii) structural model analysis (examining the conceptualised relationships) was employed after performing the descriptive assessment. This two-phase analytical technique consisting of a structural and a measurement model assessment is better than a single phase assessment (Schumacker & Lomax, 2004; Hair et al., 2010). While the model of measurement explains each parameter's measurement, the structural model describes the correlation between the parameters in this model (Hair et al., 2017).

The PLS technique is employed for both the structural and the measurement model in this study because of its capability to conduct simultaneous assessment, giving more accurate assessments (Barclay, Higgins, & Thompson, 1995). The main bases for selecting SEM as a statistical technique for this research is that it offers a simultaneous assessment which results in more precise estimates (Isaac, Abdullah, Ramayah, & Mutahar, 2017a; Isaac, Abdullah, Ramayah, & Mutahar, 2017b; Isaac, Masoud, Samad, & Abdullah, 2016)

4.1 Descriptive analysis

Table 1 shows the standard deviation and mean of every parameter in the present study. The participants were told to reveal their opinion regarding system and information quality on the basis of a 5-point scale varying from 5 (strongly agree) to 1 (strongly disagree). The score of Information quality was the highest with 3.116 mean out of 5.0, having a standard deviation of 1.074.

4.2 Measurement model assessment

Construct reliability as well as validity (comprising discriminant and convergent validity) were used to examine the measurement model. The particular alpha coefficients of Cronbach were tested to determine the reliability of every core parameter in the measurement model (construct reliability). The quantities of all the unique alpha coefficients of Cronbach in this research ranged from 0.901 to 0.8922, which went beyond the proposed value of 0.7 (Kannana & Tan, 2005; Nunnally & Bernstein, 1994). Moreover, for inspecting construct reliability, all the CR (composite reality) values ranged from 0.938 to 0.950, which went beyond 0.7 (Werts, Linn, & Jöreskog, 1974; Kline, 2010; Gefen, Straub, & Boudreau, 2000). Thus, as Table 1 shows, construct reliability has been fulfilled as Cronbach's CR and alpha were rather error-free for all the parameters.

Analysis of indicator reliability was conducted by utilising factor loadings. When the related indicators are very similar, this is reflected in the construct and signified by the construct's high loadings (Hair et al., 2017). As per Hair et al. (2010), the exceeding of values beyond 0.70 suggests substantial factor loadings. Table 1 displays that all articles in this research had factor loadings greater than the suggested value of 0.7.

AVE (average variance extracted) was employed in this study to analyse convergent validity, which represents the degree to which a measure is correlated positively with the same construct's other measures. All the AVE values ranged from 0.835 and 0.865, which went beyond the proposed value of 0.50 (Hair et al., 2010). Thus, all constructs have complied with the convergent validity acceptably, as shown in Table 1.

Table 1: Mean, standard deviation, loading, cronbach's Alpha, CR and AVE

Constructs	Item	Loading (> 0.5)	M	SD	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
System Quality (SYSQ)	SYSQ1	0.900	3.019	1.042	0.901	0.938	0.835
	SYSQ2	0.920					
	SYSQ3	0.921					
Information Quality (INFQ)	INFQ1	0.930	3.116	1.074	0.911	0.944	0.849
	INFQ2	0.928					
	INFQ3	0.905					
User Satisfaction (SAT)	SAT1	0.932	3.109	1.107	0.922	0.950	0.865
	SAT2	0.928					
	SAT3	0.930					

Note: M=Mean; SD=Standard Deviation, α = Cronbach's alpha; CR = Composite Reliability, AVE = Average Variance Extracted.

Key: SYSQ: system quality, INFQ: information quality, SAT: user satisfaction

The degree to which the articles distinguish among concepts or measure different constructs is demonstrated by discriminant validity. Cross-loadings as well as Fornell-Larcker were employed to analyse the measurement model's discriminant validity. Generally, cross-loadings are employed as the initial step in examining discriminant validity of the markers (Hair et al., 2017). In this research, the markers' outer loadings on a construct went beyond all the cross-loadings with other parameters, and thus the cross-loading condition had met the requirements (refer to Table 2).

Table 2: Results of discriminant validity by the cross loading

	SYSQ	INFQ	SAT
SYSQ1	0.900	0.575	0.547
SYSQ2	0.920	0.580	0.542
SYSQ3	0.921	0.598	0.565
INFQ1	0.591	0.930	0.565
INFQ2	0.601	0.928	0.556
INFQ3	0.575	0.905	0.527
SAT1	0.573	0.562	0.932
SAT2	0.558	0.539	0.928
SAT3	0.553	0.563	0.930

Key: SYSQ: system quality, INFQ: information quality, SAT: user satisfaction

Table 3 shows the outcomes for discriminant validity by employing the Fornell-Larcker condition. It was discovered that the AVEs' square root on the diagonals (displayed in bold) is bigger than the correlations among constructs (corresponding row as well as column values), suggesting a strong association between the concepts and their respective markers in comparison to the other concepts in the model (Fornell & Larcker, 1981; Chin, 1998). According to Hair et al. (2017), this indicates good discriminant validity. Furthermore, the exogenous constructs have a correlation of less than 0.85 (Awang, 2014). Therefore, all constructs had their discriminant validity fulfilled satisfactorily.

Table 3: Results of discriminant validity by Fornell-Larcker criterion

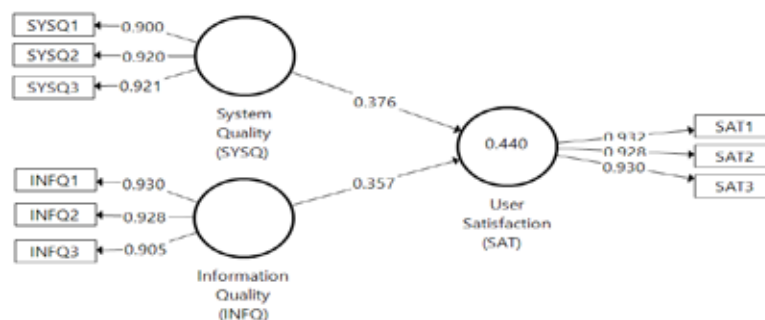
	Factors	1	2	3
		INFQ	SYSQ	SAT
1	INFQ	0.921		
2	SYSQ	0.640	0.914	
3	SAT	0.597	0.604	0.930

Note: Diagonals represent the square root of the average variance extracted while the other entries represent the correlations.

Key: SYSQ: system quality, INFQ: information quality, SAT: user satisfaction

4.3 Structural model assessment

The test can be performed on the structural model by calculating beta (β), R^2 , and its corresponding t -values through a bootstrapping process with a resample of five thousand (Hair, Hult, Ringle, & Sarstedt, 2017).



Key: SYSQ: system quality, INFQ: information quality, SAT: user satisfaction

Figure 2: PLS algorithm results

Table 4 and Figure 2 show the structural model analysis, showing the findings of the hypothesis experiments, where both hypotheses are maintained. System quality and information quality significantly predict user satisfaction. Hence, H1 and H2 are accepted with ($\beta = 0.376$, $t = 7.039$, $p < 0.001$) and ($\beta = 0.357$, $t = 7.752$, $p < 0.001$) respectively.

The strength of the correlation between endogenous and exogenous constructs is evaluated by the normalised path coefficients, and in this case they demonstrate that the straightforward consequences of system quality on user satisfaction is stronger than the effects of information quality on user satisfaction. The R^2 values have an adequate level of descriptive power, suggesting a substantial model (Cohen, 1988; Chin, 1998).

Table 4: *Structural path analysis result*

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	Decision	R^2
H1	SYSQ→SAT	0.376	0.053	7.039	0.000	Supported	0.44
H3	INFQ→ SAT	0.357	0.046	7.752	0.000	Supported	

Key: SYSQ: system quality, INFQ: information quality, SAT: user satisfaction

5. Discussion and conclusion

The study found that system quality positively affects user satisfaction in using smart government services among employees of public sector in the United Arab Emirates, this is supported by previous studies (A. H. Aldholay, Isaac, Abdullah, & Ramayah, 2018; Isaac, Abdullah, Ramayah, & Mutahar, 2018; Abrego-Almazán et al., 2017; Chiu et al., 2016; Tam & Oliveira, 2016). It is explained by the fact that The more the employee finds smart government services to be easy to use, flexible, and have a clear and understandable interaction with it, The more the employees consider their decision to use such technology, meet their expectations, and are generally satisfied.

Likewise, it was found that information quality positively affects actual use of smart government services among employees of public sector in the United Arab Emirates, this is supported by previous studies (Aldholay, Isaac, Abdullah, Alrajawy, & Nusari, 2018; Aldholay, Isaac, Abdullah, & Ramayah, 2018). It is explained by the fact that the more the internet provides up-to-date, relevant, and accurate information, The more the employees consider their decision to use internet a wise one, meet their expectations and are generally satisfied.

The United Arab Emirates government is determined to enhance its public organizations' services (Global Innovation Index, 2016), the findings of this study could be considered as one of the initiatives to serve on that direction. The aim of this study was to examine the effect of system and information quality of smart government services on user satisfaction among employees within the public sector in the United Arab Emirates. It has provided a case to validate parts of DeLone & McLean information system success model and despite of various constraints to the study, the results have been encouraging. The results revealed that both hypotheses are significant. The independent variables significantly explain 44% of user satisfaction.

APPENDIX

Appendix A

Instrument for variables

Variable	Measure	Source
System Quality (SYSQ)	SYSQ1: I find the smart government services to be easy to use. SYSQ2: I find the smart government services to be flexible to interact with. SYSQ3: My interaction with the smart government services is clear and understandable.	(Zhou, 2011; Mohammadi, 2015; Ngai et al., 2007)
Information Quality (INFQ)	INFQ1: The smart government services provide accurate knowledge. INFQ2: The smart government services provide comprehensive knowledge. INFQ3: The smart government services provide organized knowledge.	(Lin & Wang, 2012; Lin et al., 2011; Mohammadi, 2015)
User Satisfaction (SAT)	SAT1: My decision to use the smart government services was a wise one. SAT2: The smart government services have met my expectations. SAT3: Overall, I am satisfied with the smart government services.	(Sun, Tsai, Finger, Chen, & Yeh, 2008; Wang, 2008; Huang, 2008)

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Impact of Employee Job Satisfaction on Employee Performance

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Abstract

The reason for this investigation is to investigate the connection between representative occupation fulfillment and worker execution and to comprehend if there is a connection between these two factors, The motivation behind this to investigate the connection between work worker fulfillment and worker execution and to comprehend if there is a connection between these two factors, and the effect of worker fulfillment on representative execution. Observational investigate was led on an examination test of medium-sized University, with 100 workers reviewed. The outcomes will demonstrate the nearness of a reasonable connection between representatives' worker fulfillment and worker execution in the two sides yet with beautiful frail force. Nitty gritty examinations portray association between representative fulfillment and representative execution. It could be expressed that representative fulfillment decides worker execution, as opposed to representative execution deciding worker fulfillment.

Keywords

Job satisfaction, employee performance, transformational style.

1. Introduction

As work assumes essential job of a man lives and by far most spend a broad bit of their working cultural and responsibilities connected with work containments vital to improving agents' execution and proficiency.

Factors affecting the level of job satisfaction are;

1. Working culture
2. Fair strategy
3. Welfare organization
4. Recognition
5. Salary
6. Gender
7. Recommendations
8. Coordination
9. Leadership.
10. Loving Environment
11. Employee Safety
12. Opportunity
13. Responsibilities.
14. Out of the box
15. Personal Interest

16. Co-Workers Relations

17. Relations with Reporting Manager

18. Employee Reaction

19. Flexibility.

20. Job Description

The motivation behind in examination is to build up the connection between worker work fulfillment and representative execution and to decide if there will be there an observationally demonstrated connection between these two factors and the force of this relationship.

Here is the suspicion is connection between representative occupation fulfillment and worker execution is intricate and questionable. the reasonable relationship was not built up truth be told, a few creators have discovered a positive connection among's worker and representative execution (Chan, Gee, and Steiner,2000; Ellinger, Yang, and Howton,2002; Huselid,1995; Koys,2001; Latifet al.2015; Mafini and Poee,2013), while, then again, some have not found any factually huge relationship between's these two factors (Daily and Near,2000; Mohr& Puck,2007). As to analysts' outcomes, this paper endeavors to give an additional commitment to the concentrate of this relationship with an unprecedented accentuate on the

orientation of this relationship which infers that the accentuation is on researching between which two parts the affiliation is more grounded. Is it between worker fulfillment and representative execution, or between worker execution and worker fulfillment.

1.1 Need for the study

- To give a positive workplace to accomplish particular target.
- To upgrade a competency of a person towards the activity
- To measure the execution of the worker
- To give them better remuneration bundle and workplace by breaking down their execution.

2. Literature review

Here, we watched different determinants of occupation fulfillment and worker execution and their relationship.

Napoleon expressed: 'The feasibility of the equipped power depends upon its size, getting ready, foundation and resolve, and soul is worth more than the different factors together.'

The possibility of occupation satisfaction, analysis by through different central focuses by various scientists, is described in an unforeseen way. Greenberg and Baron (2008), example is , saw work positivity as a tendency that can make a good or bad effect on one's employments. Rules and regulations at workplace will also make effects. There is no single strategy to make everyone happy. Greenberg and Baron (2008) viewed a helpful tendency for a man's movement. A thought, according to George and Jones (2005), is result of assessments or feelings that join the mental, energetic, and psychological spaces. The positive vibes about the business can in like manner be described as a employee energetic response to different responsibilities related dimensions for achieving describing euphoria, openness , conviction, incentives, mindfulness or diverse high possibilities, including upward flexibility, affirmation and assessment complete on an authenticity outline with budgetary motivating force like pay (Robbins and Judge, 2007; George and Jones, 2005). Arnett, Laverie and McLane's (2002) thoughts is consolidated by explaining that movement positive is reflected as a delegate's usual brimming with feeling evaluation of himself/herself concerning his or her action.

2.1 Meaning of Job Satisfaction

Work contentment explains by many psychologists. Corner, Smith and Stone (1992, p.1) describe Work

contentment as delegates' enthusiastic stage as for a action, considering what they looking for and in what they are extremely good in kind. Honestly, a specialist with low wants can be more content with a particular work than someone who has hoisted benchmarks. In case one's wants to see or outperformed in that movement, by then one is little and content with in action.

3. Research methodology

3.1 Sample

Sample For the reason for dissecting the examination issue, an aggregate number of one hundred respondents were chosen from the University .Three representative classes were considered as Teaching Professionals and Non Teaching Professionals and administrative staff. All respondents are chosen from irregular premise of the workplace representatives and accentuation is given to calling.

3.2 Data collection method

A self created survey used to quantify the activity fulfillment of the worker in the association .poll to be utilized must be arranged precisely with the goal that it might end up being to be successful in gathering the pertinent data.

3.3 Scaling technique:

The four measurement of the activity fulfillment organized. Realistic scale rating procedures is utilized.

3.4 Statistical tools used:

The information gathered and broke down painstakingly and deciphered by the assistance of Chi-Square dissemination strategy. It used to decide whether all out information indicates reliance or the two characterizations are autonomous.

4. Information examination and interpretation:

Table 1: It speaks to connection among Organization and Employees

S No	Response	No of Appellant	Percent (%)
1	Amiable	26	24
2	Highly Amiable	26	36
3	Low	15	10
4	Better Amiable	15	14
5	Non Amiable	18	14
	Total	100	100

Analysis:

The above results demonstrate that 24% of the Appellant is having amiable relationship within the organization 36% of the Appellant is having Highly Amiable relationship among them. 10% of the Appellant having low association. 14% of the Appellant not having welcoming relationship. Staying 14% of the Appellant is not in good relationship.

Table 2: Represents categorization related job containments

S. No	Response	Appellant	Result (%)
1	Positive Contented	19	22
2	Contented	40	47
3	Moderate	9	10.25
4	Discontented	7	8.75
5	Highly Discontented	5	7
	Total	80	100

Analysis:

The above table shown that 22% of the Appellant is highly satisfied, 47 % are satisfied for their job .10% they don't have any negative feeling regarding their job .8 % they are having the disappointment about their job.7% of the Appellant are highly disappointed .

Table 3: Represents the association between organization and staff based on educational qualification:

Qualification	Highly Contented	Contented	Moderate	Discontented	Highly Discontented	Total
Highly Contented	2	6	2	1	2	13
Contented	9	16	6	1	1	28
Average	4	2	1	4	1	12
Non Amiable	2	2	3	1	1	9
Better Amiable	4	4	2	2	0	12
Total	21	31	14	9	5	74

Null hypothesis (H0):

There is no relationship between the organization climate and the relationship of employee and management

Alternative hypothesis (H1):

There is a relationship between working condition and the relationship of employee and management.

Chi-square Test:

$$X = (\text{Observed value} - \text{Expected value}) / \text{Expected value}$$

O = Observed Value

E = Expected Value

$$E_i = R_t * C_t / G_t$$

R_t = Row total

C_t = Column total

G_t = Grand total

Table 4: Represent relationship between the working condition and job expectation.

Expected Frequency:

Observed value	Expected value	(Observed – Expected)2	(O-E)2/E2
5	3.27	1.329	1.0982
8	7.90	2.1679	3.0244
6	4.00	1.0003	1.009
4	2.5	2.021	1.0099
2	2.07	2.0039	1.0035
7	6.78	3.0394	2.0034
13	10.00	7.982	1.8556
4	6.34	1.1984	1.0983
3	4.89	2.992	1.7871
2	2.49	1.9897	2.4890
2	3.45	2.1569	0.0986
4	7.67	2.4440	2.1987
2	2.0	0.8890	0.8976
2	1.37	0.0121	0.2298
1	4.78	1.5870	0.0187
3	4.29	0.001	0.9876
3	2.1	0.5990	0.0987
2	2.14	0.0090	0.1876
2	0.61	0.1678	0.0555
1	3.17	0.7744	0.0789
3	4.0	0.009	0.2041
3	2.8	0.0987	0.0444
2	1.10	0.1687	0.987
1	0.43	0.002	0.3908
1	1.8	0.18	0.0987
Total			5.4897

d.f. = (r-1) (c-1) = (5-1) (5-1) = 4*4 = d.f. = 16

Tabulated value of χ^2 0.04 d.f at 5% level of significance is 26.3

Understanding:

Since the ascertained esteem is not exactly the arranged esteem (T.V.), invalid theory (H₀) is acknowledged. Along these lines, we infer that there is no relationship between the arrangements in light of working condition and the order in light of the employer stability.

5. Discoveries

- 36% Employees were connection among administration and workers.
- 40.75% Employees are happy with their working environment.
- 26.25% Employees are happy with organization employer stability.

6. Conclusion and discussion

The investigation analysis has utilized thorough research strategies to exhibit a portion of the premier experimental information in setting the extrapolative legitimacy on the proposed components of worker execution. There has been meager experimental research completed for building up a measure on worker execution. We have endeavored to build up a device on execution the board through acclimatizing the writing accessible in the subject and by counseling space specialists. The acknowledged strategies for improvement of an instrument were pursued. The article conveys various ramifications and research bearings for academicians and business professional for exploring the impact of worker execution on determining representative viability. The recommended system offers a comprehensive comprehension of the nature and nuances of worker execution and the foundations for improving representative execution. It is recommended that Employee professionals must utilize the bits of knowledge from the investigated variables to make and keep up a superior workplace. Employee's performance and Satisfaction is an exhaustive, and simple to oversee psychometric measure that grasps much potential for use in representative execution research and practice. Nonetheless, build legitimacy is an essential hindrance for the advancement of a logical size of this nature. Develop legitimacy fundamentally gathers after some time and through numerous examinations. The scale requires further adjusting so as to build its dimension of unwavering quality and capacity to illustrate the change related with the develops they measure in various settings. Future research is justified to inspect, with the haphazardly chosen test, the generalizability and legitimacy of the model. It is likewise proposed to cross-approve the instrument in various societies with different techniques that incorporate perspectives from prompt bosses, centered gathering talk with companion gatherings' and balanced representative meetings. To build up a sound and testable hypothesis on the develop of representative execution, the arbitrators, go between, and other related factors should be distinguished by future specialists to broaden its degree and inclusion.

Thusly, through following analysis it has been assumed the delegates were positive in all except for in progression approach and dissension managing structure. Any affiliation limits with the joining of all resources. Any alteration in any of the resources is reflected in the yield.

Consequently first resource employee ought to be looked for the better execution of the endeavor. Invigorate useful workplace relations, and after that people will be significantly positive in their responsibilities constructive estimations for respective managers, partners or associates. Reassurance of affirmed courage is undoubtedly the principle technique to reach higher occupation positiveness. A delegate's movement positivity depends upon the positive psychological, significant, excited resources the laborer passes on to the work environment.

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A Study of Relationship between Technostress and Intermittent Discontinuance of Wearable Device

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Abstract

With the emergence of IoT today, wearable technology has been widely identified as the “next big thing” which will have a significant impact on our daily lives. However, recent reports reveal that the growth of wearable device usage has slowed down as wearable devices users get to suspend their use of devices. Most of previous studies on wearable devices deal with users’ adoption or application of technology while few studies investigate discontinuance of wearable devices.

This study aims to analyze factors affecting the intermittent discontinuance of wearable devices from the perspective of Technostress. Technostress is a negative psychological factor caused by the use of an ICT equipment, which has been recently used to account the discontinuance of ICT. To understand the usage behavior of discontinuance more dynamically and realistically, we will use “intermittent discontinuance” which refers to a state where users temporarily discontinue using device rather than entirely abandon them. We will perform an empirical examination of how technostress affects intermittent discontinuance of wearable technology.

The result of the study will offer several implications by extending the understanding of technostress and introducing a new concept of intermittent discontinuance of wearable devices.

Keywords

IoT, wearable device, technostress, intermittent discontinuance

1. Introduction

Wearable technology is one of the leading areas of the IoT. The definition of wearable device is an embedded portable computer (electronic device with micro-controllers) that can be incorporated into clothing or worn on the body as implant or accessory for interactions between user and a smart environment anytime, anywhere (MIT Media Lab). This small digital device can be designed as glass, watch, clothes, etc. A 2016 report by the International Data Corporation (IDC) estimated that global wearable vendors which have risen by average 22.9 percent per year will account for 214 million shipments by 2020 (Dehghani, 2018). Among those, wrist wearable devices such as smartwatches or smartbands dominate the area of wearable technology. Today, wrist wearable devices have been widely identified as the “next big thing” that will have a significant impact on our lives. Starting with Fitbit, many global brands such as Apple, Samsung, and Google have struggled to lead the wearable industry, preparing

for the next generation. Gartner forecasted that wrist wearable market will expand into 20 million dollars by 2019 (Jang, 2017).

Previous studies on wearable devices have focused on users’ adoption or continuous intention of usage in positive point of view. Li, et al, (2016) analyzes technological antecedents in examining consumers’ use of healthcare wearable devices. Yang, et al., (2016) employs technology acceptance theories to examine consumers’ intention of wearable devices. Dehghani (2018) studies on the factors affecting continuous intention of wearable device users.

Despite the potential of wearable technology, some of the industry doubt its promising future. Recent reports show that the wearable technologies are failing to inspire long-term adoption. According to Endeavour Partners’ “2014 Inside Wearable Report”, one third of wearable device users stop using devices in six months after making purchase. Only half of them has kept using devices over a year. Klasnja (2011) proves that the product cycle of wearable devices has shortened.

Meanwhile, few studies research the factors affecting discontinuance of wearable devices. Lazar (2015) asked a group of wearable device users why they abandoned their devices. Clawson (2015) analyzed 1600 advertisements of wearable technologies to figure out why users abandon their health-tracking technologies. Shin (2016) studies on factors affecting the slow distribution of wearable devices with the model of innovation resistance. Yet, there still needs to empirically analyze the discontinuance of wearable technologies based on traditional information systems(IS) behavior theory.

The purpose of this study is to analyze the relationship between technostress and intermittent discontinuance of wearable devices.

2. Research background

2.1 Technostress

Recently, technostress has become the key factor used in IS research (Tarafdar et al., 2010; Ayyagari et al., 2011) to describe the discontinuance of IS. Technostress is defined as an IT user's experience of stress when using technologies (Brod, 1984). The term has been generally used by Craig Brod, an american psychologist since 1980 when personal computer was introduced at first. As IS has been widely distributed and commercialized, technostress is often used as one of the main theories to explain why IT users has a negative point of view toward IS and stop using it (Maier, 2015). Figure 1 shows the previous studies regarding technostress.

Researcher	Theme	Factors of technostress
Ayyagari, 2011	Technostress	Overload, Privacy invasion, Work Insecurity
Tarafdar et al., 2007	Technostress at the workplace	Overload, Privacy invasion, Complexity, Technical concern
Wang et al., 2008	Technostress due to the difference of work environment	Overload, Privacy invasion, Complexity, Technical concern
Shu et al., 2011	Technostress of Chinese IT engineers	Overload, Privacy invasion, Complexity, Technical concern
Choi, 2011	Technostress on the continuous use of smartphone	ICT capability, ICT knowledge, Complexity
Seo, 2012	Technostress on work satisfaction	Overload, Privacy invasion, Conflict, Insecurity
Lee, 2017	Technostress on the discontinuous usage of mobile	Overload, Invasion, Complexity

The common factors usually used in technostress-related studies are as following: overload, invasion, complexity, insecurity, uncertainty. Among these, insecurity is used in the case which one is concerned about losing a job because of ignorance of IS at the workplace. In other words, insecurity is usually used in the case of personal computer but not a proper variable to explain the usage behavior of wearable devices. Also, uncertainty is not a key factor in explaining technostress (Jeong, 2010; Jin, 2017). Based on those researches, we will use three factors of technostress: overload, intrude, complexity to analyze the relationship between technostress and intermittent discontinuance of wearable device, removing insecurity and uncertainty.

Overload means that IS users have to do more amount of work than before due to IS usage. Shin (2015) points out that the biggest reason of wearable device users abandoning their devices is overload. Lazar (2015) suggests that overload is the most meaningful factor affecting the discontinuance of smartwatches. In this point of view, this study selects overload for the research variable.

Intrude is the invasion of wearable device users because of usage. Shin (2015) shows that people stop using devices because they think that using wearable devices is invasive. As wearable device is used on users' body anytime, we select intrude as the second factor of technostress.

Complexity means how the users of devices feel complicated when they learn how to use the device. Kim (2017) suggests that the complexity of users for using wearable devices affect the dissatisfaction of users. We choose complexity as the third factor of technostress.

When ICT device users are under technostress, they tend to stop using their devices (Beaudry, 2005; Turel, 2014). A bunch of studies prove that technostress of IS causes the discontinuance of IS (Maier, 2015; Park, 2011, Lee, 2017). Technostress, in this study, is main explanatory variable affecting intermittent discontinuance of wearable device.

2.2 Intermittent discontinuance

In existing post-purchase behavioral studies, disruption means that a consumer who has bought or used a product or service more than once has been dissatisfied with the product or service and is not reusing it anymore. In other

words, discontinuation implies a permanent disabling of the user for the product. However, recent studies have pointed out that there is a limit to defining consumers' use behavior as such use / suspension dichotomy. Crandell (2011), who studied the disuse of SNS users, found that SNS users are repeating SNS disuse and reuse. Xin Xu (2017) found that the withdrawal of mobile services from consumers is temporary rather than permanent.

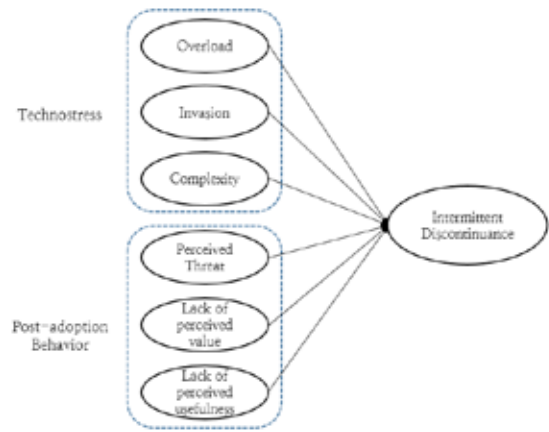
This temporary disruption is particularly noticeable in expensive digital devices. For wearable appliances are relatively high priced, consumers tend to reuse wearable appliances that have been discontinued due to psychological reasons such as sunk costs (Epstein, 2016). Clawson (2015) has raised the need for dynamic behavioral behavior research that classifies and observes behavior after acceptance of wearable technology into more diverse types rather than use / disuse.

Among them, Ravidran (2014) classified SNS users into three types of short-term breaks in use, suspended use, and controlled use. Xiao-Liang Shen (2017, 2018) defined these three types of discontinuity as a new variable called intermittent discontinuance and studied the use of wearable devices as a dependent variable. In this study, we refer to previous studies and redefine the use discontinuity as a "intermittent discontinuance" variable and consist of two sub-variables, using delayed use and controlled use.

Research model and methodology

The purpose of this study is to investigate the relationship between factors of technostress and post-adoption behavior and the intermittent discontinuance. In the previous study on technostress, three factors including overload, invasion, and complexity are selected as independent variables along with three factors of post-adoption behavior including perceived threat, lack of perceived value, and lack of perceived usefulness.

For the purpose of research, we will analyze 232 valid response data among 250 samples from google online survey from October 2018 to November 2018. After exploratory factor analysis for collected data, we will measure descriptive statistics and try correlation analysis. To validate hypotheses, we will use regression analysis with Durbin-Watson and p-value.



3. Conclusion & implications

The overall results will show how technostress and post-adoption behavior affect the intermittent discontinuance of wearable device. These findings will investigate the relationship between technostress and discontinuance of wearable technology and also provide a new insight about intermittent discontinuance of wearable users.

From a practical point of view, this study will indicate which concept and function of wearable device is preferred by users. In addition, this study will give a business strategy to appeal dissatisfied wearable device users.

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Tourism, Terrorism and Teenage Fantasies: Digitalising the Knowledge Hierarchy and the Economics of Change

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Introduction

Tourism has a new level of complexity in meeting the needs of a highly fragmented market made up of baby boomers, millennials, X-, Y- and Z- generations of consumers respectively. Furthermore, the tourism industry is shaped by paradigm shifts in cultural and social norms and changing needs of consumers based upon new knowledge and changes in perceptions. Each has varying requirements and levels of expectations which is complicated further by how their mindsets are informed and shaped.

Discussion

Contemporary society has evolved from an agricultural economy. Industrialisation which followed introduced mass employment and wealth and more disposable income which in turn started consumerism as we know it today. If we took post WW2 automation of our factories in the sixties as a starting point it can be presented leading elegantly into the current digital economy in four stages, Table 1.

Table1: The economies of change

ENVIRONMENT	Agricultural economy	Industrial economy	Knowledge economy	Digital economy
DRIVERS	Land and labour	Automation and robotics	Connectivity and social media	Cloud, AI and G2 and G3 (and G5)

The explosion of opportunities from the digitisation of society is a result in changes to behaviour of consumers from the 1950s. This is explained by four phases, Table 2

Table 2: The behaviours driving economies of change

		EXPERIENCES BASED INCREASED USE OF DIGITAL TECHNOLOGIES	
Experience economy	Attention economy	Sharing economy	Caring economy
From industry producing goods to consumers seeking services and experiences Pine II and Gilmore (1998)	Those offering goods and services with experiences need to try harder to gain the attention of their target group. Crawford (2015) and Davenport & Beck (2001)	Examples: Uber/Grab Facebook Air BnB Skyscanner/Kayak GoCompare	Examples: WATSON - legal Médecins Sans Frontières (MSF) International Open access research publications Bill and Belinda Gates Foundation

The final piece of the jigsaw that defines the mechanics of change is the changes we detect in the Knowledge Hierarchy, Table 3.

Table 3: Hierarchy of Knowledge

Wisdom	
Intelligence	
Knowledge	
Information	
Data	

Use of appropriate metrics makes the collection of data highly selective. Social media-based businesses such as Facebook, and others such as Google, Microsoft, Instagram, Twitter and more personal social media such as Tinder have opened up new and unique sources of data. Coupled to this is the development of data analytics by companies such as Cambridge Analytica which have used these data in expert ways to identify, for example, voters who have been undetected in the past. In the UK, Cambridge Analytica allegedly sold this expertise and data base to the 'Leave Campaign' involved in Brexit who were able to bombard them with more than one billion messages encouraging them to vote leave. It is alleged some of these messages contained fake facts! However, such was the success of this campaign that in the 2016 Brexit Referendum those leave campaigners who started as the underdogs were able to take victory by a narrow 51.9% margin! A similar development is alleged to have delivered victory to Donald Trump in the USA Presidential elections. The potential use of such techniques for data collection, analysis and interpretation and their use in highly targeted operations can be exciting, exhilarating and highly constructive. Equally, they can be frightening, daunting and even terrorising!

So what now? Tourism now has at its disposal many digital technologies: Cloud, 3G building up to 5G, IoT, Augmented Reality, VR, AI, Robotics etc. How do these fit into earlier ideas presented here on the digital environment, the experience economy and the hierarchy of knowledge?

In 2018 pre-Christmas holiday travels the whole of Gatwick Airport was brought to a standstill by alleged drone activity over the air space in the vicinity of the airport. (BBC News reported on 20 December 2018).

What happened?

The shutdown started just after 21:00 on Wednesday, when two drones were spotted flying "over the perimeter

fence and into where the runway operates from".

The runway briefly reopened at 03:01 on Thursday but was closed again about 45 minutes later amid "a further sighting of drones".

The airport said at about 12:00 a drone had been spotted "in the last hour".

In total, it is estimated that the incident caused major travel disruption, affecting about 140,000 passengers and over 1,000 flights. To-date no one has been charged. Was it even drones? Was it some teenagers fooling around? Or was it a terrorist plot, even a pilot run before a major terrorist incident? Those few days of terror affected the tourist trade at a most important time of the year. Families living in different continents who had not met in years may never meet again for the rest of their lives. Hotels which were struggling and with the Christmas tourist trade as their last hope for survival may have closed for good. That last chance to revive a failing relationship in that idyllic resort..... well, we will never know what might have happened.

On a more upbeat note, if we reinterpret the search for experiences as the new precondition for tourism, the introduction of terror or more important those experiences which are dangerous but which need high adrenalin, high octane initiatives such as Formula 1 racing, or Bungee Jumping or the Big Dip on top of the and similar stomach churning experiences can now be recreated using AI, 5G, AR and simulations that compare well with the real thing. We can walk with dangerous animals in our living rooms using VR. See a life-sized man-eating shark swimming about in our local gym! Or, using a combination of some of the most elegant technologies we could use all our teenage fantasies to terrorise others with mobile and remote-controlled drones fitted with AI with self-activating ammunition! An even more elegant act of terror can be perpetrated on the unsuspecting tourist through scanning credit cards in wallets at airports and tourist hotspots in far-away destinations and not least through hacking. My list is not exhaustive by any means.

Let me end with a revised scenario of the Hierarchy of Knowledge. This assumes that we are far from having established sufficient safeguards to protect us from this new paradigm of the digital age. Cyber security, new rules on governance and compliance and transparency and ethics.

The responses given by Mark Zuckerberg at the congressional hearing, as lawmakers unleashed a litany

of complaints about the company's privacy practices, its failure to fight the opioid crisis and the lack of diversity within its executive ranks. : The Washington Post recorded on 18 April 2018, "Facebook's data practices were the official topic of the hearing, prompted by its entanglement with Cambridge Analytica, a political consultancy that improperly accessed 87 million Facebook users' names, "likes" and other personal information. At one point in the hearing, Zuckerberg acknowledged that his own data had been accessed by Cambridge Analytica.

Table 4: Hierarchy of Digital Knowledge and Some Scenarios for Applications

Knowledge economy	Digital technologies	Digital economy
Wisdom	AI and IOT, mobile and remote technologies	Can bankrupt countries – IMDB in Malaysia Influence elections – POTUS? Give tourists new and different experiences to get them to spend as their spending declines? Or rob them of their credit cards? Get you a romantic partner from distant lands and persuade you that you were meant for each other until your bank balances have been drained. Mount a coordinated terrorist attack with pre- programmed instructions!
Intelligence	Artificial intelligence and quantum computation Data analytics Simulations	AI can be deployed to determined which segments to target. How frequently to bombard you with fake news.
Knowledge	Cloud, Digital marketing	Knows what to do with this information to derive more tangible and intangible benefits
Information	Social networks and use of metrics and analytics	Big brother knows all about you, and your secrets
Data	Social media G2, G3, G5	Collected through Social Media and other vehicles (without permission?)

Conclusion

This paper was designed to raise attention on the extremely weak security surrounding the tourism industry. Examples drawn from life examples and from fantasy serve to illustrate that teenagers can be better at extra-ordinary creativity and innovation as they can, if unchecked and without regulatory discipline unleash devastation affecting the masses.

The push for greater vigilance and protection of consumers and stakeholders in the tourism eco system is a responsibility that must be taken seriously by those participating in this ITAM21 with its focus on tourism.

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Design of an In-house Cryptocurrency Information Service based on Blockchain

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Abstract

Blockchain is attracting attention in the global IT market. Blockchain is a technology applied to safely protect Bitcoin and secure the transaction contents. The core principle of blockchain is “sharing”, and it is considered as a technology that can complement ICBM (Internet of Things, Cloud, BitData, Mobile), which is the core platform of the fourth industrial revolution. It is a successful example of building an ecosystem of IT services using P2P networks. Blockchain based on 'ledger sharing', 'tamper prevention', and 'reliability' is considered to have innovative potential in the fields of currency, finance, record keeping, contracts, and public services. In this study, we use the potential of blockchain as a new technique for the revitalization of in-house currency within an organization. The study design includes four different processes—currency issuance, transaction, settlement, and adjustment for the use of cryptocurrency. Using blockchain technologies that are currently driving the industry, we design a cryptocurrency for an organization by converting the existing electronic currency into a blockchain-based cryptocurrency and applying it within the organization.

Keywords

Blockchain, bitcoin, cryptocurrency

1 Introduction

Blockchain is attracting attention in the global IT market. Blockchain was first referred to as the technology supporting the Bitcoin cryptocurrency by Satoshi Nakamoto in 2009. Blockchain is a technology applied to safely protect Bitcoin and secure the transaction contents[1]. The general process of Bitcoin production is password mining. Once password mining is successful, then it forms a block through a process of consensus. Blocks are then chained together by connecting the front and rear blocks. Here, compensating the coin miners for password mining is a general mining process of Bitcoin. There are approximately 20,000 cryptocurrencies around the world of which we are aware of approximately 2,000 types. However, cryptocurrencies commonly known to us are Bitcoin, Ethereum, Ripple, Gnosis, Litecoin, Ethereum Classic, etc. So what is the fundamental reason for cryptocurrencies to be receiving attention in the global economy? The core principle of blockchain

used in cryptocurrencies is “sharing”, and blockchain is considered as a technology that can complement ICBM (Internet of Things, Cloud, BitData, Mobile), which is the core platform of the fourth industrial revolution[2]. Blockchain as a new computer and network has currently been constructed as one of the safest and most reliable technologies globally and is expected to lead a new era of innovation. In this study, we aim to promote blockchain’s use by redesigning an in-house cryptocurrency in an organization from the existing inhouse electronic currency version to the distributed ledger, transparent, and ledger shared version of blockchain for safety and reliability. We use the blockchain technology that is currently leading the industry for information service within the university and apply an improved blockchain-based cryptocurrency. The blockchain-based in-house cryptocurrency used in this study does not require huge IT overheads or large infrastructure compared to the existing electronic currency; thus, we expect it to be of use to the operators.

2 Related works

2.1 Definition and characteristics of blockchain

The blockchain is a method of distributing and storing data in bundles and blocks across all nodes participating in a data transaction. Thus, transaction information is not stored in a central server but distributed among various computers attached to different networks[3–4]. Blockchain is based on ledger sharing, tamper prevention, and reliability. Ledger sharing of blockchain refers to sharing transaction ledgers with the nodes and participants of all networks involved. Therefore, transactions are possible only in a distributed (P2P) network environment. Transaction records in a blockchain are owned by all the network participants, and therefore they cannot be modified. The existing transactions can only be modified by a chain of blocks connected to the blockchain, thereby preventing tampering of transaction data and ensuring integrity. In other words, blockchain is highly reliable because the process of reading, inputting, and handling data is integrated through data sharing by the participants of multiple networks and approved by multiple agreements [5].

2.2 Types of blockchain and smart contracts

Blockchain is classified into three blockchain types known as public blockchains, private blockchains, and consortium blockchains depending on the characteristics of the network participants and the scope of system access. In 2013, Vitalik Buterin was able to process all types of contracts using blockchain technology for financial transactions such as payment, settlement, and transfer. This was the origination of Smart Contracts. Initially, Buterin unsuccessfully attempted to implement Smart Contracts by modifying a part of Bitcoin. He only achieved success by creating a cryptocurrency called Ethereum and implementing Smart Contracts through forking Bitcoin. We have named this Blockchain 2.0. Blockchain 2.0 technology allows developers to modify contract terms and content directly. Thus, in principle, it allows users to implement all types of contracts on the Ethereum platform. However, it is not easy for members of the general public to modify Smart Contracts directly because they would need to be familiar with the Java-based development language called Solidity.

3 In-house cryptocurrency design based on blockchain

3.1 Overview of the proposed system

In this study, we design an in-house cryptocurrency using the public and private blockchains. The study design includes four different processes—currency issuance, transaction, settlement, and adjustment for the use of cryptocurrency. Because currency issuance, transaction, settlement, and adjustment are implemented in the central system, we designed them using the public blockchain. However, for the user's electronic wallet using real currency, we designed using a private blockchain to ensure transparency in data retrieval and recording.

3.2 Design of the proposed system

The overall structure of the proposed system for processing an in-house cryptocurrency based on blockchain is as follows. The in-house cryptocurrency based on blockchain is charged into each individual's electronic wallet at the currency charging station as a reward for the student's labor service in the university. If the cryptocurrency is 100hw (Hyupsung Won), it has the same cash value as 100 won. Students can generate transactions using the cryptocurrency in their electronic wallets at the shops in the university. The shops receive the cash later after deducting a certain fee through the adjustment process. Therefore, the four processes—currency issuance, transaction, settlement, and adjustment—are used as the fundamental flow of the in-house cryptocurrency based on blockchain. In relation to the currency issuance of the proposed system, the university's currency issuing department charges individual electronic wallets with the cryptocurrency. The charged cryptocurrency can be used at various shops in the university, and the shops involved in these transactions will pay a 0.15% fee to the cryptocurrency operation support fund through the cryptocurrency adjustment process. In addition, the students using the cryptocurrency can check the places in which they used their cryptocurrency and can enquire into the flow of the currency used. The technology now used is designed using Smart Contracts. The proposed system consists of four modules: issuing money, trading money, making money and settling money. Figure 2 provides a brief description of the cryptographic currency service flow chart. The

system will be implemented in the configuration of Figure 2.

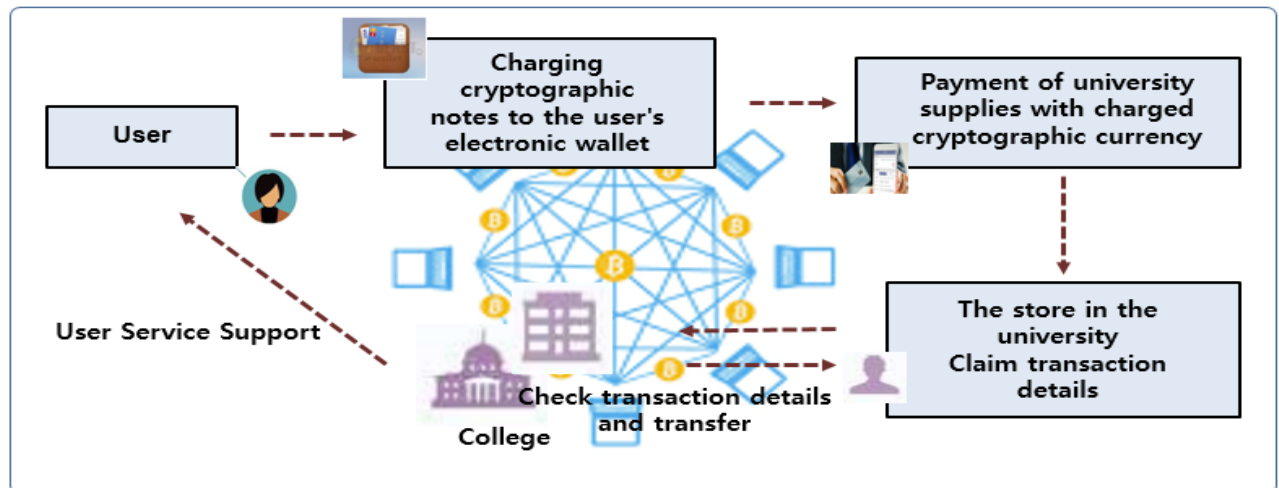


Figure 1 Proposed System Service Flow

4 Conclusion

Interest in blockchain technologies is constantly growing, and at the same time, interest in cryptocurrency is also increasing [6]. In Korea, research on blockchain and practical use case examples are increasing daily. Academic circles maintain that business success between 2020 and 2025 will be determined by changes in the industrial service ecosystem arising from blockchain technologies. In other words, Bitcoin was a successful example of building an ecosystem of IT services using P2P networks, and this was the origin of the Bitcoin cryptocurrency.

In this study, we propose transparent asset management for members by applying the basic principles of cryptocurrency to a university and replacing the existing electronic currency used in the university with an equivalent cryptocurrency. In college, the university becomes the owner of the encryption money and issues money. The process of settling and settlement is managed as an encryption currency using the blockchain. We design a monetary management system, which is self-operated without interference from external agencies, as a blockchain in this paper.

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On Defensive Behaviors in IT Purchasing

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Abstract

IT purchasing is buying IT goods or services. Depending upon how well to plan and assess purchasing demands of users, to solicit vendors, and to contract with the selected vendors, the outcomes of IT investments will vary significantly. Because by its nature it involves diverse stakeholders and many peculiar characteristics of IT goods or services, it is apt to be carried away by defensive behaviors. Defensive behaviors are reactive actions to reduce a perceived threat to or avoid an unwanted demand of an individual or group. Despite the importance of IT purchasing in today's digital economy, the nature of these defensive behaviors in IT purchasing has not yet been investigated. In this study we aim to identify what types of defensive behaviors are revealed in the process of IT purchasing and what factors are causing these defensive behaviors. To this end, we conduct a survey targeting IT practitioners. As a result, it provides nine defensive behavioral patterns and, for each of them, its causes and consequences are described.

Keywords

IT-purchasing, defensive behaviors, defensive decisions

1. Introduction

Firms in digital era are placing more emphasis on information technology (IT) [Bharadwaj, et al., 2013]. Accordingly, a size of IT investment continues to be increasing. Spiceworks [2019], an IT marketing consulting firm, estimated that 38% of companies expect their IT budgets to increase in 2019, while 51% expect no change and only 6% expect a decrease.

Nevertheless, the benefits of such large IT investments have not been fully demonstrated [Bharadwaj, 2000; Carr, 2004]. An expectation that an introduction of IT would lead to a sharp increase in productivity has not been realized in many cases. Brynjolfsson [1993] calls this as the productivity paradox.

The acquisition of IT products or services involves two consecutive processes: making a contract and fulfilling the contract [Muffatto, M. and Payaro, 2004]. The former involves a set of activities including planning purchasing demands, soliciting vendors, and contracting with the selected vendors. In this paper, we call this *IT purchasing*. The latter, on the other hand, represents activities to develop goods or services and to operate or manage them. This is referred to as *IT fulfillment*. IT fulfillment may be

executed internally using tools or technologies purchased from external entities. In this case, deciding which tools or technologies to purchase may play a big role in not only IT fulfillment but also the entire IT acquisition process. In other words, the outcomes of IT investments will depend significantly upon IT purchasing decisions [Verville and Halingten, 2002; Heckman, 2003]. Peterson et al. [2013] stressed that a firm can improve competitive advantage through purchasing excellence.

Characteristics of IT goods or services put an added burden on IT purchasing managers. Specifically, most IT goods or services are customized for an individual's or organizational unit's requirements [Moe and Päivärinta, 2013]. In addition, IT purchasers often bear the risks of hasty decision-making even before user needs are concretely fixed or reconciled from organizational perspectives [Moe and Päivärinta, 2013]. Similarly, IT purchasers frequently choose cutting-edge technologies that have never been introduced in their firm instead of re-ordering previous items, which is very common in physical goods purchasing.

In practice, owing to the above factors, IT purchasing is often executed in a quite unsystematic manner [Heckman, 1999; Snijders and Tazelaar, 2005]. Although Heckman

[1999]'s survey targeted IT procurement practitioners employed by large companies in North America, only 46% of the responding companies had established separate units dedicated to IT purchasing, and only 38% had formalized job descriptions for the role of IT purchasing. In their study on IT purchasing in Netherlands, Snijders and Tazelaar [2005] found out that rigid rules and procedures concerning IT purchasing requires lots of management involvement but do not contribute to the reduction of purchasing-related problems. Moe and Päiväranta [2013] studied on IT purchasing in the Norwegian public sector and found out that there exists much difference between challenges selected by CIOs and purchasing managers and those by vendors.

These results imply that there is a plenty of misunderstanding, misconception, and distrust among stakeholders involved in IT purchasing. In such circumstances each stakeholder has no choice but to act in a self-defensive manner rather than an organization goal-oriented manner. Such defensive behaviors are indeed prevalent in today's organizations [Ashforth and Lee, 1990]. Defensive behaviors are defined as reactive and protective actions intended to reduce immediate or potential threats [Ashforth and Lee, 1990; Tesser et al., 1996]. As these defensive behaviors not only are harmful per se but also have an organization miss an opportunity to learn and improve, social psychology has dealt with this issue using many different theories [Argyris, 1990; Sherman and Cohen, 1996; Tesser, 2001].

A basic premise of these theories is that people continue to pay an attention to events or information that are threatening to their self-integrity and, if they occur, take a step to maintain the level of self-integrity [Tesser, 1998]. There exist various mechanisms such as cognitive dissonance [Festinger, 1957], social comparison [Festinger, 1954], self-affirmation [Steele, 1988]. In addition, Tesser et al. [1996] have shown that these various mechanisms of self-regulation appear to support a higher-order goal, self-esteem, and are substitutable with each other.

There have been a great number of studies to investigate defensive behaviors in social psychology. However, studies of defensive behaviors in a particular industry, firm, or domain exist only a few. The medical domain has studied why and how medical doctors engage in defensive decision making such as ordering clinically unnecessary examinations such as MRI or CT [Studdert

et al., 2005; Bishop et al., 2010]. The only study we have found in organizations other than hospitals is Artinger et al.'s [2018]. They studied 950 managers in a public organization to find how often defensive decisions are made and what caused these defensive decisions.

Our study is to investigate defensive behaviors in IT purchasing. From a survey of IT purchasing practitioners, we are going to elicit several defensive behaviors in IT purchasing and then, for each defensive behavior, describe its type, causes, and potential consequences.

2. Literature review

2.1 IT purchasing studies

The nature of IT purchasing is different from purchasing physical goods in manufacturing firms. First, it often deals with cutting-edge technologies or ideas that have never been introduced before. When these innovations are adopted, the costs and risks to bear are great and quite often larger than the advantages to gain [Verville and Halingten, 2002, Carr, 2004]. Second, it consumes a large portion of budgets, and it will continue to do so [Heckman, 1999; Verville and Halingten, 2002].

Third, IT purchasing usually requires an extensively customized solution [Heckman, 1999, Keiichiro, I.; Hajime, 2005; Moe and Päiväranta, 2013], which demands a specific definition of user requirements. A purchasing decision may have to be made long before user requirements are collected from all potential user groups or before these requirements are set within an organization [Saarinen and Vepsäläinen, 1994]. Lastly, due to the nature of IT markets, the number of vendors purchasing managers should search for is large, and the number continues to increase [Heckman, 1999; Moe and Päiväranta, 2013]. Heckman [1999] emphasized that such a circumstance was caused by a decline in leading mainframe vendors and the advent of the open computing paradigm and that this lays a greater burden on purchasing professionals during the vendor assessment process.

Because of these characteristics, IT purchasing is considered uncertain and much risky [Heckman, 1999, Verville and Halingten, 2002]. Therefore, IT purchasing could provide an excellent opportunity for MIS researchers. Nevertheless, as shown in IS outsourcing studies [Dibbern et al., 2004], they have had more interest in the issue of IT fulfillment, i.e., the later stage of IT adoption, and they have paid less attention to the issue of purchasing, which may be more crucial because it affects

the quality and outcomes of IT fulfillment [Heckman, 1999; Johansson, 2012; Moe and Päivärinta, 2013]. Only a few studies on IT purchasing have been performed.

The IT purchasing studies can be classified into two groups. The first is an understanding on IT purchasing process. The IT purchasing process was first studied by Geisler and Hoang [1992], who attempted to identify the logical steps that service sector companies follow during the IT purchasing process. Five distinguishable steps were found: articulating the need for IT, determining which organizational units require new or modified IT, selecting the technology, selecting the suppliers, and authorizing the deal. Muffatto and Payaro [2004] asserted that procurement and fulfillment are two key processes in supply chain management.

The other group is an identification of challenges related to IT purchasing. Through a Delphi study of 46 purchasing managers, CIOs, and vendor representatives in the Norwegian public sector, Moe and Paivarinta [2013] attempted to identify the challenges and how they are different depending upon stakeholders. Purchasing managers selected, as the top three challenges, 'change of work processes and benefits realization', 'clear requirements specification', and 'integration, compatibility' and CIOs did 'clear requirements specification', 'finding and using good assessment criteria', and 'integration, compatibility'. In contrast, vendor representatives picked 'too much focus on costs', 'feasible requirements', and 'the vendors don't get to show their qualities'. Purchasing managers and CIOs have very similar views while vendor representatives have a quite different view. From this result, we can also figure out that some stakeholders are concerned about other people's business. For instance, the top-priority challenge for IT purchasing managers, 'change of work processes and benefits realization' has a lot more to do with users or functional managers.

In addition, from the examination of three IT purchasing projects in a Finnish university, Salonen [19] identified a set of critical success factors for IT procurement, such as successful project management, emphasis on strategy execution, clear governance, and organizational learning. What draws our attention is that an organization ought to have a clear governance structure to eliminate conflicting interests among different stakeholders.

The lack of governance scheme was also pointed out by Heckman [1999] who attempted to identify how IT

suppliers are managed by IT procurement practitioners in North American firms. Contrary to the general expectation that IT suppliers would be managed in a systematic way by a separate team, he found that most companies tend to manage their supplier relationships in an informal manner. Such a lack of institutionalization in supplier management may be the result of a situation in which IT purchasing managers feel emotionally obliged to execute strategic purchasing but realistically confront many challenges or difficulties associated with IT purchasing. In other words, to achieve corporate objectives, they should rely more on competitive bidding, arm's-length relationships, and strong bargaining power rather than collaborative relationships with suppliers, which make them interdependent and consequentially vulnerable [Heckman, 1999].

Despite an identification of problems or challenges related to IT purchasing, the existing IT purchasing studies did not dig into the inside of their behaviors. It can be expected that a close examination of behaviors related to IT purchasing would guarantee a better understanding of their intentions and hopefully allow us to figure out some remedies for IT purchasing problems.

2.2 Defensive behaviors in organizations

Some behaviors in an organization are far from rationality. The real problem is how an individual behaves when organizational objectives clash against her self-protection reasons. People often act defensively in order to reduce a perceived or promising threat. Ashforth and Lee [1999] defined 'defensive behaviors' as reactive and protective actions intended to reduce a perceived threat to or avoid an unwanted demand of an individual or group. As an example of such behaviors, people often make defensive decisions where they select, instead of the best option for their organization, options less than the best so that they can be more protected themselves from potential negative consequences in the future [Artinger et al., 2018].

For a long time, social psychologists understood such defensive behaviors as a harmful factor for organizational performance. In addition, in that these behaviors make us miss an opportunity to learn and grow from these negative events, various theories have been proposed.

A basic premise of these theories is that people continue to pay an attention to events or information that are threatening to their self-integrity and, if they occur, take a step to maintain the level of self-integrity [Tesser, 1998]. There exist a variety of mechanisms such as

cognitive dissonance [Festinger, 1957], social comparison [Festinger, 1954], self-affirmation [Steele, 1988].

Cognitive dissonance theory [Festinger, 1957] states that, when a person's belief clashes with newly perceived threats, he or she becomes psychologically uncomfortable and then, to reduce the cognitive dissonance, tends to change beliefs, actions, and the perception of action. Another theory proposed by Festinger [1954], social comparison theory, assumes that people have an internal desire to gain accurate self-evaluation and proposes that people are motivated to compare themselves to others in order to reduce uncertainty and justify themselves. In addition, Steele [1988] proposed a self-affirmation theory that, when people confront with information that contradicts or threatens their self-integrity, people can be directed to less likely experience distress and act defensively by providing them with new information that has a personal value on them and belongs to domains other than the problem domain.

These self-defense mechanisms turned out to be completely different with one another. Tesser et al. [1996] have shown that these various mechanisms of self-regulation appear to support a higher-order goal, self-esteem, and are substitutable with each other. However, most of these studies were executed in experiment environments.

The defensive behaviors in organization context were introduced by Ashforth and Lee [1999]. They produced a typology of defensive behaviors in organizations and a list of organizational and individual antecedents of defensive behavior. 'To avoid action', and 'To avoid blame', and 'To avoid change' are the three major types of defensive behavior. However, there is a question with the relevance of 'to avoid action' because, in practice, people in organizations are generally not allowed to act nearly nothing. This situation is close to self-sabotage behavior, not defensive behavior. Another shortcoming of this study is that only conceptual points are provided.

Thereafter, these defensive behaviors seen in real organizations were also studied. The most applied domain is of medical entities. Studdert et al. [2005] and Bishop et al. [2010] have studied why and how medical doctors engage in defensive decision making such as ordering

clinically unnecessary examinations such as MRI or CT.

The only study we till lately have found in organizations other than hospitals is Artinger et al.'s [2018]. They studied 950 managers in a public organization to find how often defensive decisions are made and what caused these defensive decisions. This study studied the frequency of defensive decisions in a public entity and, however, did not examine the exact nature of defensive behaviors. In addition, studies of defensive behaviors related to IT purchasing were not found yet.

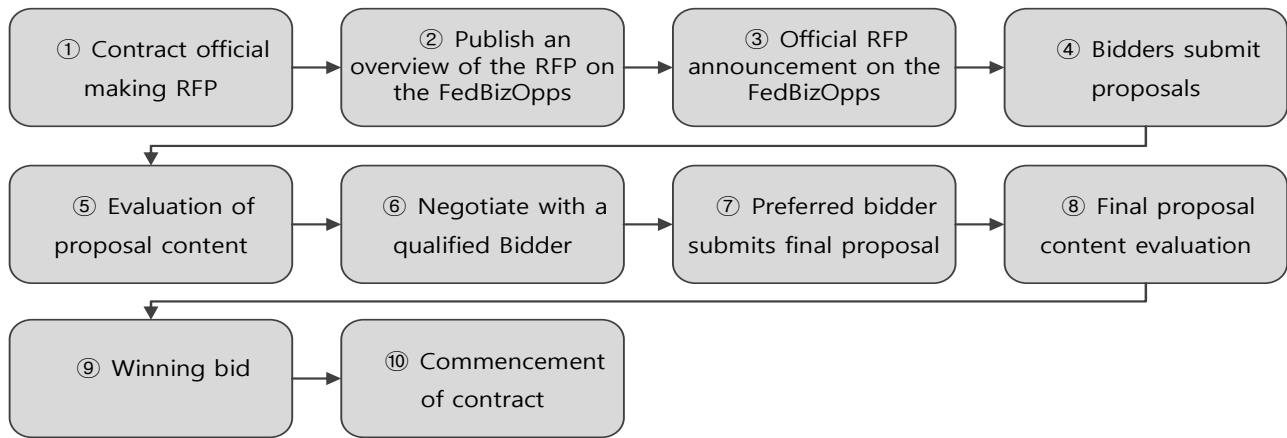
3. IT purchasing process

Purchasing is the activity of buying goods or services necessary to accomplish the goals of an organization. Some similar terms exist in the field. The term *procurement*, commonly defined as obtaining or buying goods or services, is interchangeable with *purchasing*. The only distinction is that *procurement* has been used mainly in the public domain, while the private domain prefers the term *purchasing* [Quayle, 2000; Arlbjørn, J.; Freytag, 2012]. The present study uses these two terms interchangeably.

The term *acquisition*, in contrast, covers the entire lifecycle of targeted end products or systems. The Defense Acquisition University (DAU), which was established to develop qualified acquisition professionals in the U.S. defense domain, has defined *acquisition* as the act of conceptualization, initiation, design, development, testing, contracting, production, deployment, logistics support, modification, and disposal of other systems to satisfy the organization's mission [Jones, 2009]. In this regard, we understand *acquisition* as a much wider concept than *purchasing* or *procurement*.

To come up with a standard IT purchasing process, we have reviewed existing IT purchasing procedures. United States federal government provides Federal Acquisition Regulation (FAR) procedures, which a set of principles that govern the government procurement process. It regulates purchasing of goods and services by government. Within FAR, there are procedures for different purchasing types, including simplified acquisition procedure, sealed bidding procedure, and negotiated procurement procedure. Figure 1 describes a negotiated procurement procedure in FAR.

Figure 1. Processes defined at a negotiated procurement procedure of FAR



In addition, industrial procurement procedures were also proposed by Johnston and Bonoma [1981], Abratts [1986], and van der Valk and Rozemeijer [2009]. Each of them is described in more detail in Table 1.

Reflecting FAR and these studies, we have come up with a general IT purchasing process model as shown in Table 2. We used a Plan-Do-See framework which is a simplified version of a wide-known quality management process model, Plan-Do-Check-Act [Matsumoto et al., 2006; Deming, 2018].

Table 1. Examples of industrial procurement procedures

Name	Author	Major steps
Purchase Process for Capital Equipment and Services	Johnston & Bonoma	1. Initiation (Need recognition, Fact finding) 2. Specification 3. Search 4. Formalization 5. Evaluation
Industrial Buying in High-Tech Markets	Abratts	1. Recognizing the need to purchase 2. Determining product specifications 3. Deciding which suppliers to consider 4. Obtaining quotations and proposals 5. Evaluating quotations and proposals 6. Final product or supplier selection
Buying business services: towards a structured service purchasing process	van der Valk & Rozemeijer	1. Specify 2. Request for information 3. Detailed specification 4. Select 5. Contract 6. Order 7. Expedite 8. Evaluate

Table 2. A model of IT purchasing process

Plan	Definition of Needs
	Sending RFI
	Preparing RFP
	Publishing RFP
Do	Proposal Submission & Evaluation
	Selecting a preferred bidder & Negotiating
	Final Proposal Submission & Contracting
See	Fulfilling Contract
	Performance Evaluation

4. Identifying defensive behaviors in it purchasing

4.1 Soliciting defensive behaviors

First, we attempted to solicit all different kinds of issues concerning IT purchasing. An e-mail survey method was used for this purpose. We sent the questionnaire to 100 professionals currently working at IT-related firms and having an experience of more than 10 years. Their firms belong to system integration, systems management, systems/applications package software, hardware, consulting, and IT services.

The main part of the questionnaire was to ask survey subjects to write out issues or problems they have experienced over the process related to IT purchasing. They were asked to list defensive behaviors by the sub-phase as shown in Table 2.

A total of 71 questionnaires were returned. A demographic information about the respondents is shown in Table 3. It may be noted that a variety of IT specialists were included in the respondents.

Table 3. Demographic information about the respondents

Category	<15 yrs	>15 yrs	Total	Ratio
Board-level	-	4	4	5.6%
Manager	4	2	6	8.5%
Planner	3	2	5	7.0%
Designer	5	2	7	9.9%
Programmer	16	-	16	22.5%
Engineer	5	6	11	15.5%
Consultant	12	3	15	21.1%
Purchaser	5	2	7	9.9%
Total	50	21	71	100%

A total of 53 issues or problems were collected. These are shown in Table 4.

Table 4. List of issues or problems related to IT purchasing

Phase	Sub-phase	Issues or problems	
Plan	Definition of Needs	1	IT purchasing is initiated not by internal needs but by external factors
		2	IT purchasing may be initiated by managerial influences
		3	Business needs are often defined by consultants
		4	Business needs are often defined by SI or vendors
		5	IT purchasing is led by integrated purchasing office
		6	IT purchasing is carried out on one-time basis
	Sending RFI	1	Asking external entities to write RFI
		2	Relying too much on information and estimates provided by external entities
		3	It is hard for internal staffs to complete writing RFI
		4	A passive participation of IT dept. personnel
		5	A lack of trust on opinions of IT dept.
	Preparing RFI	1	Throwing the job of writing RFP on external entities
		2	RFP is written heavily depending upon info. Provided by external entities
		3	Much of requirements in RFP are accommodated to the given budget
		4	Use a stereotypical RFP form against all different purchases
		5	Assessment criteria are based on price and technology
		6	Hard to get a period enough to complete IT purchasing
		7	RFP is announced for unspecified vendor firms
Do	Proposal Submission & Evaluation	1	Proposal is written perfunctorily and hard to be evaluated
		2	Technical details are not easily represented in RFP
		3	Establishing criteria for assessing professionalism and technicality is not easy
		4	Tendency to generalize and quantify professionalism and technicality
		5	Preferring to use outside appraisers
		6	Being unable to present clear-cut target value for BMT/PoC
		7	BMT/PoC is executed perfunctorily
		8	The result of assessment depends upon price
	Selecting a preferred bidder & Negotiation	1	Perceiving the negotiation as a way for cost-cutting
		2	Purchaser deliberately makes the contract less clear
		3	Hard to come to an agreement about specifics of contract between stakeholders
		4	Lack of participation by IT dept. in the process of negotiation
		5	Delegating responsibility for fulfilling a contract to a preferred bidder
		6	A preferred bidder tends to bear unfair contracts for follow-up business
		7	Negotiating party and purchasing party are divided
	Final Proposal Submission & Contracting	1	Not taking a final evaluation after the end of negotiation
		2	Results of negotiation are not reflected in the final proposal
		3	Results of negotiation are not reflected in the contract
		4	Lack of impact analysis on modifications made by internal stakeholders
		5	Cost-cutting may lead to a modification in requirements specification

See	Fulfilling Contract	1	Users may submit new requirements or changes in requirements
		2	Shifting the responsibility for requirements modification to IT dept.
		3	Shifting the responsibility for requirements modification to vendors
		4	Shifting the responsibility for fulfilling a contract to IT dept.
		5	Purchasing office avoids an involvement in the fulfillment process
		6	IT purchasing is led by outside vendors
		7	Hard to get a cooperation from internal organization in IT purchasing
	Performance Evaluation	1	There are no clear criteria for determining performance
		2	There are no established criteria for evaluating the use of IT
		3	Purchasing office evaluates performance only in terms of cost-cutting
		4	Users are not subject to be evaluated for IT purchasing
		5	Organization perceives the ultimate responsibility for IT purchasing as the inherent role of IT dept.
		6	Shifting the responsibility for IT purchasing to vendors
		7	A verification of IT purchasing outcomes is taken the lead by outside firms
		8	Shifting the responsibility for running IT systems to IT dept.

To identify a list of problematic behaviors, we, based on these 53 issues, made some adjustment such as combining and deletions. This process and its results can be described in a table format, as shown in Table 5.

Table 5. Analysis of Problematic Behaviors related to IT purchasing

Phase	Sub-phase	Problematic behaviors		Problematic behaviors
Plan	Definition of Needs	1	IT purchasing is initiated not by internal needs but by external factors	1) Users are passive in needs definition
		2	IT purchasing may be initiated by managerial influences	
		3	Business needs are often defined by consultants	
		4	Business needs are often defined by SI or vendors	
		5	IT purchasing is led by integrated purchasing office	2) Leaving all decisions concerning IT purchasing to the general purchasing office
		6	IT purchasing is carried out on one-time basis	3) Not taking an enterprise-wide strategic approach to IT purchasing
	Sending RFI	1	Asking external entities to write RFI	4) Relying too much on vendors, instead of conducting it on their own
		2	Relying too much on information and estimates provided by external entities	
		3	It is hard for internal staffs to complete writing RFI	
		4	A passive participation of IT dept. personnel	
		5	A lack of trust on opinions of IT dept.	5) Not trusting opinions of IT dept. about vendors

	Preparing RFI	1	Throwing the job of writing RFP on external entities	Similar to 4)
		2	RFP is written heavily depending upon info. Provided by external entities	Similar to 4)
		3	Much of requirements in RFP are accommodated to the given budget	Not a problem when taking the business circumstances into consideration
		4	Use a stereotypical RFP form against all different purchases	6) Following blindly the previous methods or forms
		5	Assessment criteria are based on price and technology	Not a problem when taking the business circumstances into consideration
		6	Hard to get a period enough to complete IT purchasing	7) Accepting project term or budget as it is, without much consideration
		7	RFP is announced for unspecified vendor firms	Not a problem when a private contract is not allowable currently
Do	Proposal Submission & Evaluation	1	Proposal is written perfunctorily and hard to be evaluated	8) Relying on quantitative evaluation of proposal evaluation, instead of qualitative analysis
		2	Technical details are not easily represented in RFP	9) Being unable to assess accurately the core behind latest technologies
		3	Establishing criteria for assessing professionalism and technicality is not easy	
		4	Tendency to generalize and quantify professionalism and technicality	
		5	Preferring to use outside appraisers	10) Shifting the evaluation to the outside
		6	Being unable to present clear-cut target value for BMT/PoC	Similar to 9)
		7	BMT/PoC is executed perfunctorily	Similar to 9)
		8	The result of assessment depends upon price	11) Preferred a price-centric proposal evaluation approach which is more disputable than technology evaluation
	Selecting a preferred bidder & Negotiation	1	Perceiving the negotiation as a way for cost-cutting	Similar to 11)
		2	Purchaser deliberately makes the contract less clear	12) Writing deliberately the contract to a nicety
		3	Hard to come to an agreement about specifics of contract between stakeholders	13) Being unable to reach an agreement in the contract by a specific substance
		4	Lack of participation by IT dept. in the process of negotiation	Similar to 2)
		5	Delegating responsibility for fulfilling a contract to a preferred bidder	Not a problem when taking the business circumstances into consideration
		6	A preferred bidder tends to bear unfair contracts for follow-up business	14) Leaving all decisions concerning IT purchasing to vendors

		7	Negotiating party and purchasing party are divided	15) Avoiding taking ultimate responsibility by not signing the document
	Final Proposal Submission & Contracting	1	Not taking a final evaluation after the end of negotiation	
		2	Results of negotiation are not reflected in the final proposal	
		3	Results of negotiation are not reflected in the contract	
		4	Lack of impact analysis on modifications made by internal stakeholders	
		5	Cost-cutting may lead to a modification in requirements specification	Similar to 3)
See	Fulfilling Contract	1	Users may submit new requirements or changes in requirements	16) Submitting belated modifications in requirements defined
		2	Shifting the responsibility for requirements modification to IT dept.	17) Shifting all responsibility to IT dept.
		3	Shifting the responsibility for requirements modification to vendors	Similar to 14)
		4	Shifting the responsibility for fulfilling a contract to IT dept.	Similar to 17)
		5	Purchasing office avoids an involvement in the fulfillment process	18) Purchasing office wanting to withdraw from matters
		6	IT purchasing is led by outside vendors	Similar to 14)
		7	Hard to get a cooperation from internal organization in IT purchasing	Similar to 3)
	Performance Evaluation	1	There are no clear criteria for determining performance	19) Deliberately making final objectives
		2	There are no established criteria for evaluating the use of IT	of IT purchasing blurred
		3	Purchasing office evaluates performance only in terms of cost-cutting	Similar to 3)
		4	Users are not subject to be evaluated for IT purchasing	20) Users use IT, but do not take any responsibility for IT
		5	Organization perceives the ultimate responsibility for IT purchasing as the inherent role of IT dept.	Similar to 17)
		6	Shifting the responsibility for IT purchasing to vendors	Similar to 14)
		7	A verification of IT purchasing outcomes is taken the lead by outside firms	Similar to 10)
		8	Shifting the responsibility for running IT systems to IT dept.	Similar to 17)

From the above analysis 20 kinds of problematic behaviors related to IT purchasing were identified. We are going to elicit defensive behaviors from these 20 problematic behaviors. We claim that a defensive behavior underlies various problematic behaviors. In this sense we mean a defensive behavior by a generic concept of behaviors which can occur in a variety of problematic behaviors.

To elicit a set of defensive behaviors, we examined the problematic behaviors by analyzing causes of these behaviors. For each problematic behavior, we asked a series of questions such as ‘why is a particular stakeholder acting like that’, ‘Isn’t there any other way to act to serve the organizations, instead of his/her own account’, and ‘Under what circumstances could he/she act differently’. Then, by comparing the responses to these questions with those of other behaviors, we have come up with 9 defensive behaviors. The list of defensive behaviors is shown in Table 6.

5. Analysis of defensive behaviors in it purchasing

We have found a set of defensive behaviors related to IT purchasing. To have a better understanding of these behaviors, we may have to apply them to the model of defensive behaviors. The Ashforth and Lee ‘s model was chosen for this purpose. Ashforth and Lee [2000] asserted that there are three different types of defensive behaviors: avoid action, avoid blame, and avoid change. For each type, a set of sub-types were also suggested. For instance, ‘To avoid action’ type is divided into ‘Overconforming’, ‘Passing the buck’, ‘Playing dumb’, ‘Depersonalizing’, ‘Smoothing and stretching’, and ‘Stalling’.

Table 6. Defensive behaviors related to IT purchasing

N.	Problematic Behaviors	Defensive Behavior
1	Users are passive in needs definition	1. People are not devoted to their role
2	Leaving all decisions concerning IT purchasing to the general purchasing office	2. People shift their duties to others
3	Not taking an enterprise-wide strategic approach to IT purchasing	3. People stick to existing methods
4	Relying too much on vendors, instead of conducting it on their own	Similar to 2
5	Not trusting opinions of IT dept. about vendors	Similar to 1
6	Following blindly the previous methods or forms	Similar to 3
7	Accepting project term or budget as it is, without much consideration	4. People do not ask a question about decisions made by others
8	Relying on quantitative evaluation of proposal evaluation, instead of qualitative analysis	5. They carry out their work halfheartedly
9	Being unable to assess accurately the core behind latest technologies	Similar to 1
10	Shifting the evaluation to the outside	Similar to 2
11	Preferred a price-centric proposal evaluation approach which is more disputable than technology evaluation	Similar to 5
12	Not writing the contract to a nicety on purpose	6. People seek an intentional ambiguity
13	Being unable to reach an agreement in the contract by a specific substance	Similar to 6
14	Leaving all decisions concerning IT purchasing to vendors	Similar to 2
15	Avoiding taking ultimate responsibility by not signing the document	Similar to 2
16	Submitting belated modifications in requirements defined	7. People install a protective wall for a rainy day
17	Shifting all responsibility to IT dept.	Similar to 2
18	Purchasing office wanting to withdraw from matters in the stage of fulfillment	Similar to 2
19	Deliberately making final objectives of IT purchasing blurred	8. People do not aim high about IT benefits
20	Users use IT, but do not take any responsibility for IT	9. People get out of the position of responsibility

The result of applying IT purchasing-related defensive behaviors to Ashforth and Lee 's model [1990] is shown in Table 7. It should be noted that IT purchasing-related defensive behaviors are varied.

We now aim to examine each of IT purchasing-related defensive behaviors in depth. The focus is made on its causes and consequences. As to causes of defensive behaviors, Ashforth and Lee [1990] presented a set of antecedents causing the defensiveness in people's behavior. Bureaucratic rationality and stressors were found to be key antecedents. In our analysis, we also reflected their work and, if necessary, suggested additional causes on our own. As to consequence of IT purchasing-related defensive behaviors, we aim to identify harm or damages that each defensive behavior may be causing.

Table 7. Types of IT purchasing-related defensive behaviors

Number	Type	Sub-type
1. People are not devoted to their role	To avoid action	Playing Dumb
2. People shift their duties to others	To avoid action	Passing the buck
3. People stick to existing methods	To avoid change	Resisting change
4. People do not ask a question about decisions made by others	To avoid blame	Misrepresenting
5. They carry out their work halfheartedly	To avoid action	Overconforming
6. People seek an intentional ambiguity	To avoid blame	Misrepresenting
7. People install a protective wall for a rainy day	To avoid blame	Justifying
8. People do not aim high about IT benefits	To avoid change	Resisting change
9. People get out of the position of responsibility	To avoid blame	Playing safe

We now aim to examine each of IT purchasing-related defensive behaviors in depth. The focus is made on its causes and consequences. As to causes of defensive behaviors, Ashforth and Lee [1990] presented a set of antecedents causing the defensiveness in people's behavior. Bureaucratic rationality and stressors were found to be key antecedents. In our analysis, we also reflected their work and, if necessary, suggested additional causes on our own. As to consequence of IT purchasing-related defensive behaviors, we aim to identify harm or damages that each defensive behavior may be causing.

Table 8. Causes and Consequences of IT purchasing-related defensive behaviors

Number	Causes	Consequences
1. People are not devoted to their role	a. Accountability and reward b. Lack of IT-related knowledge & experiences	a. Pitfalls of group decision making b. Hard to expect real benefits from use of IT
2. People shift their duties to others	a. Specialization b. Accountability and reward c. Insecurity and anxiety d. Vendors' low level of value creation	a. Making other people also be defensive b. Hard to expect real benefits from use of IT
3. People stick to existing methods	a. Lack of IT-related knowledge & experiences b. Accountability and reward c. Formalization d. Powerlessness e. Overload	a. No progress or innovation b. Loss of opportunity to learn and grow c. Making people more <i>smartly</i> defensive than before
4. People do not ask a question about decisions made by others	a. Accountability and reward b. Powerlessness c. Insecurity and anxiety	a. Causing the attitude of an onlooker b. disappearance of whistleblowers
5. They carry out their work halfheartedly	a. Accountability and reward b. Lack of IT-related knowledge & experiences c. Formalization	a. Hard to expect real benefits from use of IT b. Causing the attitude of an onlooker c. Loss of opportunity to learn and grow
6. People seek an intentional ambiguity	a. Accountability and reward b. Insecurity and anxiety c. Threat	a. Pitfalls of group decision making b. Possibility of bigger problems in future
7. People install a protective wall for a rainy day	a. Accountability and reward b. Insecurity and anxiety	a. Making other people also be defensive b. Hard to expect real benefits from use of IT
8. People do not aim high about IT benefits	a. Powerlessness b. Accountability and reward c. Formalization	a. Hard to expect real benefits from use of IT b. Loss of opportunity to learn and grow
9. People get out of the position of responsibility	a. Accountability and reward b. Insecurity and anxiety c. Specialization	a. Making other people also be defensive b. Continuing to make unreasonable demands

As shown in Table 8, we found out that some of causes are relevant to almost all defensive behaviors. Among them, 'Accountability and reward' is most representative. It is clear that 'Accountability and reward' is greatly influencing the defensiveness in IT purchasing practices. In fact, purchasing cutting-edge technologies and then realizing an organizationally successful information system using these technologies is never an easy job. It must be an arduous journey and overcome hurdles and crises. What is making stakeholders defensively most is their concern about responsibilities that come with a failure of IT adoption. This defensiveness is greatly reinforced in today's firms where the success or failure of IT adoption are not properly distinguished and, therefore, any reward system is inoperative.

In addition, 'Formalization' turned out one of major causes. This issue supports some findings of the previous IT purchasing studies. Salonen [2015] emphasized that unnecessary right regulation and procedures related to IT procurement may impede organizational change. Snijders and Tazelaar [2005] also found out that in today's organizations there exist many IT purchasing-related rules and procedures, causing stakeholders to invest more time and resources in complying them, but these rigid rules and procedures do not lead to fewer problems with IT purchasing.

In addition, we have identified some of additional causes of IT purchasing-related defensive behaviors. First, lack of IT-related knowledge & experiences ought to be a key cause. If they were sufficiently technology-savvy, they could and would ask others about issues in question and make a judgement among alternatives on their own. Therefore, the lack of IT-related knowledge & experiences must be an underlying factor behind many of these causes.

The second additional cause is vendors' low level of value creation. One of major problems in current IT purchasing practices is an unevenly distorted relationship between an ordering body and vendor. The ordering body tends to dump on vendors many tasks that do not belong to their work and the vendors, to get a contract, tend to undertake them against their will. This kind of relationship is not promising at all, even to either party. If vendors were a true value creator to their client, they would not act like that. They should act like 'say yes when you mean yes and no when you mean no'.

6. Summary and future studies

Why are many of IT adoption problems yet unresolved? To this question, we have made two choices. First, IT purchasing is to be the first area to struggle, because the outcomes of IT adoption will depend significantly upon decisions of IT purchasing, which is the first stage in the two stages of IT adoption. Second, we also needed to examine the defensiveness in IT purchasing-related behaviors which are far from rationality.

In total, 9 defensive behaviors were discovered, such as 'People shift their duties to others' and 'People seek an intentional ambiguity'. These behaviors were then compared to the Ashforth and Lee 's model of defensive behaviors. In addition, for each of them we presented its causes and consequences.

This study is academically meaningful in several aspects. First, this is the first to study IT purchasing in behavioral aspects. Second, it is the first study examining defensive behaviors in IT management area. We hope this study can add some knowledge to defensive behaviors in organizations.

We can also find some practical implication for IT purchasing management. The results of our study will let business leaders and IT managers understand why stakeholders act that passively. It is hoped that they can soon come to devise some remedies to the defensiveness in IT purchasing-related defensive behaviors.

However, the research methodology of our study has a few limitations. First, our study relied only on questionnaire survey asking subjects to write IT-purchasing related issues or problems. That is, our identification of these defensive behaviors concerning IT purchasing was not empirically evaluated. Second, the process of deriving defensive behaviors from issues/problems and problematic behaviors was not based on a theoretically sound approach.

For future studies, we can add more validity to our work. A Delphi approach can be taken to make sure whether these defensive behaviors are prevalent in current practices. In this study we focused on behavioral aspects of IT purchasing. Aspects of group decision making may be another avenue to IT purchasing.

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Predicting Corporate Bankruptcy Using Media Information

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Abstract

The bankruptcy prediction model using market information, which is most often used in previous studies, has the advantage that reflects the company's status and current situation in time. However, it has a limitation that it can be applied only to listed companies.

This study aims to develop a corporate bankruptcy prediction model based on new source of information, media information, which is not used much by traditional corporate bankruptcy prediction studies and to compare it with traditional bankruptcy prediction models based on market information. Media information can be collected from text database such as news on the internet. News about a company is one of the fastest sources of information to a company and provides the information of a company regardless of its listing on stock market. We will use 'word2vec', one of AI techniques, to quantitatively analyze the relationship between the words mentioned in news articles. Our empirical results show that corporate bankruptcy prediction model using media information has almost the same accuracy as the model based on market information. Furthermore, when combined with market information, it has more significant prediction performance than the previous models. In other words, media information is found to be of significant value as an additional source of information in predicting corporate bankruptcy.

Keywords

Corporate bankruptcy, media data, text-mining, word2vec, artificial intelligence

1. Introduction

When a company goes bankrupt, many stakeholders including not only investors and lenders but also directors, employees, and customers are affected. Therefore, a methodology that can accurately predict corporate bankruptcy in advance is very worthwhile. There have been many studies for the prediction of corporate bankruptcy. However, as internal and external business environments of a company continue to change, characteristics of corporate bankruptcy keep changing as well. Consequently, new sophisticated corporate bankruptcy prediction methods are still highly demanded. This study aims to develop a corporate bankruptcy prediction model based on new source of information, 'media information', which is not used much by traditional corporate bankruptcy prediction studies and to compare it with traditional bankruptcy prediction models based on 'market information'. Media information can be collected from text database such as news on the internet. News about a company is one of the fastest sources of information to a company and provides the information of a company regardless of its listing on stock market.

We find that a corporate bankruptcy prediction model using media information has forecasting accuracy as high as that of the prediction models using market information. We also find that when media information is combined with market information, forecasting accuracy becomes significantly higher than when market information is used alone. The results imply that media information has a significant value as an additional or alternative source of information in predicting corporate bankruptcy.

After the introduction of chapter 1, chapter 2 explains our methodology comparing with the existing ones. Chapter 3 estimates and evaluates new corporate bankruptcy prediction model based on media information. Chapter 4 concludes the paper.

2. Methodology

2.1. Previous research

Altman (1968) adopts multiple discriminant analysis (MDA) to predict the corporate bankruptcy and Ohlson (1980) develops a bankruptcy prediction model represented by the logit model based on traditional financial information. Since then, it has evolved to

improve the performance of predictive models either by applying diverse methodologies or by using timely market information.

McQuown (1993) suggests the KMV model that measures EDF (Expected Default Frequency), the probability of default, from stock prices by using Merton model (1973). He shows that EDF is different from a simple expectation of loss and greatly increases forecasting accuracy of corporate bankruptcy. Since then, many domestic and foreign studies have proved corporate bankruptcy prediction based on market information is very useful.

Shumway (2001) is the first to integrate accounting and market information using the hazard model. He lays the foundation of using two sources of information that were difficult to combine due to various constraints through utilizing the hazard model. Campbell et al (2008) also show that the hazard model, which combines accounting and market information, has a better prediction of corporate bankruptcy than the previous models based on each source of information.

Nam et al. (2008) perform bankruptcy predictions for Korean companies using a hazard model that integrates accounting and market information. Lee et al. (2015) also perform bankruptcy predictions using the models in Campbell et al (2008) and study variables more significant in predicting corporate bankruptcy in Korea.

In recent years, with advances in information technology and big data analytics methodology, there are some studies to predict corporate bankruptcy using various sources of information besides financial and market information. Lee (2014) points out that the prediction of bankruptcy for small businesses based only on financial and market information is difficult and suggests a methodology for bankruptcy prediction by using firm's real time information of credit transactions, late payment, etc.

2.2. Methodologies

2.2.1. Variables

This study aims at collecting news text data as media information and comparing its forecasting performance with the existing corporate bankruptcy prediction methods. Specifically, since we are interested in timely forecasting, we will compare our method with market information based predictive models that are most often used for timely forecasting.

The KMV model, a representative corporate bankruptcy prediction model using market information, requires

market information such as stock price and stock price volatility. It also requires financial information such as total asset, total liability, current liability, and number of shares outstanding and so on. Such information can be obtained from the stock exchange market and corporate financial disclosure system. We can compute the Distance to Default (DD) or the Expected Default Frequency (EDF) of companies using the KMV model based on the obtained information.

In this study, we introduce two measures of bankruptcy, 'ratio of articles related to bankruptcy' (RAB) and 'words similarity with bankruptcy' (WSB) based on the text information collected and compare their forecasting performance with DD, which is a measure of default of the KMV model using market information. We also examine forecasting performance of corporate bankruptcy prediction model when we combine media information with market information.

2.2.2. Model we use

Merton (1973) suggests a bankruptcy prediction model using market information based on an optional pricing model. Because KMV is the methodology that predicts probability of bankruptcy based on stock price where market information about a company is immediately reflected, it can supplement the time gap problem that financial information-based models have. On the contrary, the KMV Model can be applied only to companies listed on stock market since it needs stock price information.

Using these values, DD is calculated as in equation (1).

$$D \cdot D_T = \frac{\ln\left(\frac{V_A}{X_T}\right) + \left(\mu - \frac{\sigma_A^2}{2}\right) \cdot T}{\sigma_A \cdot \sqrt{T}}$$

σ_A : yearly asset volatility for the company
 μ : yearly growth rate for stock price
 V_A : Value of Asset V_D : Value of Debt V_E : Value of Equity
 $=$ Number of stocks * Stock price
 X_T : balance of current liabilities

(1)

The main contribution of the KMV model is that the probability of bankruptcy of a company for a given period can be determined by the stock price of the company reflecting market information. While financial variables cannot reflect information on time due to the feature of the periodical report of accounting information, KMV model is able to calculate the probability of bankruptcy based on market price in real time. The model is also very simple in calculating EDF and is theoretically solid since it is based on the option pricing model (Oh et al., 2017).

2.2.3. Method using text data

Text information is the most common unstructured data that can be obtained from many sources, including documents, publications, web pages, e-mail and messages. Also, when combined with the latest advancements in voice recognition or visual recognition technology, the range of sources of text information may be wider. But the use of text data in predictive models requires the quantitative measures for text data. This study suggests several quantitative methodologies as follows.

2.2.3.1. Finding pseudo-bankruptcy words using word2vec

'Word2vec' is a methodology to quantify the relationship of each word by finding associated rules between words. It is an algorithm that looks at the sequence relationship between each word and calculates similarity in the form of vectors. Since 'word2vec' doesn't carry out pre-learning steps, it can be seen as a methodology of artificial intelligence based on 'unsupervised machine learning'. To calculate the correct vector of the relationship between words, a large database of text data is required.

We will use 'word2vec' to quantitatively analyze the relationship between the words mentioned in news articles. To predict corporate bankruptcy, the number (or rate) of articles related to bankruptcy must be identified. However, the word 'bankruptcy' is not always included in all the articles related to bankruptcy because words other than bankruptcy or words that have a similar meaning to bankruptcy can be used. 'Word2vec' can select relevant articles related to bankruptcy since it calculates a high similarity with bankruptcy for the words that have similar meaning to bankruptcy, even if bankruptcy is not directly expressed in an article.

In this study, 20 words that have a high similarity to 'bankruptcy' and 20 words that have high similarity to both 'bankruptcy' and 'delisting' at the same time are selected as 'pseudo-bankruptcy' words.

Pseudo-Bankruptcy Words (1): top 20 words having a high similarity with bankruptcy

Pseudo-Bankruptcy Words (2): top 20 words having a high similarity with both bankruptcy and delisting

2.2.3.2. RAB (ratio of articles related to bankruptcy)

Since many bankruptcy signs can be detected for a bankrupt company before the actual occurrence of bankruptcy, reporters will catch the signs and write news articles with negative comments about the company. In this study, the ratio of articles related to bankruptcy (negative words) is

used to measure the possibility of bankruptcy. The ratio is calculated by dividing the number of articles related to bankruptcy with the number of all articles for each company during a specific period before the bankruptcy occurs. If this ratio is high, it is regarded as a sign of bankruptcy and is used to predict bankruptcy of the company.

$$RAB_{it} = \frac{\# \text{ of articles related bankruptcy}}{\# \text{ of total articles}}, i: \text{company}, \\ t: \text{month}$$

An article is considered as an 'article related to bankruptcy' if pseudo-bankruptcy words (1 & 2) are included in the article.

2.2.3.3. WSB (word similarity with bankruptcy)

Lu et al. (2015) predict corporate bankruptcy by using 'DIDC', a method where the index is calculated using relative entropy from the text DB to the subject. Since 'word2vec' is almost the same methodology as DIDC, we can predict corporate bankruptcy by 'word similarity with bankruptcy' (WSB), which can be measured for all the words that consist of an article by 'word2vec'.

The procedure for calculating WSB is as follows. First, the similarity of each word that comprises an article is calculated. Then, the average similarity of the article is calculated to determine the level of WSB of the article for each company during a specific period. WSB is also measured based on pseudo-bankruptcy words (1 & 2).

2.2.4. Prediction model

To predict bankruptcy using media information and market information, we use the logistic regression method, which is the most popular binary classification prediction method since Ohlson (1980). If the model is estimated by setting a dependent variable of Y as the probability of bankruptcy (if bankruptcy, 1 and otherwise, 0), the explanation for each variable is verified quantitatively to determine whether the prediction can be significant. The model for the prediction of bankruptcy is given in Equation (3).

$$Y(\text{Prob. Bankruptcy} = 1)_{i,k} = \alpha_0 + \alpha_1 M_{ik-j} + (2) \\ \alpha_2 DD_{ik-j} + \beta_1 X_{ik} + \varepsilon_{ik}$$

, for company i and month k (k is the month when bankruptcy occurs). M and DD are the analysis variables representing media information and market information, respectively. We add financial variables as control variables (X) in Equation (3) to see whether the significance of the media variables remains robust or not.

3. Conclusion

The bankruptcy prediction model using market information, which is most often used in previous studies, has the advantage that reflects the company's status and current situation in time. However, it has a limitation that it can be applied only to listed companies.

This study aims to develop a corporate bankruptcy prediction model based on new source of information, 'media information', which is not used much by traditional corporate bankruptcy prediction studies and to compare it with traditional bankruptcy prediction models based on 'market information'. Media information can be collected from text database such as news on the internet. News about a company is one of the fastest sources of information to a company and provides the information of a company regardless of its listing on stock market.

We collect news using text-mining techniques that are being actively used in the big data research area recently. And we propose a method that changes text data to measurable variables using 'word2vec' that is one of artificial intelligence (AI) techniques. By doing so, limitations of the previous research on media information were overcome.

We find that a corporate bankruptcy prediction model using media information has forecasting accuracy as high as that of the prediction models using market information. We also find that when media information is combined with market information, forecasting accuracy becomes significantly higher than when market information is used alone. The results imply that media information has a significant value as an additional or alternative source of information in predicting corporate bankruptcy.

This study has several limitations. First of all, it is not easy to keep up with high-quality media data for small companies that are relatively less interested by the people. Most of news articles about companies are concentrated on several famous companies. In addition, a lot of resources are needed for data processing in the analysis process, such as the processing of cleansing words text and replace synonyms. This limitation is expected to improve as information collection sources are expanded and information processing technology develops.

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Interactive Language Teaching Methods and Approaches -The Use, Techniques and Positive Effects of the Callan Method in the English Classroom

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Abstract

The present work focuses on the Callan Method as one of the most common interactive language teaching methods used in the foreign language classroom. As a language instructor who works with this method and interacts with students on a daily basis, I have mostly received very good feedback and satisfying remarks from the people who use this method for studying foreign languages during a longer period of time. When we concentrate on English classes with the Callan Method, this type of method is considered to focus on the quick improvement of the students' listening and speaking skills and it gives them the ability to understand native English speakers in a more effective and reliable system. The main catchphrase of the Callan Method is - "Learning English in a quarter of the time" and it already represents great success in language learning. The lessons are based on speed and repetition and students spend less time and money on lessons, therefore they obtain high-quality education and practical usage of the language. Through its modern teaching techniques, it brings joy and motivation not only to the students, but also to the teachers.

It is suitable for students of all nationalities, of all ages and for all purposes of study. (<https://www.jetenglish.com/about/callan>)

Keywords

The callan method, foreign language learning, high-quality language techniques, effective and reliable language system, learning english in a quarter of the time.

1. Introduction

The Callan method was developed by a British teacher called Robin Callan. The method was first published in 1960. The first school to use this method opened in London 50 years ago and today there are more than 300 schools across Europe, Asia and South America that use the Callan Method (http://www.phil.muni.cz/plonedata/wkaa/BSE/BSE_2003-29_Scan/BSE_29_10.pdf).

(<https://www.jetenglish.com/about/callan>)

Robin Callan created this type of method based on three important principles –

1. The student has to repeat each phrase in English until it is pronounced properly, the teacher corrects all the errors of the student.
2. The English teacher must speak at a fast pace and the student has to speak directly into English without

translating the sentence into his/her mother language.

3. The teacher “pushes” the student to reply directly in English after the teacher gives the student a question.

The Callan method uses very similar characteristics as the Direct Method that emphasizes on proper pronunciation and the restriction of using the mother language of the student during the lessons. Moreover, it also contains many other features such as, oral drilling techniques similar to the audio-lingual method, building self-confidence in students (Suggestopedia) or the quick correction of errors (the Grammar-translation Method).

The use of the Callan Method in the English Classroom (from the teacher's perspective) and a demonstration of how it works.

From my point of view, I really appreciate that the Callan Method language schools are small and allow a maximum of 12 students in the classroom. The classes

can also be divided into, for example: smaller group classes, individual classes with two people or individual classes with only one person. This style of class structure increases teacher and students interactions and forms a productive classroom climate during the learning process. During the first class with my new students, I always explain that this method will help them improve their pronunciation and comprehension due to the fact that 70 % of time is dedicated to listening and speaking practice. In addition to very good oral and audio training, the students are constantly getting to know a large amount of practical vocabulary and learning new grammar structures. Each lesson lasts 50 minutes and my task as an English teacher is to ask my students a variety of questions and repeat them twice for better comprehension. On the other hand, each student has to reply to all the questions as correctly as possible always using and learning new vocabulary and new grammar structures. The teacher slightly “encourages” and “pushes” the student to reply to all the questions directly and helps the student during the beginning of the sentence.

Example 1 (Learning new vocabulary and using them in other lessons).

Stage 1, lesson 1

Note: The Callan Method uses contractions because it is

natural to use contractions in spoken English.

New vocabulary: pen pencil book a
what is (what’s) this it is (it’s)

Teacher: What’s this? (The teacher asks the question twice and shows a pencil to the student)

Student: It’s a pencil

Example 2: (The Callan method also emphasizes on positive and negative answers. Positive for shorter and negative for longer responses. The task of the student is always to reply and practice English by using longer sentences).

New vocabulary: on under in

Teacher: Is the pencil on the book? (The teacher shows a pencil and puts it on a book).

Student: Yes, the pencil is on the book

Teacher: Is the pencil in the book? (The teacher shows a pencil and puts it under a book).

Student: No, the pencil isn’t in the book; it’s under the book

Example 4: (In each lesson and each stage, the student learns new grammar structures and has the ability to make a significant language progress).

Stage 2, lesson 10

Present continuous

I am

You are

He is
She is
It is

We are
You are
They are

reading

Present simple

I **read**

You **read**

He **reads**
She **reads**
It **reads**

We **read**
You **read**
They **read**

Callan, R. (2012). Callan Method, Teacher’s Book, Stages 1&2.

Teacher: Are you reading that book? (Before this question, the teacher opens and hands a book to the student and tells him/ her to read it at the moment).

Student: Yes, I am reading this book.

Example 5: (The teacher compares the present continuous with the present simple and the student easily learns the difference between these two tenses).

Teacher: Do you read that book? (Before this question, the teacher explains that this book is read every day and on a daily basis).

Student: Yes, I read this book.

One of the other important parts of the Callan Method is the explanation of various grammar definitions that helps the student to learn about the differences between two grammar concepts.

Sample:

- What's the difference between the present continuous and the present simple?

The difference between the present continuous and the present simple is that we use the present continuous for an action we are doing now, whereas we use the present simple for an action we do generally.

1.1. Demonstrating progress

When I have new lessons with my students, we usually do a quick repetition of the previous materials we covered from last class. This means that the students are surrounded by the language and interact with the teacher all the time. Students are also very pleased to improve their writing and reading skills by doing small dictations and reading out loud numerous English texts throughout the whole stage. Audio tracks on CDs of all the transcripts are also provided and they may use them for comprehension practice as part of their out-of-class activities. We usually go through another revision after the first completion of each stage. Eventually, the real progress is presented after the stage exam is finalized. The stage exams include a Yes/No quiz, vocabulary test and dictation exercise. After successfully passing the stage exam, the student is able to observe his/her linguistic strengths and work more on their weaknesses.

The Callan Method contains 12 levels (stages) starting from Stage 1 (level for beginners) and finished by stage 12 (advanced level). There are certainly immense differences between each stage because it is common that the language fluency and vocabulary use increases after reaching a higher stage.

Example 1: Stage 2, lesson 10 (Simple questions and simple answers with only two options).

New vocabulary: Prefer tea coffee

Teacher: Which do you prefer tea or coffee?

Student: I prefer tea to coffee.

Example 2: Stage 6, lesson 78 (Giving the student a task and waiting for his/her opinion with the use of proper sentence structure and vocabulary that was taught before).

New vocabulary: describe description just

Teacher: Describe someone you know, please (one of your family or friends).

Student: I'll describe my mother. She's tall and thin; she has black hair and green eyes etc.

Another good step toward language progress is time efficiency. It is stated that the internationally-recognized Cambridge Preliminary English Test (PET) in approximately 80 hours instead of the usual 350 hours it takes when learning by other methods and the level of the Cambridge First Certificate in English (FCE) in about 160 hours (<https://www.jetenglish.com/about/callan>). The Callan Method continues to expand the learner's abilities, and content has been decided on with the CEFR (Common European Framework of Reference) (<https://www.callan.co.uk/the-callan-method/for-teachers/>).

How Callan Method Stages compare to CEFR* levels and University of Cambridge General English exams

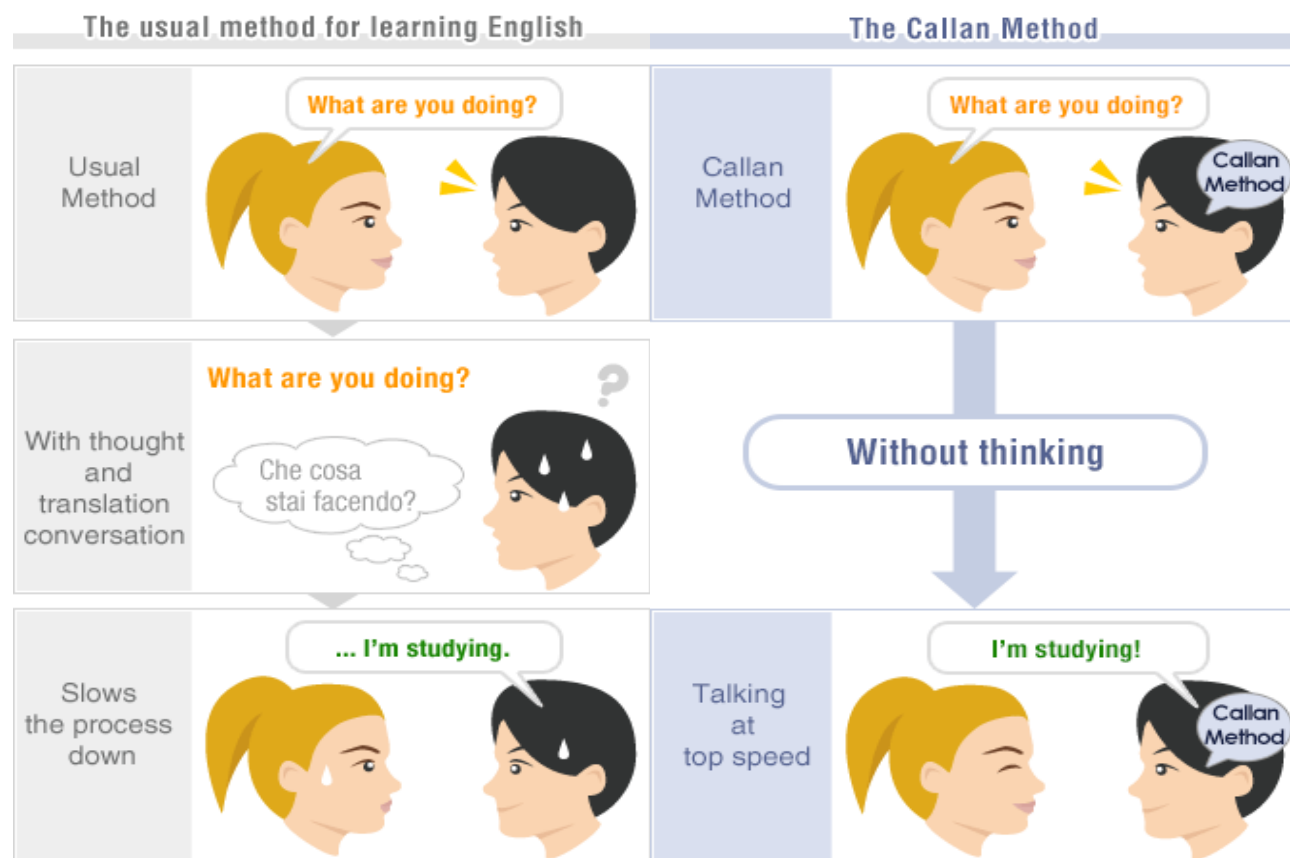
* Common European Framework of Reference

It is difficult to compare the Callan Method books directly with the CEFR levels and Cambridge exams, but below is an approximate guide.

CEFR Levels	Cambridge Exams	Callan Method Stages											
		1	2	3	4	5	6	7	8	9	10	11	12
C2	CPE												
C1	CAE												
B2	FCE												
B1	PET												
A2	KET												
A1													
↑													

Callan, R. (2012). Callan Method, Teacher's Book, Stages 1&2.

One of the most important goals of the Callan Method is that the student has to think and speak directly without translating the sentences into the mother language.



<https://www.jetenglish.com/about/callan>.

To achieve this goal in the English classroom, my duty is to ask my students many questions as fast as possible. The main objective is to ask questions with the recommended speed of 200 – 240 words per minute. I also focus on the accuracy and I try to encourage the student to reply at a quick pace, but I also monitor the correctness of sentences. This high speed practice usually improves concentration during the lessons and prepares the student to adapt to the speed of a standard conversation.

1.2. The use of practical materials

The teacher's and student's books are predominantly used during the lessons. The teacher's book is almost identical to the student's book apart from the comment and instruction section that is prepared for the teacher. Another difference is that the teacher's book also contains a stage exam template which is used during the examination. What I also like to present in my class are demonstration charts, such as words with pictures, pictures of people, numbers, grammar structures or the English alphabet that all support visual memorization. The writing board is a very good educational tool as well because we are able to make a pause in between questions and answers and I usually write and explain some more complicated vocabulary and grammar.

2. Feedback`

As mentioned before, the Callan method is suitable for people of all ages and for all study purposes. From my own experience, most of my students are people who have their own careers and professions and are looking for a way to gain a better working knowledge of the language. People usually study a language for many kinds of reasons – work, travelling, family etc. The Callan method gives these people the opportunity to acquire practical English and increase their conversational knowledge of a language in a quick and reasonable time frame. As part of the positive outcome of this method, I will share the feedback from some of my students:

Student # 1

"I am learning English with the Callan Method that is mostly based on conversation, comprehension and grammar. This type of method caught my attention from the beginning and brought me great satisfaction and motivation. I am gradually improving my English speaking skills and slowly adapting to a normal conversational pace. During stage tests and dictations, the teacher pays attention to my

learning needs and helps me overcome language barriers and challenges “.

Student # 2

"I already can understand some words and phrases from the television or radio and I am more confident to create a simple conversation with a foreigner. I wish we studied this method during High school”.

In regard to the teacher feedback, the teacher training instructions were always straightforward and efficient. Naturally, the most important part is the teacher-student interaction and the positive progress of each student.

3. Conclusion

This was the summary of all the beneficial aspects of the Callan Method. It is a very popular method that is very well-known by many teachers and students around the world. From all of these practical examples, we are able to see that this method supports student self-confidence and motivation. Moreover, the enjoyable lessons are built to create a very good and successful atmosphere.

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The Innovative City Development through Place Marketing, Branding and Co-Creation as a New Perspective for Slovakia

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Abstract

Territory is a place, where intersect the strategies of public places, projects of infrastructure, organizational and administrative structure and vision of place management. Success depends on specific factors – planning, vision, strategy, brand identity, image, partnership of public and private sectors, political unity, global market factors, local development, the managerial process, etc.

Our attempt is to focus at managerial and marketing strategies in territories; especially a co-creation concept. The aim of our research was to explore a contemporary state of application of marketing strategies in one Slovak city Banská Bystrica. The methods of comparison and benchmarking to propose the innovative approach to marketing have been applied. In primary and secondary research have been used mixed methods, a combination of quantitative methods (demand side perspective) and the application of the Importance-Performance Analysis (IPA) and qualitative methods (interviews with the representatives of municipalities, private sector and non-governmental sector representatives, e.g. supply side perspective).

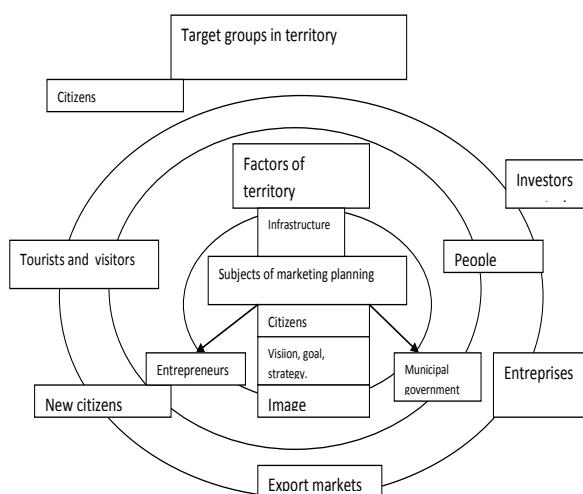
Keywords

Place marketing, branding, co-creation, innovative city development

Literature review

Ashworth and Voogt (1990) claimed that territories are functioning at different spatial levels, e.g. that a marketing product, which is offered in territories is different as the same product, which is consumed by territorial consumers. The target groups are citizens of a place, visitors, entrepreneurs and products, which are being consumed. They might be different and the preferences might be also different.

A place is for this reason consumed several times by different segments with different motives, which creates a high demand of sophisticated market strategy of territory and fulfillment of promise given by creators of strategies to the users. For this reason is difficult to create a place product which will satisfy needs of all users. For better understanding is necessary to define the levels of marketing as a part of a sound marketing strategy of territory.



Scheme 1: Levels of place marketing

Source: amended upon Kotler, Heider, Rein (1993).

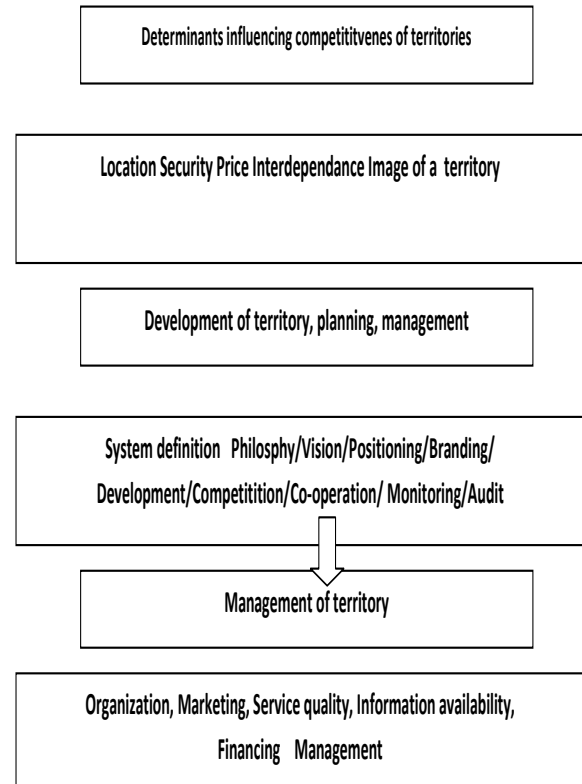
The target groups are selected segments and consumers of a territory. Ashworth and Kavaratzis (2008) stated that the process of place marketing is highly demanding on the close co-operation of existing entities in territories as well as the co-operation with the consumers.

Kotler et al. (2002a) defined place marketing as „management of territory in order to satisfy needs of target markets.“ It leads to success if citizens and entrepreneurs are satisfied and if the requirement of visitors and investors have been met. The perception of marketing has not always been specified as it is now, but the goals were identical – to achieve economic success and improvement of quality of life of citizens („place excellence“ as discussed by Kotler a Asplund, Rein, Heider, 1999 a Reinisto, 2003). A city and its target markets are citizens, entrepreneurs, tourists, students from different places, e.g. a community and the external users of the city products and services.

Deffner and Metaxas (2006a), Ashworth and Voogd (1990) underlined a necessity to combine city marketing, promotion and the spatial-functional, organizational and financial characteristics. Kotler et al. (1999) included into marketing mix of a territory in his place marketing concept a character of territory (structure and design), infrastructure, services, and attractions.

Topics dealing with different approaches to marketing have been studied by the academics and practitioners dealing with place marketing and place branding. A territory is a space where intersect the strategies of public spaces, infrastructure of private and public sector, the organization and administrative potential, economic, social, and environmental strategies.

The complex system and its success depend on such factors as the comparative and competitive advantage and its implementation into the successful strategy of a specific territory. Porter (1998, p. 78) mentioned that a „comparative advantage in global economics are based on local principles – knowledge, relations, motivations – these can be very difficult to copy by competitors“. Relations are built through partnerships in territories, knowledge is a specific value, which might be successfully used in a territory or simply wasted (for instance by the inability of management in a specific territory to be innovative, creative, attentive to the needs of users). Motivations are closely related also with a satisfaction and the opportunities in a territory. Crouch and Ritchie (2003) defined major determinants of the competitiveness of territory as follows:



Scheme2: Conceptual model of territorial competitiveness.

Source: amended upon Crouch and Ritchie, 2003.

Place marketing and place branding are significant tools of the enhancement of competitive advantage. Both concepts aim at the same target, the improvement of competitiveness of a place; however, the tools and especially a time of performance are different. A shift from classical marketing and branding theory (branding of products) to the place marketing and branding by offering the relational and network marketing paradigms and alternative branding perspectives (relational branding) demarcated the contemporary development of marketing and the growing importance of the brand equity function in territories and especially in the cities.

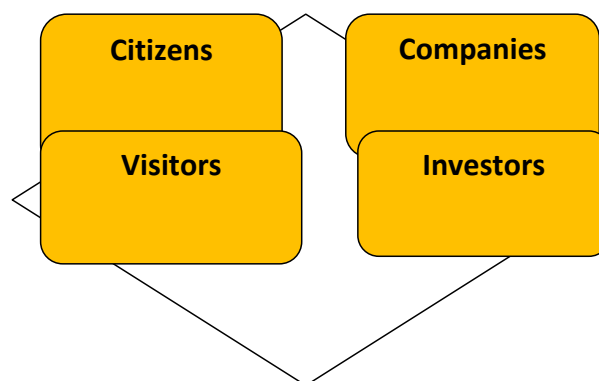
Ambler (1997) distinguished “the underlying discipline of the marketing mix or neoclassical paradigm is microeconomics, whereas the relational paradigm is about people and draws its substance from the other social sciences.” A shift of traditional approach to marketing of places to new paradigmatic stance with new methods, methodologies, topics and focus of research has influenced the development of questions trying to answer such problems as how to combine the classical marketing tools and approaches with the new changes in a society and global world.

For this reason, place marketing and especially place branding concepts attracted the attention of researchers as Pritchard and Morgan (1996), Pike (2004), Kotler and Keller, 2006, Gnoth, 1998, Hankinson, G. (2004), Henderson (2000), Ashworth and Voogd (1994), Deffner and Metaxas, 2006, Reinisto and Moilanen 2009, Kavaratzis 2005, etc. and such authors as Reinisto, Moilanen, Kavaratzis were focused especially at city marketing topics.

In the concept of city marketing is necessary to focus on satisfaction of inhabitants, which concerns so called cultural geography (how citizens perceive a city – a territory or create a picture about a city in the framework of processes – planning, territorial design, use of territory as a product, services by using the creative components influencing the image (media, art). These ideas have been developed by the authors as Crang (1998), Holloway a Hubbard (2001) and others.

The most important contribution has been done by Deffner a Metaxas (2006a), the authors of 8Ps Model of Morrison dealing with the marketing of city tools as product, partnership, people, accessibility, program, price and promotion. Ashworth a Voogd (1990) in the framework of the geographic marketing mix underlined a necessity of combining of city marketing, promotion, spatial and functional characteristics, organizational characteristics and financial characteristics. The authors added that important is the combination of these tools and characteristics. Kotler et al. (1999) included to the marketing mix of territory important factors as character of territory (structure and design), infrastructure, basic services (for users of services), and attractions (for events preparation, tourism, and leisure). This will be a basic tool for our research and searching for the demand side respond of users of selected cities.

City marketing could be applied in several phases, where in the initial phase is crucial the attempt to attract cheap labour and promotion of a city (Bailey, 1989, Ward, 1998). Second phase is typical for using the classic marketing mix tools and in the third phase is important to create a relations with a customer (co-creation principle), which is typical for place branding. Unfortunately, many countries and cities and their public sector representatives are still not familiar with a concept of successful place branding. Berg and Braun (1999) mentioned the following important users of the product of city (scheme 3).



Scheme 3: Van den Berg a Braun model of city users.

Source: Van den Berg a Braun, 1999, s. 987.

Preferences of these groups and city customers are different as has been also stated by Goodman & Thibodeau (2003). Braun (2008) mentioned that the attractiveness of city and its services might have an enormous impact on spatial behaviour. Braun evaluated the basic characteristics of the attractive environment for citizens and also the other users as being formed by the following components Scheme 4, 5, 6, 7):

Living conditions and living environment
The existence of working opportunities
Availability of educational institutions
Availability of leisure amenities
The opportunity to be with a family and friends
Acess to the other services in a city

Scheme 4: The Attractiveness of living environment of the city for citizens.

Source: Braun, 2008.

Similarly has been evaluated the following importance factors for entrepreneurs (scheme 5)

The environment of the city and the construction of living spaces
The access to labour
The access to customers and new customers
The access to suppliers
The access to financial resources
The access to partners

Scheme 5: The Attractiveness of the environment for entrepreneurship.

Source: Braun, 2008.

The opportunities of temporary accommodation and the environment.
Access to cultural resources.
Access to leisure facilities.
Access to shopping facilities.
Access to catering facilities.
Access to entrepreneurship opportunities.

Scheme 6: The Attractiveness of the environment for visitors.

Source : Braun, 2008.

Reality market
Attractive environment for life of the target groups
Attractive entrepreneurs environment
Attractive environment for visitors

Scheme 7: Attractiveness of the environment for investments.

Source : Braun, 2008.

For this reason is crucial by the implementation of city marketing to recognize the needs of all major target groups and users of city marketing product. These outcomes need to be taken into consideration and it is really important to define the city customers, their preferences, the influence of attractiveness of city on spatial behaviour. Sometimes it might be a real challenge to understand a need of consistence between spatial perception and the economic goals represented by a variety of economic spatial structures. A complexity of the system of city marketing requires understanding of both sides of one coin, e. g. the system of the product (city) offer and supply side and also the other side – demand side (city product users).

The objective of our research will be place marketing and especially how places (cities) of countries with a relatively poor understanding of place marketing concepts (not even including place branding concepts and their successful implementation) are able to use the concept of place marketing into their practices. One side or dimension of place marketing is a side of creators of marketing strategies; however, our goal is to explore also the side of users, especially to explore existing gap between two perceptions and understanding of a city in Slovakia, which belongs to the former jewels of history, architecture and mining entrepreneurship. Banska Bystrica, which is situated in central Slovakia, has a potential to become a tourism attraction and to attract the attention of entrepreneurs. However, a city turned to stagnation without any signs of improvement and as a result of it a city is losing its inhabitants, students, and the perspective entrepreneurs. We tried to explore reasons of this state

and used the following methodology. In the further stage of research will be developed a thorough research of the functioning o partnerships among the private, public and not-for profit sector (case study approach in mixed methods combination); however, for the purpose of this study only the demand side (primary research) will be presented.

Methodology

The aim of our research was to explore the contemporary state of application of marketing strategies in specific Slovakian cities (in this study will be a focus on Banska Bystrica where pre-research took place) and by the application of methods of comparison and benchmarking to propose the innovative approach to marketing in Slovakia and to explore the success factors of those approaches. The major assumption and statement is that the innovative marketing is contributing to the local economic and social development and contributes to the improvement of quality of life in a city.

The following research questions have been created in order to support our research and for this specific study a third research question has been specifically applied:

Question 1 - Does the innovative marketing of place contribute to the local development of a territory?

Question 2 - How important is the active co-operation of partners in territory for a successful strategy and marketing?

Question 3 – How important is for the competitive marketing strategy to respect the needs of the users of territory (the innovative approach to marketing based on co-creation principles and prosumer approach concept)?

In this primary and secondary research has been applied mixed methods approach as has been presented by some authors as Tashakkori and Teddlie, 1998, 2003, Cresswell, 2002. The multilevel model (Tashakkori and Teddlie, 1998) has been applied, which allows to combine quantitative methods (a survey among the users of territory) and qualitative methods (interviews with the representatives of municipalities, private sector and non-governmental sector representatives have been applied).

For better understanding of the existing cases and the application of some benchmarking strategies, a method of case studies from specific Canadian cities (Waterloo, Hamilton) and Niagara on the Lake have been partially used and will be further developed in the following research. The choice of case studies is based on the 4-year post-graduate study stay at Waterloo University, Ontario, Canada and involvement in studies of tourism marketing, branding and competitiveness of destinations.

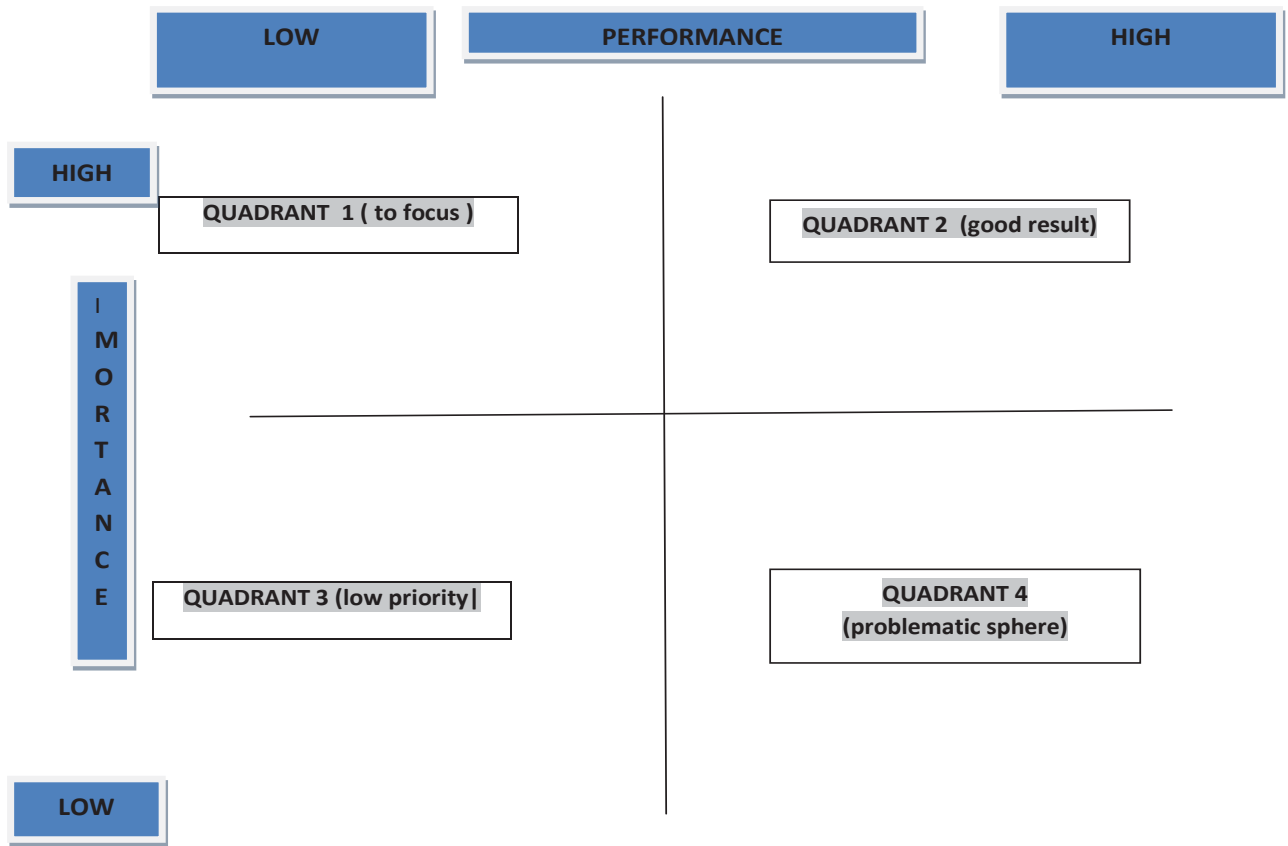
Results

A primary research focused at the demand side (customers of the city) has been conducted in a city of Banska Bystrica and the used analysis of the importance and performance of city and its potential has been researched by the application of the Importance-Performance Analysis (IPA) created by Martilla and James (1977) as the managerial method used in marketing research.

PERFORMANCE		
I M P O R T A N C E	Quadrant 1 (High importance; Lower performance) This quadrant displays attributes which are considered to be important, yet are not being performed to the same standard, or level. If an attribute falls within this quadrant efforts should be made to shift it to quadrant two (upper right).	Quadrant 2 (High importance; High performance) This quadrant represents those attributes of VRM which are considered to be important and are also being performed to a higher standard. Attributes that fall into this quadrant should be maintained to ensure they remain at this level of performance.
	Quadrant 3 (Lower importance; Lower performance) This quadrant indicates attributes which are of a lower priority. Resources are not being channeled towards them as much as other attributes. Attributes which fall into this quadrant should remain untouched.	Quadrant 4 (Lower importance; High performance) This quadrant indicates a possible overuse or resources. Organizations are allocating resources to, and highly performing these attributes, yet they are not deemed to be exceptionally important to the organization.

Table 1: The Importance and performance Matrix Source: Martilla and James, 1977.

The creation of IPA quadrants and the importance of particular factors have been factors placed into four quadrants as has been recommended by Martilla and James (1997). The following table explains the reorganization of quadrants and factors in the more visual forma s has been later used for the performance of results of research (Graph 1).



Graph 1: Importance Performance Analysis
Source: own analysis based on Martilla and James Importance and Performance Matrix, 1977.

A sample of 134 respondents (citizens, visitors and entrepreneurs/developers) was used in Banska Bystrica. The answers were compared with the interview results of the municipality representatives. The evaluation has been performed with the use of non-parametric methods, Friedman and Wilcoxon test. The importance of factors has been confirmed by the application of the function Monte Carlo Sig. In Banska Bystrica, the following chart of importance and satisfaction with the place and the factors has been created and analysed.

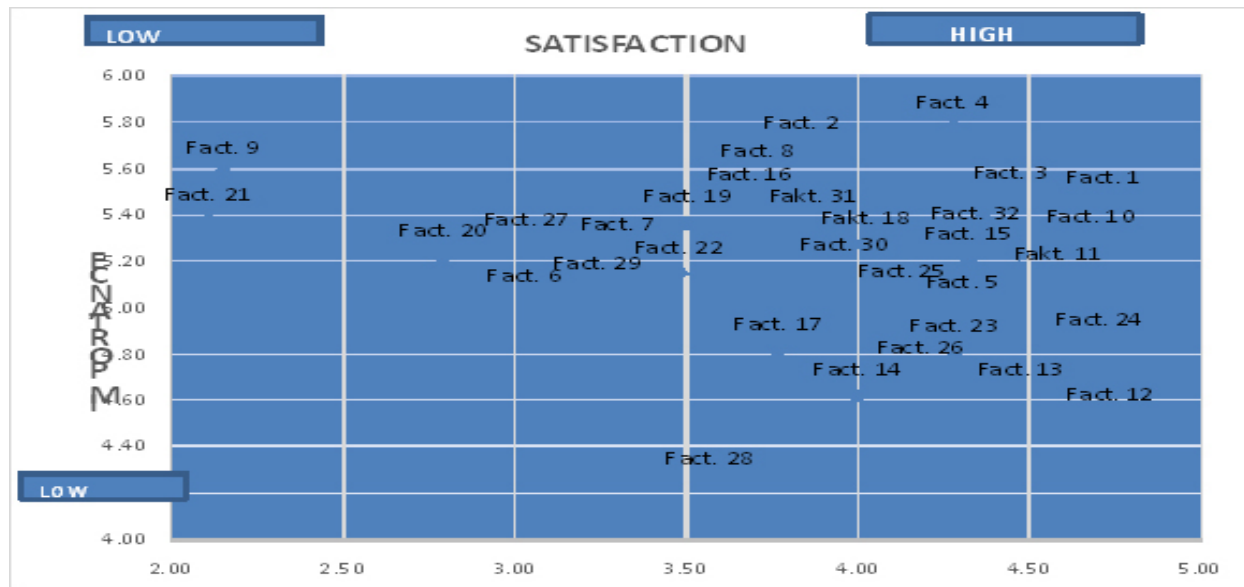


Table 2: The Results of research of importance and performance of services in Banska Bystrica.

Source: own research in the city of Banska Bystrica, 2014.

The most critical factors in the city from the side of citizens, visitors and entrepreneurs were chosen the opportunities to work, the quality of infrastructure, entrepreneurship opportunities, innovative approach to governance and city competitiveness.

Conclusions and implications

The most critical factors in the city from the side of citizens, visitors and entrepreneurs were chosen the opportunities to work, the quality of infrastructure, entrepreneurship opportunities, innovative approach to governance and city competitiveness. Based on the research by the application of IPA analysis (analysis of importance and performance – satisfaction) in the city of Banska Bystrica, Slovakia the results indicate that the public sector representatives have to concentrate on the improvement of employment possibilities, improvement of the infrastructure (quality of roads, enlargement of parking places).

Deficit could be found in a support of new business opportunities, growth of competitiveness, which is also a reason of lack of employment opportunities for young people or seniors after the age of 50. Generally speaking, employment opportunities and attracting of investors are two major weaknesses of the city of Banska Bystrica. Despite of the existence of the industrial park in Salkova and the efforts of local public sector representatives, the city is still behind of cities with smaller number of citizens or the area, for instance Zvolen, which is situated only 20 km from Banska Bystrica. Problematic seems to be also the partnerships and the co-operation of public, private and not-for profit sector, which might be a reason of lack of confidence to co-operate or a deficit of existing co-ordination of common activities. Marketing would be one of possible tools to improve this situation, especially the co-ordination of the co-operation, which could be performed by the Department of Development and Marketing. The city Zvolen already established such department, but the city of Banska Bystrica still did not realize the importance of such co-ordination office in a city.

Satisfactory results have been achieved in the quality of environment, accessibility, quality of health care facilities, educational institutions. Communication with citizens is also at very sound level and the quality of services generally

is also very satisfactory. A paradox is that lack of the employment opportunities is in a city with citizens who are mostly educated and skilled. The city has a strong deficit in the innovation strategies, weaknesses are also in the capacity of accommodation facilities at good qualitative level, sport facilities, cultural events, etc.

One of the solution in the future could be a new concept of the Program of the Economic and Social Development of the city of Banska Bystrica for the years 2014-2025, which has been created, but is still waiting for the final recognition. The innovative approach from the side of public sector in this city could improve the governance, create new opportunities to the modern approach to marketing and branding of this city and to strengthen the participation of citizens at managing and governing of life in the city. This might improve also a transparency, growth of confidence in partnerships creation and forming new alliances, attract investors, students, new citizens to the city.

This research might be helpful for the public sector planners and politicians to recognize a city and especially desires of its users from the demand side, not only supply side (how they perform it and want to develop it). This might be also helpful for them to get support and votes in elections because reflection is sometimes more than plans and promises. The possibilities for cities as Banska Bystrica in Slovakia are open for further decisions.

In the end to sum the discussion up, Douglas North (a Nobel Prize winner) in the concept of the „adaptive effectiveness“ underlined the necessity of the effective change. For this reason, cities have to be open to continual changes and improvements and marketing and city representatives need to understand the meaning of place marketing, branding and be able to use it for their effective and adaptive governance with a co-operation a community.

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Cyber Education, from a Substitute to a Core for Learning in the Fourth Industrial Revolution Era

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Abstract

The fourth industrial revolution may yield greater inequality especially in the labor markets. Talent or creativity, more than capital, will represent the critical factor of productions and competitiveness. Job markets will increasingly be dichotomized into “low-skill/low-pay” and “high-skill/high-pay” segments. This represents that technological factors have hollowed out the middle. The demand for highly skilled workers has increased while the demand for workers with less education and lower skills has decreased regardless of nation’s wealth. The fearful middle class needs to respond to these phenomena through ambidextrous way, another word, learning while earning. The only way of doing two things in the same time is utilizing technology such as cyber education. Cyber education in Korea has demonstrated phenomenal shift from an educational substitute to a core for reeducation in the industrial revolution era. The paper proposes the relevant skills from the survey and reviews the transformation process of cyber education from a substitute for untraditional students to a core way of reeducation for the fourth industrial revolution.

I. Introduction

Technological innovations such as digitalization, nanotechnology, 3D printing, big data analysis, genetics and robotics are radically altering not only the business processes but also labor market landscape these days. The changes are broad and profound enough to affect almost all levels of human beings. The revolutionary development of technological changes shifted the daily lives of ordinary people. The term “Industry 4.0 (or in brief I4.0)” was initiated by the German government in 2013 for future competitiveness in high-tech products. I4.0 provides new methods and processes of future manufacturing, and those of the digital economy methodologies would change the human resources requirements completely.

Demand for a large set of jobs would diminish or even disappear in the near future. In the similar vein, Industry 4.0 solutions also involve a growing share of jobs in developed economies. Methods and processes of future manufacturing, and those of the digital economic methodologies and technologies would change the human resources requirements completely. It is expected however, that new technology, new business models and new societal challenges would not only change current jobs and roles in the organizations but create new employment opportunities and positions including requirements for new types of jobs.

The study “The future of employment: how susceptible are jobs to computerization?” has concluded that by the year 2033, 47% of the jobs in advanced economies are at “high risk” of being automated (Frey and Osborne, 2013). This means the general, relatively decent job holding employees in the developed economies are at high risk of unemployment. In 2014, 88% of the companies participating in a study conducted by Altimeter Group (Digital Transformation Survey) claimed to be undertaking a digital transformation effort (Solis and Szymanski, 2014). Digital Transformation Survey has confirmed the higher risks of unemployment in the developed economy. Big data analysis, 3D printing, digitalization and robotization are enforcing the automation and substitution of human workforce in traditional business areas such as accounting, maintenance, and even customer services. In contrast, such tasks are in high demand as creativity based industrial designs, social intelligences for negotiations, perception and manipulation of emergence surgery. These tasks will be free from the risks of automations. However, it is inescapable that many jobs as we know today will disappear or change dramatically.

Educational institutions must react to these trends and adapt their strategy to provide their students with the adequate skills and capacity for future jobs. Fast changing environment that was brought by the fourth industrial

revolution put most adults disarmed to adapt to the change. In the other side of coin, reeducating the incumbents of the society also lies to the educational institutions. Moreover, reeducation of existing workforce will be even more important both economically and socio-politically in the I4.0 era. As the pace of technical innovations far exceed the personal growth and development pace, lifelong education takes an important element for the success of I4.0 in the long run.

The study explores the role of the fourth industrial revolution in transforming the labor market in socio-technical perspectives. In the same vein, the study develops the idea of new way of educating incumbents through the developing technologies. The new way of education for existing workforce is inevitably required to equip with new professional skills and the digitalizing of jobs especially in the developed economies.

II. Technology and human labor

The recent study by Goldin and Katz shows that the wage gap by education has been diminished in the early and mid-20th century. However, after 1980, the wage differences by the level of education have been sharply increased both in the US and other industrialized countries (Goldin and Katz, 1998). The impact technological progress in the twenty-first century for the labor market outcomes has not been confirmed yet. Throughout the history, technological progress has vastly shifted the composition of employment, from agriculture and the artisan shop, to manufacturing and clerking, to service and management occupations.

Most technical development after 20th century guided the way of labor saving direction where early industrialized era shifted the labor from high and expensive skill to low and cheap one. An increase in the efficiency of production which reduces the price of one good, will increase real income and thus increase demand for other goods. Hence, in short, technological progress has two controversial effects on employment (Aghion and Howitt, 1994). Firstly, as technology substitutes for labor, a destruction effect shifted workers to reallocate their labor supply. Secondly, the capitalization effect results in higher productivity leading employment in those industries to expand.

There have been some doubts concerning human labor that may adopt new skills by means of education (Goldin and Katz, 2009). The educations of workforce have shown relatively limited effects for productivity. However, the increasing imbedded computing technologies allow

human resources more apt to learn and educate themselves. The workers can catch new technologies and new way of doing jobs relatively easily thanks to the technology (Brynjolfsson and McAfee, 2011).

On the other hand, the recent empirical findings are particularly concerning. For example, Beaudry, et al. (2013) documented a decline in the demand for skill over the past decade, even as the supply of workers with higher education has continued to grow. The study shows that high-skilled workers have moved down the occupational ladder, taking on jobs traditionally performed by low-skilled workers, pushing low-skilled workers even further down the occupational ladder and, to some extent, even out of the labor force (Beaudry, et al., 2013). The routine-intensity of employment is thus likely to result from a combination of offshoring and automation. The job opportunities for developed economies are dramatically changing. Furthermore, there is an evidence suggesting that improvements in transportation and communication technologies have augmented occupations involving human interaction, spanning across both cognitive and manual tasks (Michaels, et al., 2013). These explanations are nevertheless equally related to advance in computing and communications technology.

III. Technological changes and changes of job requirements

After the invention of steam power units (first revolution), introduction of mass production using electrical energy (second revolution) and employment of electronics and information technology for automation (third revolution), the world is facing the fourth industrial revolution, in a word - the digitalization of the world. People are nearly permanently connected with new technologies through smart phones, tablets, computers and other mobile devices. These new technologies allow people to access to a broad range of services like online chats, online shopping, online banking, flight and holiday bookings and e-tickets. In the similar vein, new technological opportunities and innovations provide new possibilities for companies to support their business operations in human-to-human, machine-to-machine and machine-to-human communication and interactions. Consequently, companies must adapt their strategic orientation to the new trend and to prepare their processes and employees for upcoming technologies.

Along with demographic and socio-economic changes, technological innovations transform industries and

business models, change required skills and shorten the employees' existing skill sets. Mobile internet and cloud technologies already have a significant impact on the labor market. In 2015, Internet of Things, for example, seemed to have a minor impact in comparison to the other trends. However, less than a year, the Internet of Things had a great impact both consumer market and the labor market, especially in industrial countries (World Economic Forum, 2016).

The fourth industrial revolution involves the connectivity of all human and mechanical factors over the complete value chain as well as the digitalization and real-time analysis of all relevant information. The usage and analysis of large amounts of data, the employment of sensors, robots and new technologies like the 3D-printing offer new opportunities to increase the overall productivity of a production system (Eberhard et. al., 2017).

I4.0 is projected not only to reduce manual workplaces, but to create new jobs that are more flexible and less physically-exhausting. The fourth industrial revolution involves disruptive changes and requires a fast adaption capability. It is expected that by 2020, on average one third of the currently desired core skills sets of most occupations will be comprised of skills not yet considered crucial to the job today (World Economic Forum, 2016). Therefore, the importance of reeducation for incumbents and adults in the workplace is getting more crucial. The new way of doing education in both content wise and method wise is imperative.

Educational institutions are forced to react to the Industry 4.0 and prepare their students to equip with the capability and competitiveness. The phenomenal success of Minerva Schools is only a preliminary signal. The self-directed learning and real time based educational materials have been a dominant way of education. The traditional colleges and universities are forced to change the majors, curriculums and even departments.

However, the new way of doing education for incumbents in the business area is getting more crucial. Incumbents in the workforce are not free to learn. They have current roles in the workplace and should take care of families. In the same time I4.0 affects more crucial to the middleclass working families. For those working incumbents, cyber universities can be a viable option. Cyber education provides quality education regardless of time and location. Fast developing network infrastructure and speed facilitates the education quality and efficiency. The changing technologies and development of network

infrastructure will benefit the education systems.

A study conducted in 2013 by Frey and Osborne shows that 47% of the jobs then were in advanced economies were at high risk of being automated in the coming decades. New technological trends like big data analysis, digitalization and robotization are accountable for automating an increasing number of jobs, replacing human workforces in many areas. In the past, computerization supported human production. However, new algorithms for big data are now rapidly replacing human workforce in many work places. Most workers in the transportation and logistics sector, as well as office and administrative support worker and labor in production jobs are at risk (Frey and Osborne, 2013).

Controversially, business and financial operations supported by computer and mathematical functions are predicted to rise (Dunne, 2016). The human creativity and judgement will be essential in these positions. Due to the computerization and other trends, the employment market is facing drastic changes. Many jobs will become obsolete and new work places that require new skill sets will be established. Higher education is intended to prepare students to be able to work not just in one industry, but to give students knowledge about the processes in different industries. Moreover, reeducation or life time education is getting more important.

Education is vital for businesses and economies because the education concerns concrete goals, provides quality human resources, and develops social awareness. These are bases to maintain economic growth. Interactive learning methods and fast developing streaming technologies allow educational institutions develop various learning materials. The increasing ratio of interactive studies will be the dominant learning methods. The textbooks will be substituted by real time databases and other online tools. The integration of new technologies and pedagogies needs to be placed at the heart of institutions' teaching and learning strategies.

Institutional strategies should set out a coherent framework for the development of new modes of delivery as part of an institution's offering, the embedding of innovative technologies and pedagogies in curricula, and the provision of appropriate training for academic staff and students (European Commission, 2014). Economic growth is strongly affected by the skills and attitudes of workers. Besides, students should be trained in the usage of different information and communications technologies.

IV. Educational schemes and research design

There is a knowledge and skill gap between labor market requirements and the work force available these days. For example, European Commission presents that IT professionals lacks more than 800,000 (EU: 850,000; Germany: 120,000; Hungary: 22,000). Demand for highly educated work force such as Bachelor or Master of Science, or PhDs shows a definitive growth, and stagnation at medium levels. Eberhard and colleagues proposed 10 skill portfolios for I4.0 (Eberhard, et. al., 2017). Some skills suggested are social, cognitive, personal, and intercultural and so on. Table 1 presents the skills and rankings.

<Table 1> Skill Portfolio Ranking

Rank-ing	Skills	Representative capabilities
1	Social skills	Negotiations, emotional intelligence
2	Cognitive skills	Creativity, analytical skills
3	Personal/Mental abilities	Dealing with pressure and persistence
4	Process skills	Critical thinking
5	System skills	Decision making, entrepreneurial skills
6	Technical skills	New technologies, programming
7	Content skills	ICT literacy, active learning
8	Intercultural skills	Global experiences
9	Resource management skills	Time management

The skills suggested here can be a prototype of educational requirements especially in the cyber educational settings. The representative cyber university in Korea (Hanyang Cyber University) has provided the skills proposed here. The school departments cover engineering, management and economics, social science, foreign languages, law, design, and liberal art.

Social skills are challenging for cyber education. However, the school invested human resources to support professors. The teaching assistance is arranged every class for educational assistance. Other than textbook, most interactions among group students are governed and supervised by assistants. All the assistants have master's degree, and some are doctoral students. As all the functions are done through the Internet, the cost for assistance is relatively affordable.

Cognitive skills are devised by experienced professors in the Cyber University. Some trials and errors were

inescapable. However, 16 years of experience helps to manage the errors. Personal/Mental abilities and Process skills are covered by collaborations among faculties and with experts in the related area. The school curriculum is somewhat adjustable and modular. Most contents are not developed by the professor only but are developed with many experts in the related area.

System and Technical skills are more apt to the cyber education. Most students demonstrate high levels of satisfaction in this area. Content skills and Intercultural skills are most challenging part in the cyber education. Content skills require more capacity for students, where untraditional students demonstrate extreme diversities both in the level of readiness and educational background. Intercultural skills are challenging for cyber education because of language barriers. Probably the most success of cyber education is from resource management skills. The freedom from time and the location provides tremendous satisfaction for learners. This freedom can be a viable alternative for I4.0 education.

The students are from the diverse backgrounds such as floor workers, middle managers, and even top managers. The survey sample was a non-probability sample of convenience drawn from voluntary participants enrolled in undergraduate business-related classes. The samples of the respondents are full time undergraduate cyber university students. The number of responses were 716.

The average age of students is 34 and the age stands from early 20s to late 50s. The most respondents have full time jobs and many of them have children. The survey questionnaires were developed by 5-point Likert scale. The questionnaire set has 55 questions. Based on the explanatory factor analysis, the researcher identified two relatively exclusive set of components. The first set is named as social skills. The questions are related with the community idea and relationship building process through the cyber learning environment. The second set of components is inter-cultural skills. The inter-cultural skills cover ideas such as self-directed learning environment and relevance of learning material.

The first set of variables that constitute the idea of social skills is presented in the table 1. The question items related with the social presence demonstrated three components. The first component is named as "community feeling". The second one is named as "mutual interest and support". The third factor is named as "emotional connectedness". All three factors explain 69.141% of variances.

<Table 1> Components of Social Skills (by Principle Component analysis with Varimax rotation)

	Components		
	Community feeling	Mutual respect/ support	Emotional acquaintance
1. I pay attention to the peer students	.255	.684	.402
2. I concentrated to the dialogues with the peer students	.285	.685	.426
3. I believe the group work is efficient	.136	.679	.186
4. I was encouraged to learn by peer students	.313	.668	.210
5. Peers respected my opinion	.407	.696	.213
6. I respected peer students' opinion	.381	.721	.188
7. I made friends through the class	.390	.366	.659
8. I enjoyed the private chatting	.255	.344	.772
9. I was influenced by the peers' emotions	.256	.222	.769
10. I believe I know in depth my peer students	.471	.282	.649
11. I gained community feeling through the class	.607	.289	.518
12. I felt the group membership even in the cyber space	.585	.417	.288
13. I felt the peer students' efforts for community feeling	.665	.378	.205
14. The class discussion made community work	.779	.256	.218
15. I enjoyed the class discussions	.669	.254	.397
16. I can find how my peer students respond to my comments	.746	.217	.260
17. I felt the peer students understood my perspectives	.800	.291	.246
18. I felt the opinions were easily transferred	.791	.296	.290
Eigen Value	10.335	1.187	0.924
Variance Explained	57.415%	6.593%	5.133%

The second set of variables is related with the inter-cultural skills. The inter-cultural skills variables constitute 5 components. The first one is named as “learning reality”. The second and third component is “collaborative learning” and “autonomy of learning”. The fourth and fifth component is defined as “instructor utilization” and “self-directed learning” respectively. The explained variance is 65.643%.

Table 2 Components of Inter-cultural Skills (by Principle Component analysis with Varimax rotation)

	Components				
	Practical application of learning	Collaborative learning	Autonomy of learning	Instructor support	Self-directed learning
19. I try to ask a question to the instructor	.193	.163	-.087	.604	.261
20. I believe the instructors answer the questions sincerely	.150	.029	.180	.733	.166
21. I expect the appropriate feedback from the instructor	.184	.063	.238	.713	.115

22. I am not uncomfortable to the instructor's encouragement for participation	.233	.044	.266	.705	.048
23. I am not uncomfortable to contact the instructor	.176	.124	.125	.627	.000
24. Sometimes I study with my peer students	.099	.863	-.122	.024	.037
25. Sometimes I prepare assignments and test with my peers	.072	.882	-.117	.010	.064
26. I share various information with my peer students	.109	.899	.030	.088	.012
27. I share my opinion with my peer students	.140	.898	.008	.107	.032
28. I participate the group project eagerly	.215	.687	.054	.191	-.002
29. I try to apply the class knowledge to the field	.676	.081	.212	.313	-.008
30. I consult additional information concerning the class material	.657	.136	.173	.217	.051
31. I apply the class knowledge to the outside activities	.748	.118	.198	.208	.112
32. I apply my experiences to the class	.734	.045	.263	.225	.096
33. I learn the real cases at the class	.767	.129	.142	.120	.179
34. We share the field experiences at the class	.698	.238	.077	-.003	.174
35. I use the real corporate cases for my homework	.639	.061	.049	.156	.364
36. The class covers the real field cases	.523	.094	.073	.208	.351
37. I use my own strategy for the cyber education	.341	.127	.283	.217	.562
38. I try to find the answer by myself	.256	.028	.313	.178	.783
39. I try to solve the solution by myself	.251	-.019	.391	.138	.722
40. I decided to enroll the college by myself	.183	-.041	.786	.135	.136
41. I choose the learning time by myself	.202	-.040	.845	.178	.177
42. I decide my work activity by myself	.199	-.039	.836	.196	.206
43. My learning is my choice	.220	-.070	.796	.188	.210
Eigen Value	8.590	3.872	1.647	1.494	1.005
Variance Explained	34.36%	15.49%	6.59%	5.98%	4.02%

V. Conclusion

Industry 4.0 may dichotomize labor market “low-skill/low-pay” and “high-skill/high-pay” segments. Frey and Osborne (2013) predict that by the year 2033, 47% of the jobs in advanced economies are at “high risk” of being automated. Reeducation of existing workforce will be important both economically and socio-politically. I4.0 is projected not only to reduce manual workplaces, but to create new jobs that are more flexible and less physically-exhausting. The fourth industrial revolution involves disruptive changes and requires a fast adaption capability. It is expected that by 2020, on average one third of the currently desired core skills sets of most occupations will be comprised of skills not yet considered crucial to the job today (World Economic Forum, 2016).

Therefore, the importance of reeducation for incumbents and adults in the workplace is getting more crucial. The new way of doing education in both content wise and method wise is imperative. I propose cyber education will be an attractive option preparing the next revolution. As the empirical analysis proposes, the self-directed learning system is already in actions. The proposed skill portfolio can be drilled in cyber education settings. Considering skill portfolios by Eberhard and colleagues, and the proposed research, cyber education may meet the skill requirements for the I4.0. Moreover, educational efficiency and effectiveness will be an attractive alternative for the next generation.

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Management Education in India: from a State of Quandary to a Promising Roadmap

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Abstract

The objective of this paper is to examine the effectiveness of the current system of management education in India and prescribe interventions to make it more responsive to contemporary challenges. The paper describes the evolution of management education in the backdrop of socio-economic and political developments around the globe. It provides a threadbare analysis of Indian management education system, its growth over the years, gaps and pitfalls, and recommends the way ahead. It highlights the need for more contextualised research, pedagogical changes, improved academia-industry interface and other measures to fine-tune management education to emerging realities and challenges in the Indian setting.

Keywords

Management education, b-school, pedagogy, india, challenges

Introduction

“Management is the art of getting things done through others and with formally organised groups.”- Harold Koontz.

Management is a process of converting resources to utility. Management involves the five major functions that include Planning, Directing, Organising, Staffing and Controlling.

The origin of the term could be traced to the 16th-17th Century. It was inspired from the Latin word ‘Manus’, the French word ‘Mesnagement’ and Italian ‘Manegiare’. All these terms preceding ‘management’ reflected a control orientation- control over the manual workers for getting work done or making decisions on optimum resource utilisation.

Management should be practised with a sense of service to the community. In such case it stimulates growth, development and generates wealth in society. It fosters innovation, generates jobs and enhances living standards [Onzonol, 2010]. Some of the most prominent historical events in the world shaped the evolution of management as a separate discipline. These included European Renaissance, Industrial Revolution,

Scientific Management and Mercantilism. Gradually, the concept of ‘management’ evolved further resulting in the development of a body of knowledge through the cross-fertilisation of a diverse set of academic disciplines that included sociology, psychology, accounting, law, economics and mathematics.

Management Education was initially dedicated exclusively to business (particularly of big corporations) with prime focus on elites. Gradually it came to be confronted by a rapidly-growing demand from millions of individuals who expected a better future as they entered entrepreneurship and management in the backdrop of evolving market forces [Kozminski, 2010].

EMLYON business school in Lyon (France) was the first business school to come up through the efforts of Lyon Chambers of Commerce and Industry, in 1872. The world’s first collegiate school of business was established at University of Pennsylvania in 1881, through the initiative of Joseph Wharton, renowned American entrepreneur and industrialist, known as the Wharton School. In 1908, Harvard University set up the Harvard Business School. This was followed by establishment of Kellogg School of Management in Chicago that provided part-time evening programme in Management. The following

years witnessed the setting up of several B-Schools. viz. MIT Sloan (1914), Columbia Business School (1916), Stanford Graduate School of Business (1925), etc.

Gradually, a wave of management education kicked-off across USA, Europe and Asia and a number of B-schools came into existence, and most of them are leading global B-Schools today. For example, in 1957 INSEAD came into existence. IESE Business School was setup in 1958, IIM Ahmedabad was founded in 1961, London Business School came in 1964, National University of Singapore School of Business was founded in 1965, I E Business School was founded in 1973, Yale School of Management was setup in 1976 among others. The objective was to create a managerial cadre and business leaders with appropriate skill set, knowledge and attitude. Business education catalysed the development of a corporate culture, standards of excellence, long term strategic planning, effective leadership, standardisation of processes and systems, objective decision making and team spirit.

Management education in India

Management education – its evolution in India

Management education was excluded from the education system of India till independence. Doing business was associated with specific castes and heredity determined the passage of skills and knowledge across generations. The first college, set-up in 1913 to impart business knowledge at basic graduation level, was the Sydenham College. The Shri Ram College of Commerce, with its focus on trade and commerce instead of management, was set-up in Delhi in 1920. After independence, newly established universities included commerce in their curriculum. It was considered as a key component of the multidimensional plan to transform a primarily agrarian economy to an industrial economy. The Second Five Year Plan provided the seminal thrust toward achieving rapid industrialisation. The need of the hour was to build capacity to manage development in critical manufacturing sector. Early experiments in two-year full-time MBA programme were done in 1955 by Delhi, Bombay and Madras universities. In early 1960s, government of India showed the first serious interest in setting up centres of excellence in management education. Indian Institutes of Management (IIMs) were set-up to impart professional education in management. Their mission was to teach professional management, conduct research, train managers, consult organisations and contribute to

institution building in the country.

1961 saw the setting up of the first IIM at Calcutta and in 1962, the next one was established at Ahmedabad. In 1986, IIM Lucknow came into existence and in the last decade of the 19th Century two more IIMs were setup- IIM Indore and IIM Kozhikode (1996). The 21st century is witnessing a rapid increase in the number of IIMs with 14 new IIMs being established between 2007 and 2017, taking the total number of IIMs in India to 20.

Meanwhile, in 1970s and 1980s, new management departments were created within major universities. The economic reforms of 1991 kick-started an era of liberalisation, privatisation and globalisation which gave a renewed thrust to management education in India. The sluggish economic progress gave way to rapid growth of the Indian economy thereby boosting the demand for professional managers who could man the recent entrants in the Indian markets- the Multi-National Corporations. The rapidly growing demand for trained management graduates prompted the private sector to enter domain of management education in the 1990s.

With yearly MBA admissions of around 12000, the number of MBA institutes in India hovered at just 130 in 1991. In 2009, this number jumped to 1608 MBA institutes and 391 PGDM institutions. Presently, an ASSOCHAM report states that there are 5500 B-schools in India with total collective seats at 5.2 lacs. Previous two decades have seen mushrooming of management institutes in India. The global recession of 2008 led to a drastic decrease in demand for MBA graduates, and hence the rise in number of management institutes during this period almost came to a standstill.

Current pedagogy - challenges

Management education, while being popular and developing rapidly, is now facing a critical situation.

- Emulating the ‘American model’ while neglecting India centric contextualised research and pedagogy

From the very start, the ‘American model’ has been the inspiration for setting up management education institutes in India. Business schools in the US focussed on their domestic business requirements which is, barring the common features, quite different from that of third world countries. These schools developed their theories on management by conducting empirical research in the context of their own business environment, thus impacting their pedagogy. Barely any efforts have gone

into ascertaining the cross-cultural validity of their theories. Indian B-schools while adopting the US model did not make any serious attempt to develop pedagogical content and conduct research in the context of business environment in India. This is clearly shown by the standardised curricula followed by all B-schools in India. Similar trend is seen in the research focus and course content at even the IIMs.

On the contrary, B-schools in the US have diverse course structure and foci reflecting their distinct identities. Indian management education has not drawn upon prevailing business practices and traditions that find inspiration in the rich history and culture of India. There are hardly any concrete examples of contextualised studies being done and management curriculum being developed based on the Indian business environment. The business environment in India deserves a unique blend of management theories and sociological realities to create a distinct body of knowledge.

The working Group on Management Education of National Knowledge Commission (2006-07) observed: “The materials used for teaching are also not of relevance to the student background or living experiences in India. The focus on campus interviews, careers and jobs further detracts students from gaining a disciplinary understanding of the specializations and society in which they have to innovate and be influential leaders.” The report goes on to emphasize the lack of discussions on promoting research and innovation, upgrading management education curriculum and adapting course content to the changing environment of management institutes in India.

- Poor institutional capacity

Many of the newly setup management institutes lack the requisite institutional capacity for transformative classroom delivery process. They have a focus on employability and narrow specialisation. Transdisciplinary dimensions and innovative thinking are neglected in the process. Management institutes hardly engage in any dialogue for improvement of management education and there are no discussion platforms for faculty members to deliberate on quality issues.

- Problems pertaining to teaching methodologies

Traditional classroom teaching is becoming ineffective for inexperienced students to develop organizational understandings.

Prioritising rote learning over application-based learning

An examination centric system that tests the ability of students to reproduce bookish knowledge prevents students from developing interest in applying concepts. Critical thinking, analysing problems and exploring solutions are critical areas that are overlooked by the examination centric system. The premium attached to marks motivates cramming.

Silo based view of subjects

Every subject is seen as a stand-alone area of study. Despite subjects having a multidisciplinary nature, inter-subject linkages are not taken into account. This deprives the student of having a holistic view.

Poor mentorship

The forerunners in management education – the IIMs – have not played an adequately pro-active role in mentoring new-comers in the field. Elitism of the IIMs has come to be associated with exclusivity that motivates aloofness from guiding other institutions.

Excessive teaching: Loss for both- faculty and students

The model of management education that India has adopted puts enormous impetus on teaching. Thus faculty is left with no time for pursuing research and there is insufficient time for students to absorb knowledge and then apply it to creative problem solving. With lack of industry collaboration, faculty members are deprived of constant exposure to industry. A typical Indian MBA student goes through double the number of courses as those taught in a premier B-school of US [Bhattacharya, 2010]. Since students have less time at their disposal, they resort to cutting and pasting for completing many of the assignments given to them. Management education in India has missed the mark in grooming students in soft skills, providing multidisciplinary education, developing an international perspective, learning by experience and inculcating ethical and social responsibility in B-school graduates through teaching. Little efforts have gone into testing the applicability of management theory as taught in the books. As a consequence, Indian management education system failed to develop a niche and a distinct identity. As explained by *Kamal Choudhary* “Management Education in India, along with other higher education has built an edifice of learning but has deprived it of its foundations - foundations rooted in the social, economic, political and cultural life of people” (Quoted in Philips and Narayan, 1989).

- Neglect of Research and the gap between research and practice

Quality issues have plagued research output in many management institutions around the world. Thomas (2010) has observed that, many a times research in Business schools has been found to be of less relevance to practical application and necessitates greater engagement of researchers and practitioners. A 2007 report of the *Association to Advance Collegiate Schools of Business (AACSB)* observed: “The rapid change in the size and stature of research in Business schools has engendered passionate dialogue and debate. For example, Business schools have recently been criticized for placing too much emphasis on research relative to teaching and for producing research that is too narrow, irrelevant, and impractical.”

In India, other than some of the premier B-schools such as IIMs, IIT b-schools and some private institutions like MDI Gurgaon and XLRI, most of the tier 2 and 3 institutes do not provide a conducive environment for research. As a result, only profit motive, placements and tangibles like state-of-the-art facilities get prioritised at the cost of innovation and knowledge creation. Poor research ecosystem in Indian institutions is one of the main reasons for the poor show put up by Indian universities in global rankings such as QS year after year.

- Quality of faculty

There is relative devaluation of teaching career vis-à-vis careers in industry. Most talented candidates prefer professional careers in the industry pulled by the promise of fat pay packages. Academia often becomes the choice of not so talented or a second career option for those who are unable to make the cut in hyper competitive entrance examinations. Third tier institutes are happy to give them teaching positions despite most of them not holding PhD degrees, in the process violating the UGC norms. Even if they stipulate PhD requirement, it is hard to get PhD faculty as the latter prefers to get into First tier institutes.

- Poor Curriculum Design and up-dation

Developing a curriculum is a challenging and difficult task and has to be continuously revised and updated to meet the needs of rapidly changing business scenario. Bureaucracy and administrative lethargy in most Indian Universities and MBA institutes leads to the same syllabus persisting for decades. Some private institutes also avoid upgrading the syllabus as this may create need for new faculty or to spend on training existing faculty. As a result, the curriculum remains out of sync with emerging industry demands and hurts employability of the

B-school grads. Another related challenge is the one-size-fits-all approach towards curriculum design. Most Indian B-schools have a high proportion of common elements in curriculum, whereas in the US, renowned B-schools like Kellogg, Stanford, Wharton etc have unique elements in curriculum that differentiate each one of them from their peers.

- International reputation

The best schools in India may not be the best internationally. Given that India has one-sixth of the global population, is a rising economic power and becoming an important player at the global stage, the representation of its B-schools in global rankings is abysmally low. Apart from IIMs at Ahmedabad, Bangalore and Calcutta, no other B-school (except ISB Hyderabad) from India makes the cut for top 100 management schools of the world as per credible rankings such as FT and Forbes. Only six Indian B-schools have international accreditation from the Association of Advanced Collegiate School of Business (AACSB, U.S.A). Indian B-schools fare poorly in terms of number of foreign students enrolled, foreign faculty and international alliances and partners.

- Absence of a dedicated government body

In India the technical and management education is looked after by the AICTE and its subsidiary- the Board of Management Studies. Since the issues affecting management education require special and dedicated focus, there is a need to have an independent body that would be accountable for setting standards and quality improvement in management education at the national level. Mr R Gopalakrishnan has proposed in an article that a National Task Force on Management Education might be constituted for this purpose that would be independent of AICTE. The government has made an ambitious beginning through enacting the IIM Act which has given autonomy to the IIMs. But, a central level independent institutional mechanism is still required to manage quality standards in other accredited B-schools.

Future roadmap for Indian management education

There are eight unmet needs of the MBA programme that demand the focus of B-schools in order to secure their relevance in the times to come. These needs have been proposed by Datar, Garvin & Cullen (2010) in the following framework:

1. *Gaining a global perspective*

Learning how best to manage in context of cultural, institutional and economic differences across nations

2. *Developing leadership skills*

Understanding the dynamics of leader behaviour in new age organisations and developing alternative approaches to influence, guide and inspire subordinates.

3. *Honing integration skills*

Having a multidimensional understanding of issues to enable holistic definition of problems. Negotiating unstructured situations to arrive at meaningful conclusions. Taking decisions on the basis of multiple and often conflicting perspectives

4. *Recognising organisational realities and implementing effectively*

Ensuring effective management and getting things done when faced with competing viewpoints, unwritten rules and organisational politics

5. *Acting creatively and innovatively*

Engaging in divergent and lateral thinking that stimulates creativity; utilizing large volumes of data to arrive at organisationally relevant information and generate creative solutions to problems

6. *Thinking critically and communicating clearly*

Logical articulation, effective persuasion and the ability to evaluate the merit of arguments and opinions

7. *Understanding the role, responsibility and purpose of business*

Discerning the demands of various constituencies including employees, customers, shareholders and other stakeholders. Balancing these demands with organisational objectives

8. *Understanding the limits of models and markets*

Developing foresight to understand emerging patterns and acknowledging sources of error in decision making. Being cognizant of what might go wrong and how to build appropriate safeguards for maintaining organisational performance.

Reforming management education in India: addressing the challenges

- Making management education context specific

The fact that Indian management education derives heavily from western models has been stated earlier. The efficacy of western paradigms, curriculum and teaching materials in the Indian settings may not be at par with that in the

western settings. The paradigms of management have to be redesigned according to the politico-economic, socio-psychological and cultural realities of India. At the same time, internationalisation demands creation of a globally competitive and internationally mobile managerial cadre. Therefore, management education in India cannot afford to be completely divorced from western management paradigms. What is required is a synergy between the two. There is a need to strike the right balance in order to build a uniquely Indian management paradigm that incorporates the best and the most relevant principles and practices from the western thought without blind imitation. Theories and models of the west must be 'married' with contextual knowledge created through the interaction of disciplines like Indian Sociology, economics and history.

- Going beyond the classroom, transformative learning pedagogy and infusing dynamism in curriculum

In order to produce globally competitive managers ready to face the 21st Century business realities, it would be naïve to rely solely on the time-tested method of classroom instruction. Current management pedagogy should be able to provide insights into the complete spectrum of contemporary business management and its future contextualised in the Indian settings.

While fundamental changes are sweeping across the business world, most B-schools rely on the same old curriculum and pedagogy. There is little upgradation that would tailor the curriculum and pedagogical models as per the requirements of rapidly changing business needs and technological developments.

Redesigning Curriculum for transformative learning

With respect to the content of educational curriculum, there is no lack of research and recommendations. It is commonly concurred that the instructional method of curriculum ought not to be oriented towards examination; it ought to be oriented towards learning. Needless to say that opportunities to learn brings extended mindfulness, versatility, flexibility and cleverness, innovativeness, reflection, self-awareness and basic leadership, which are critical for the managerial cadre to be adept at managing 21st Century businesses. Through transformative learning, students are able to develop positive, sound and profitable relationships, tackle issues and arrive on right decisions/choices, be planful and make changes when required.

Business Games and experience-based problem solving

Another important aspect of transformative learning

pedagogy is the utilisation of business games. Involving students in these games generates team spirit and the ability to arrive at solutions to complex problems through team effort. Management education should shift its exclusive focus from theory toward practical experiences, solving complex business problems and promoting out-of-the box thinking styles.

Emotional Intelligence

Emotions and Intelligence are key aspects of a person's personality and facilitate his or her adjustment in the environment. They also influence personal happiness and well-being. A high order of Emotional Intelligence is one of the most important attributes that managers of the 21st Century need to possess in order to meet the contemporary business objectives of people, profit and planet. Emotional Intelligence is the ability to monitor one's own and other's feelings and emotions, to discriminate among them and to use this information to guide one's thought and actions. Daniel Goleman has popularised the concept of Emotional Intelligence the world over. Through empirical researches he found that individual success at work is 80 % dependent on Emotional Intelligence and 20 percent on IQ.

Soft skills

Soft skills are increasingly been viewed among the key factors responsible for long term success of businesses. They encompass a wide variety of skills including communication skills, ability to negotiate, solve problems at interpersonal level, leadership and cross-cultural understanding. Management education syllabus must include these in its ambit.

Artistic approach to learning

Management is not just a science but also an art. The aspects of management which best lend themselves toward the domain of 'arts' would be best learned through an artistic approach. Presentation and communication skills, understanding diversity, negotiation, story-telling etc are cases in point. These could be best taught by artists. Kerr and Lloyd through their study conducted in and Australian university have called for inclusion of art-based pedagogy in management education.

Shift from pedagogy of separation to pedagogy of inclusion: From "Or" based to "And" based thinking

There are significant commonalities across disciplines within management education. However, the contemporary focus is on viewing these disciplines in

silos -something that can be termed as pedagogy of separation. This has to give way to pedagogy of inclusion (Sankaran, 2012). Doing so would augur well for holistic understanding and avoid gaps in understanding and fragmented knowledge. In his thought-provoking paper, Dr Sankaran has highlighted the need to shift from 'OR' (dichotomous) thinking to 'this AND that' (integrative) thinking. This is critical for arriving at effective solutions to new emerging problems and hence is important for management decision making. It stimulates 'divergent thinking process' as against 'convergent thinking' and the decision maker is able to view the problem at hand from multiple dimensions and think of better alternative solutions. Integrative thinking is also in consonance with the need to sensitive to cross-cultural variations, respect diversity and have an inclusive mindset. Sankaran has also called for moving away from being overly prescriptive.

- Forging stronger industry linkage

Contemporary business environment is being continually shaped and re-shaped by fast evolving technological developments and new ways of doing business. Many of them are termed as disruptive innovations. In such a scenario, it becomes imperative for management education to be tuned to industrial trends and demands so that it could become truly contemporaneous. In this backdrop, the need for a close collaboration between industry and management institutes can hardly be overemphasized. Sadly, most Indian B-schools are lagging on this front against comparator b-schools from the developed countries.

Areas wherein mutually beneficial engagement is possible between industry and B-Schools [Philip, 2009]

- Greater impetus to industrial training modules for faculty, and opportunities for consultancy
- Appointing industry-managers on faculty positions for specified periods
- Allowing students to work on live industrial projects that would give them hands on experience of problem solving
- Organising study tours, industrial visits and internships for students in industrial settings
- Engaging domain specialists from the industry in designing b-school course curriculum and syllabi
- High quality collaborative research with the industry for developing context-sensitive knowledge

In recent times, there is an increasing demand from various sectors of the economy for specialised managerial cadres. B-schools have responded to this demand by initiating sector-specific courses such as tourism management, hospitality management, sustainability and agri-business management among others. In order to improve the sector-relevance and suitability of these courses, a close partnership between industry and B-Schools is indispensable. Flexibility and independence from 'top down' control structures are also needed on part of the b-schools to develop required curriculum and pedagogical methods in close collaboration with the industry concerned.

- **Mainstreaming Ethics in management education**

The free market economic model and tremendous influx of competitive forces has put a premium on profit maximization for new age enterprises. The relentless pursuit of profit, often by adopting unfair practices, results in undesirable consequences like compromised integrity, loss to the public exchequer, violation of public or stakeholder trust, environmental damage, child labour, pollution and indiscriminate and uncontrolled extraction of natural resources. This state of affairs signals an unmet need for an ethical quotient among today's managers. Famous industrialist J.R.D Tata once quoted- "There is indeed a need to rekindle old principle and ethical values which have often been ignored or neglected in recent years in the false belief that quicker profit and greater accumulation of wealth would be the result" The relevance of this quote is very much alive today. There is a need to introduce teaching and research programmes in business ethics in a big way. Ethics and values should occupy centre-stage in contemporary business education. Whether they should form a separate segment of the syllabus or whether they should be incorporated with each segment of learning is an open question. In the later case, however, students can be exposed to ethical dilemmas faces by managers in real life scenarios. They can learn to interpret each choice from the perspective of ethics and moral values [Sheth, 1993]

- **Developing research orientation and promoting collaborative research with industry**

The industry happens to be the most prominent beneficiary of the steady supply of business managers churned out of B-Schools. Therefore, the industry must take the lead in promoting research programmes in B-Schools. The *National Knowledge Commission's Working Group on*

Management Education has advocated greater role of industry in promoting research in management institutions. Collaborative research projects, industry sponsored research programmes, research chair professorships and fellowships for doctoral students are some of the avenues where industry can extend support to the B-schools.

- **Overcoming regulatory rigidity**

AICTE and UGC are two important regulatory bodies that control management education in India. These bodies follow rule-based approach and prescribe uniform curriculum and teaching materials. A prevailing viewpoint is that these bodies stifle the independence and infuse rigidity in management institutions and the latter are deprived of their autonomy in curriculum development and updation. Any strategic change in pedagogical process is rendered difficult in the face of standardisation of curriculum and teaching materials. Dayal (1991) aptly argues that standardisation promotes, more of than not, mediocrity.

- **Developing worthy faculty**

While curriculum redesign and practical orientation in tune with the changing business realities is the need of the hour, the need for developing worthy faculty is also paramount, especially in the backdrop of global shortage of educators.

Datar, Garvin & Cullen (2010) staffing model

These researchers have thrown light on the relevance of staffing model followed in medical schools for the management institutions. In medical schools, doctors serving in the attached hospitals serve as faculty. This model, if followed in management education, would entail meaningful involvement of practicing managers in teaching. The wealth of business experience they bring would enrich both research and classroom learning.

Conclusion

India's rising economic and political stature on the world stage demands adaptation and flexibility on part of our educational institutions to meet the demand for building a knowledge-based economy. Management education has to respond to this challenge through realignment of its curriculum, pedagogy and research focus. Holistic restructuring efforts in management education would result in production of a managerial cadre that would take the economy forward and contribute in making the 21st century as the Asian century. Towards this end, many of the ideas discussed in this paper could provide useful cues.

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A Study on Tourist Satisfaction Level at Chitwan National Park

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Abstract

An overall tourist satisfaction level, in terms of its relationships with various attributes like visitor's perception, age, gender (male or female) and visit pattern was examined by this paper. The respondent chosen randomly was 350 tourists visiting Chitwan National Park through Sauraha. The analysis suggested that the visitor's satisfaction level to the destinations has strongest effect on their overall satisfaction with their experiences. Destinations variables or attribute such as weather and scenery, behavior, recreational activities, hospitality & service, culture & festival found to be positively correlated to overall experience satisfaction, when other variable are taken into consideration, its effect on overall satisfaction was found to be statistically significant. Findings suggested that the majority of the tourists were satisfied with Chitwan National Park during the survey.

Keywords

Satisfaction, tourist, visitor, weather, destination, hospitality, service

Introduction

Nepal serves as one of the best collection of wild life on this planet where visitors get a chance to see an exotic Lophophorus to an elusive Royal Bengali Tiger. The most endangered one- horned Rhino as well as snow Leopard can be captured from Terai range to the mountain. Nepal has been the home of different cultural and Bio diversity; it has the largest collection of birds and butterflies in the world, different ethnicity and languages, an elevation of 70 m to 8,848m, a wide variety of wild florals and faunas and most excitingly the Mount Everest and The birth place of Buddha.

The country has managed to preserve more endangered species of flora and fauna than any other country in Asia. Now, the protected areas in Nepal include 10 national parks, 3 wildlife reserves, one hunting reserve and 6 conservation areas and 11 buffer zones covering an area of 34,186.62 sq. km, that is, 23.23 percent of the total area of the country. Chitwan National Park is very popular destination in Nepal and across the world for

wildlife habitation. It was established in 1973, lies along the southern border of Nepal with India at an elevation of 300m and less (WWF Nepal, 2006a). It is located between 27°34' to 27°68' North latitude and 83°87' to 84°74' East longitude (UNESCO, 2003) and is the World Heritage Site since November 1984 under the World Heritage Convention, recognizing its unique biological resources. The national park covers 1,182 sq km and the surrounding buffer zones area is 766 sq km. which has tropical and subtropical bio climatic zone with a tropical monsoon environment and high humidity all year round. The mean annual rainfall is 2000 - 2100 mm, with over 80% falling during the heavy summer monsoon season. In the summer, the maximum daily temperature is around 35°C, nights are around 20°C. In the winter the daily maximum remains around 25°C, but night can fall under 10°C (UNESCO, 2003). The biological richness of the park is exceptional with eight ecosystem types which include seven forest types, six grassland types, five wetland and three main river system habitats (DNPWC, 2008). The faunal diversity consists of 50 species of mammals, 526

species of birds, 49 species of reptiles and amphibians, and 120 fish species (WWF Nepal,

2006a). The floral diversity of the park consists of more than 600 plant species which include 3 gymnosperm, 13 pteridophytes, 415 dicotyledons, 137 monocot, 16 species of orchids (UNESCO, 2003). The park harbors the rare tree fern (*Cyathea spinosa*), cycas (*Cycas pectinata*), screw pine (*Pandanus furcatus*) and many endangered animals such as Asian one-horned rhinoceros, Asiatic elephant, Bengal tiger, gaur (*Bos guarus*), gangetic dolphin (*Platanista gangetica*), giant hornbill (*Buceros bicornis*), Bengal florican (*Houbaropsis bengalensis*), and Gharial (*Gavialis gangeticus*) (UNESCO, 2003; WWF Nepal, 2006a; DNPWC, 2008; Straede and Treue, 2006).

It is also the most visited national park in the country. Those involved in the park's management face challenges of protection, conservation, addressing concerns of those living adjacent to the park and dealing with increased numbers of tourists. The livelihood of the protected areas and the surrounding village is agriculture and tourism. So, there is sometime the tussle between animals and villagers but the villagers adopt the co-existence of natural habitat and ecosystem.

Sauraha is a village in Chitwan District of Nepal situated close by the Rapti River and the Chitwan National Park. It is the eastern gateway to Chitwan National Park and jungle safaris for budgeted, mid-priced tourists. Beginning literally as small and very quaint Tharu village of mud and daub huts and houses, it has grown into a small quiet town full of western style hotels and resorts, restaurants, internet cafes, and gift shops.

For the purpose of this research, Sauraha village was used to take data survey as this is the centre point and main entrance for Chitwan National park for local and international tourist. As this village has all the necessary facilities for tourist accommodation and other facilities, this place was chosen due to an easy excess to tourists.

Motivation and objectives

Although the tourists coming to Chitwan National park has been increasing every year but a research was never carried out to examine the satisfaction level at this destination. So to understand the customer satisfaction this research was conducted. One of the study claims, customers with problems usually don't react and only 4% of them complain to the service provider but tells 9 other people about it; while satisfied customers only tells 5 other people about their good experiment. These facts

highlights the crucial role of satisfying customers and hence, the profit maximization of the company. Therefore, organizations need to understand that to what extend their customers would be satisfy. Customer satisfaction in marketing context has specific meanings: Anders Gustafsson, Michael D.Johnson, & Inger Roos (2005) brought customer satisfaction definition as customer's overall evaluation of the date. This satisfaction has positive influences on retaining customers among different variety of services and products. In service based enterprises; service quality directly affects customer satisfaction.

In order to satisfy customers, company should improve its services and if this service is provided genuinely by the entire stakeholder, the numbers of tourists visiting the national park will increase day by day. Tourism near same areas develops as tourist increases and hence the number of hotels and resorts increases rapidly. People are directly or indirectly benefited by the tourism helping them create employment opportunities for local communities. Therefore a sustainable tourism can be adopted by providing quality services to increase high level of visitors' satisfaction. For this reason, and to look at into satisfaction level of services provides as a whole at this destination is carried out.

An increasing human activity is the biggest threat for the existence of the national Park; the human influence is a major concern of the Park as this caused deforestation, land degradation, diminishing water resource resulting decreased bio diversity. Therefore, this research is conducted to know how visitors are getting satisfaction towards various activities and was their expectation extended their perceived value in Chitwan National Park. In short, this research identifies the level of satisfaction of the tourist towards Chitwan National Park. The research also analyzes the relationship between tourism activities and overall satisfaction. There are various products that influence people for travel. There must be significant relationship between tourism activities and tourist's overall satisfaction. For the satisfaction of the tourists, there should be proper visitor management policy. Environmental concern is another sustainable practice that helps to protect National Park in the long term. Customer satisfaction in the long run always will be beneficial to the tourism entrepreneur and local people who have been involved in tourism industry. This is very important to understand the level of tourist's satisfaction in the destination. Understanding satisfaction and

dissatisfaction of the destination helps to those who are involved in tourism to maximize benefit and reduce the cost of tourism.

This research has identified the following research problem in Chitwan National park.

- If the tourists are not satisfied with the facilities services and activities in the destination, they will neither not be coming nor recommending friends for visiting the place.
- If there is no proper policy and visitors' management program, tourists will not have good services and facilities as expected so they may create bad image in the market.
- The entire tourism stakeholder should be concerned to provide better services and facilities if they want to create and increase number of tourist.
- Travel agency, hotel operators, tour guide, and transportation should be continuously focused on customer satisfaction.

Form the analysis of the research problem; following questions are designed to fulfill the objectives. The survey questionnaire was designed in such a way to answer of the following questions.

- a. What is the response of tourist towards recreational tourism activities?
- b. What is the relationship between tourism activities and overall tourist's satisfaction?
- c. Does tourist like the local people's culture and hospitality?
- d. How tourists are satisfied with environment and the surrounding?
- e. How are the general behaviors towards tourist by stakeholders?

The overall objectivity of the study is to find out the level of tourist's satisfaction with activities and services provided in Chitwan National Park and surrounding of Sauraha. This is to examine how visitors response about the services and facilities in that area. So it focus on visitors' satisfaction with, particular components of the range of products, services, activities, places and infrastructure that contribute to their experience as a whole.

Literature review

Chitawan national park

Chitwan National Park (CNP) is first and one of the oldest national parks (NP), have been established in 1973, and

covering 932 sq.km. in the sub-tropical lowlands of the country. It is famous for unique biodiversity of flora and fauna, and outstanding natural features. The Park is extends in 4 districts as: Chitwan, Makawanpur, Nawalparasi and Parsa. More than 74% of the area of the CNP falls in Chitwan district. There is further, about 8% in Nawalparasi district, 12% in Parsa and 6% in the Makwanpur district. It is the suitable habitat of more than 50 species of mammal, one horned rhino and the Bengal tiger. There are over 525 species of birds, including the Bengal florican, Lesser florican, Giant hornbill, Black stork and White stork as well as more than 35 amphibians and reptiles (MFSC, 2002). Tharus are the main indigenous ethnic groups in this area. Recognizing its unique ecosystems of international significance, UNESCO declared CNP a World Heritage Site in 1984. An area of Timilsina, L. B. 19750 sq.km surrounding the park was declared as a buffer zone in 1996, which consists of forests and private lands (DNPWC, 2000). The buffer zone (BZ) of Chitwan National Park was declared in 1996 AD which spread over various parts of 4 districts and inhabited by a multi-ethnic population of about 2,23,260 people. Among these I have taken survey based on Sauraha and surrounding. After the advent of anti- malaria campaign, in 1950 to 1960s and construction of roads linking Chitwan with other parts of the country, the forests were cleared up for better agriculture. The wild animals compelled to move into the degraded forests. The grasslands form a diverse and complex community with over 50 species. The main attraction of Chitwan National Park is its wilderness, forest, grasslands and wetlands with great opportunities to sight innumerable varieties of wildlife in their pristine natural habitats. In Nepal, National Parks and wildlife conservation act was enforced in 1973 which provided a legal basis for the management of protected areas. In Nepal, five categories of protected areas system are operating under the Department of National Parks and Wildlife Conservation (DNPWC) namely: National Park, wildlife reserves, Hunting Reserve, Conservation Area, and Buffer Zone (Chaudhary, 1998). To date Nepal has 21 protected areas which cover approximately 18 % land of the country (Journey to Kathmandu, 2000).

Tourism at Chitwan national park

Tourism is not evenly spread throughout Nepal. There are three main centers which account for an overwhelming share of the tourism market: the Kathmandu Valley, Pokhara (leading to the ACAP), and the Chitwan National

Park. Chitwan National Park is the most visited protected area in Nepal. In 2007 the national park attracted just fewer than 17% of all tourists visiting the country: 86,433 tourists entered Chitwan National Park of the 526,705 tourists who entered the country (DNPWC, 2008).

Table 1: Total number of Visitor to Chitwan National Park /2016

Protected Area	Shrawan	Bhadra	Aswin	Kartik	Mansir	Paush	Magh	Fagun	Chaitra	Baisakh	Jesth	Asar	Total
Shivapuri Nagarjun National Park	21299	18984	9585	18409	16022	15222	13415	18686	19211	18338	19906	16670	205747
Chitwan National Park	7442	6023	10108	15808	12259	12165	11562	13260	17451	15076	12201	5770	139125

Source: Dept. of National Park and Wildlife Conservation

K. Bhattarai et al. (2005) describe Chitwan National Park as a typical example of externally-induced, uneven development rather than a model of wildlife conservation. Several authors argue that the endangered species in the park are indeed protected, but only to be commoditized for the consumption of high-class tourism (Bookbinder et al., 1998; Jones, 2007; Spiteri & Nepal, 2008b). It is further argued that the park's establishment has severely disrupted the domestic economy of local people (Stræde & Helles, 2000; McLean & Straede, 2003; Hjortso et al., 2006). The high tourist season around Chitwan National Park is in October and November as skies are clear, and temperatures are warm (Bhusal, 2007). The main attractions in the park are its wilderness, forests, grassland, and wetlands with their outstanding wildlife sighting opportunities (UNESCO, 2003). Tourist activities include elephant safaris in both the park and community forests, canoeing for animal sightseeing and bird watching, jungle walks with a guide inside the park lasting a couple of hours or a couple of days, visits to wildlife breeding project such as for domestic Asiatic elephants and gharials, jeep safaris inside the park and watchtower overnight adventures (UNESCO, 2003). The park has a number of government run tourist facilities including the visitors' center in the community of Sauraha and the Park headquarters in Kasara which is located inside the park (DNPWC, 2008). Some tourists come to Chitwan National Park with tour groups that stay for three or four days and have all their activities booked in advance. Tourists who are not part of an organized group often come on pre-packaged three or four day trips, including travel time. These packages are often sold in Kathmandu. A third type of tourist travels independently to Chitwan National Park and books activities through independent agencies selling their products around the park border (Mueller-Boeker, 2000). Chandni (2010) reports that elephant safaris are

the most popular tourist attraction at Chitwan National Park, followed by sunset watching on the Rapti River and the Tharu cultural programs. Tourist numbers around Chitwan National Park has been rising over the last three decades (UNESCO, 2003). In 1977, the park had only one lodge with about 5000 annual visitors. In 2000 there were seven lodges operating inside the park and more than 70 lodges outside the park based predominantly in the town of Sauraha (Whelpton, 2005; Bhusal, 2007). There are about 22 tourist guide offices with 383 professional guides around Sauraha (Bhusal, 2007). It was reported that during the fall tourist season of 2009, the volume of elephant safari activities rose 50% from the previous year (Chandni, 2010).

Sauraha

Sauraha is located on the northern banks of the Rapti River (Figure 12). It is 160 km by road from Kathmandu and this trip can take anywhere from four to eight hours depending on the traffic (Whelpton, 2005). Sauraha is the main tourist hub and main access point into the Chitwan National Park (Bhusal, 2007). Tourists also have the opportunity to stay inside the park at one of the seven hotels and resorts located there (Tiger Mountain, 2010). According to CNP data from fiscal year 2067/68, altogether 146,622 tourists visited the park among which 111,118 entered through Sauraha. This accounts for 76% of the total. Today there are many hotels and resorts being built around the town of Sauraha, on top of the 70 which already exist. Tourist numbers are growing and there is little to no coordination of tourism projects around the area (Lehmkuhl, 2000). Without a development and tourism management plan around the town of Saurah, mass tourism will undoubtedly change the area. Problems already being seen are those of pollution, vandalism and difficulty with solid waste disposal. With the continuing growth around Sauraha, the

area may lose its wilderness charm. Although there is not much literature on the subject, a feeling of mass tourism is creeping into the atmosphere in Sauraha. For example, the number of tourists on elephant back safaris surrounding the one Asian one-horned rhinoceros in this picture is not a private or isolated experience

Tourist satisfaction

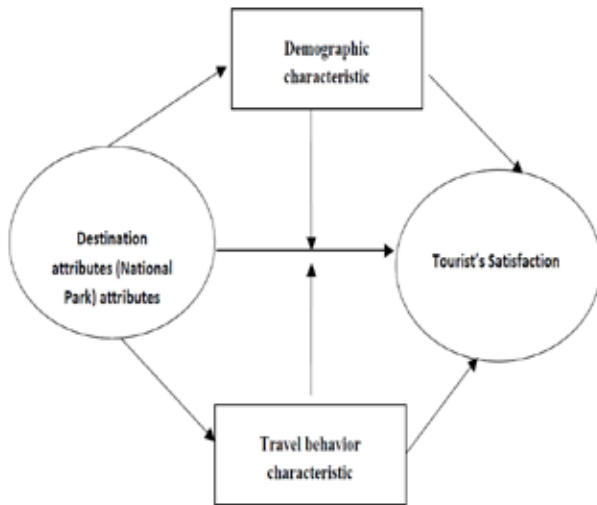
The tourism industry consists of a number of different sectors including the travel, hospitality and visitor services sector. Within each of these sectors there are a number of individual enterprises that provide a range of services to people who are travelling away from their home environment. This travel could be for a variety of reasons including for pleasure, to visit friends and relatives, to work on a short term basis, to attend conferences, to participate in business activities, or any of a number of specific reasons. While the industry distinguishes between the various groups according to their purpose for travel, convention has it that all these short-term travellers are defined as 'tourists'¹ (Australian Bureau of Statistics, 1997). Likewise, the industry distinguishes between various 'markets' according to their place of origin (international, domestic, intra-state, interstate, etc). These distinctions are not relevant to this paper which is concerned with all these forms of tourism. Tourist satisfaction is important to successful destination marketing because it influences the choice of destination, the consumption of products and services, and the decision to return (Kozak & Rimmington, 2000). Several researchers have studied customer satisfaction and provided theories about tourism (Bramwell, 1998; Bowen, 2001). For example, Parasiraman, Zeithaml, and Berry's (1985) expectation-perception gap model, Oliver's expectancy-disconfirmation theory (Pizam and Milman, 1993), Sirgy's congruity model (Sirgy, 1984; Chon and Olsen, 1991), and the performance – only model (Pizam, Neumann, and Reichel, 1978) have been used to measure tourist satisfaction with specific tourism destinations. In particular, expectancy-disconfirmation has received the widest acceptance among these theories because it is broadly applicable. Pizam and Milman (1993) utilized Oliver's (1980) expectancy-disconfirmation model to improve the predictive power of travelers' satisfaction. They introduced the basic dynamic nature of the disconfirmation model into hospitality research, while testing part of the original model in a modified

form. In order to assess the causal relationship between two different disconfirmation methods, they employed a regression model with a single "expectation – met" measure as the dependent variable, and 21 differences–score measures as the independent variables. Some studies on customer satisfaction are also notable in tourism behavior research. For example, Pizam, Neumann and Reichel (1978) investigated the factor structure of tourists' satisfaction with their destination areas. The authors showed eight distinguishable dimensions of tourist satisfaction. Barsky and Labagh (1992) introduced the expectancy – disconfirmation paradigm into lodging research. Basically, the proposed model in these studies was that customer satisfaction was the function of disconfirmation, measured by nine "expectations met" factors that were weighted by attribute – specific importance. The model was tested with data collected from 100 random subjects via guest comment cards. As a result, customer satisfaction was found to be correlated with a customer's willingness to return. Chon and Olsen (1991) discovered a goodness of fit correlation between tourists' expectations about their destination, and tourists' satisfaction. Then, after tourists have bought the travel service and products, if the evaluation of their experience of the travel product is better than their expectations, they will be satisfied with their travel experience. Furthermore, Chon and Olsen (1991) provided an intensive literature review of tourist satisfaction. One thing to be noted, however, is that although the posited social cognition theory offers an alternative way of explaining satisfaction processes, its methodological mechanism is analogous to that of expectancy-disconfirmation theory. In other words, the concepts of congruity and incongruity can be interpreted similarly to the concepts of confirmation and disconfirmation, both of which can result in either positive or negative directions.

Research framework

The study sought to identify the relationships between the destination attributes and tourists' satisfaction, in order to analyze the differences in the attributes, and to investigate destination attributes and tourists' overall satisfaction, controlling for tourists' demographic and travel behavior characteristics. In order to accomplish the objectives of the study, a model was designed based on expectancy-disconfirmation theory of Leon Festinger (1957).

Fig1: Framework based Expectancy-disconfirmation Theory



Source: Leon Festinger 1957

The attributes of the study were selected through the related tourism literature review. In the review of the tourism literature, the selected attributes were crucial ones affecting tourists' satisfaction. Furthermore, through an analysis of previous studies, this research chose tourists' demographic and travel behavior characteristics and destination attributes, in order to determine the differences in the contribution of attributes to tourists' satisfaction.

The study also measures the overall satisfaction of tourists' travel experiences in visiting cultural/heritage destinations, because overall satisfaction is the entire result of the evaluation of various experiences. It is important to identify and measure consumer satisfaction with each attribute of the destination because the satisfaction or dissatisfaction with one of the attributes leads to satisfaction or dissatisfaction with the overall destination (Pizam, Neumann, and Reichel, 1978).

Research methodology

The study attempted to investigate which attributes satisfy tourists who visited cultural and natural destinations, and to identify the relationship between destination attributes and tourists' overall satisfaction. This research is based on the primary and secondary data from the various sources. Questionnaire survey was carried out. In the same way questionnaire were distributed to the visitors to obtain desired data. English language with foreigners was used to conduct the research.

Study area

Sauraha is located on the northern banks of the Rapti River (Figure 2.3). It is 160 km by road from Kathmandu and this trip can take anywhere from four to eight hours depending on the traffic (Whelpton, 2005). Sauraha is the main tourist hub and main access point into the Chitwan National Park (Bhusal, 2007). Tourists also have the opportunity to stay inside the park at one of the seven hotels and resorts located there (Tiger Mountain, 2010). According to CNP data from fiscal year 2067/68, altogether 146,622 tourists visited the park among which 111,118 entered through Sauraha. This accounts for 76% of the total. Covering a small area on the banks of the Rapti River in Chitwan District, Sauraha has become one of the over-saturated tourist destination which lies in Chitawan district. As a place having its own distince identity, Sauraha has been a central focus among visitors visiting Chitwan and Chitwan National Park. Many factors have contributed to the present over-saturated condition of this tourist destination.

Today, there are many hotels and resorts being built around the town of Sauraha, on top of the 70, which already exist. Tourist numbers are growing and there is little to no coordination of tourism projects around the area (Lehmkuhl, 2000). Without a development and tourism management plan around the town of Saurah, mass tourism will undoubtedly change the area. Problems already being seen are those of pollution, vandalism and difficulty with solid waste disposal. With the continuing growth around Sauraha, the area may lose its wilderness charm. Although there is not much literature on the subject, a feeling of mass tourism is creeping into the atmosphere in Sauraha.

Results

Basically the 6 variables namely, Behaviors, Hotel and Restaurant, Hospitality and Service, Weather and Scenery, Recreational Activities and finally overall Satisfaction were tested in order to define Tourist satisfaction level which is dependent variable. Table 2 explains the tourist satisfaction level based on the behavior of local people and tour guide. Here, the highly satisfactory rating for both entity is high accounts 52.2 % and 47.4% respectively. Also, since the satisfactory rating for both entity is high, the tourist satisfaction level based on behavior of local people and tour guide in Chitwan National Park relates considerably good.

Table 2: Tourist satisfaction level on behaviour

Local People			Tour Guide		
Rating	Frequency	Percentage	Rating	Frequency	Percent
Less Satisfactory	5	1.4	Less Satisfactory	5	1.4
Neutral	60	17.1	Neutral	35	10
Satisfactory	102	29.1	Satisfactory	144	41.1
Highly Satisfactory	183	52.2	Highly Satisfactory	166	47.4
Total	350	99.8	Total	350	99.9

Source: Survey, 2018

The next, variable is the condition of Hotels and Restaurant and their services like food and drinks, service quality and hygiene and sanitation. Based on these entities under Hotels and Restaurant, a tourist satisfaction level was determined. For food and drinks, the results was satisfactory, 52.2%, the service quality was also satisfactory accounting 60.2% but on hygiene and sanitation the result was less satisfactory, 37.1%

Table 3: Tourist satisfaction level on hotels and restaurant

Food and Drinks			Service quality			Hygiene and Sanitation		
Rating	Frequency	Percent	Rating	Frequency	Percent	Rating	Frequency	Percent
Less Satisfactory	20	5.7	Less Satisfactory	5	1.4	Less Satisfactory	130	37.1
Neutral	92	26.2	Neutral	57	16.2	Neutral	120	34.2
Satisfactory	183	52.2	Satisfactory	211	60.2	Satisfactory	67	19.1
Highly Satisfactory	55	15.7	Highly Satisfactory	77	22	Highly Satisfactory	33	9.4
Total	350	99.8	Total	350	99.8	Total	350	99.8

Source: Survey, 2018

The tourist satisfaction level for local culture and festival was influential, with satisfaction percentage on local culture is 58.2 while for festival it was 51.4

Table 4: Tourist satisfaction level on culture and festival

Local Culture			Festival		
Rating	Frequency	Percentage	Rating	Frequency	Percent
Less Satisfactory	4	1.1	Less Satisfactory	15	4.2
Neutral	110	31.4	Neutral	120	34.2
Satisfactory	204	58.2	Satisfactory	180	51.4
Highly Satisfactory	32	9.1	Highly Satisfactory	35	10
Total	350	99.8	Total	350	99.8

Source: Survey, 2018

The satisfaction level under heading hospitality and service include transportation service, service quality, language and communication and agency service. Fig 1 suggests satisfactory transport service and fig.2 indicates satisfactory service quality with 60% respondent. Language and communication facility was also satisfactory and the respondent look satisfied also with agency service. The results look impressive under hospitality and service provided to visitors by different stake holders.

Fig 2: Tourist Satisfaction on Transport service

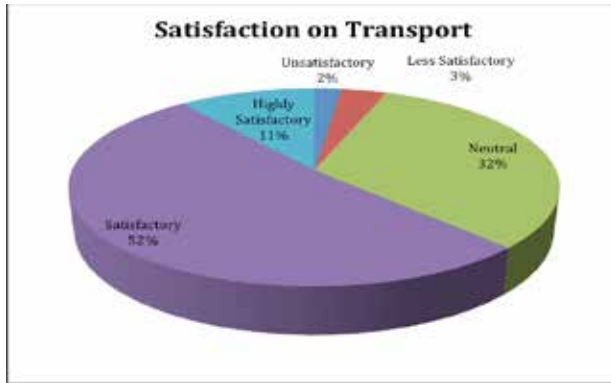


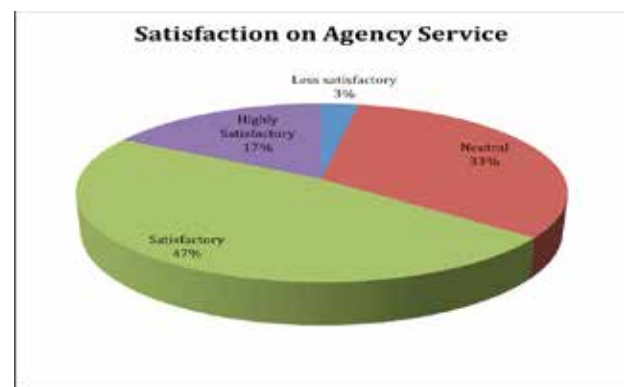
Fig 3: Tourist Satisfaction Level on Service Quality



Fig 4: Tourist Satisfaction Level on Language and Communication



Fig 5: Tourist Satisfaction Level on Agency Service



The level of satisfaction under the heading of weather indicates that most of the tourists liked the weather in National park.

Finally, the tourist satisfaction level under recreational activities was determined on five entities, Jungle safari, Elephant ring, Bird watching, Breeding centre and shopping facilities. Table 5 indicates, Jungle safari and Elephant riding was satisfactory, whereas Bird watching was less satisfactory. Breeding centre and shopping facilities also have satisfactory ranking as in Fig. 2 and Fig. 3

Table 5: Tourist satisfaction level on recreational activities

Jungle Safari			Elephant Riding			Bird Watching		
Rating	Frequency	Percent	Rating	Frequency	Percent	Rating	Frequency	Percent
Less Satisfactory	20	5.7	Less Satisfactory	5	1.4	Less Satisfactory	130	37.1
Neutral	92	26.2	Neutral	57	16.2	Neutral	120	34.2
Satisfactory	183	52.2	Satisfactory	211	60.2	Satisfactory	67	19.1
Highly Satisfactory	55	15.7	Highly Satisfactory	77	22	Highly Satisfactory	33	9.4
Total	350	99.8	Total	350	99.8	Total	350	99.8

Source: Survey, 2018

Fig 6 Tourist Satisfaction Level on Breeding Centre



Fig 7. Tourist Satisfaction Level on Shopping Facilities



Conclusion

This study has given concrete understanding about satisfaction in the destination, specially the tourist's satisfaction in Chitwan National park. This study has given emphasized on tourist's demographic characteristics, travel behavior characteristics and major attributes of the destination. From these studies, it has been emphasized that the identification of tourists' characteristics and an investigation of the relationship between the attributes and tourists' satisfaction are needed for the betterment of tourism destination. The research concludes that there must be positive or significant relationship between variables and overall satisfaction; here variables are the activities and destination's attributes which influence tourist's motivation for traveling. Tourists are influenced by the attributes in the destination, so it has to be managed properly and should get suggestions and take feedback from the tourists. Here in the research, while correlating the destination's attributes found all are correlated with overall satisfaction of the tourists. Similarly, the majorities of the tourists (more than 50%) were satisfied with Chitwan National Park facilities however less number of tourists was dissatisfied.

It is argued that such research efforts would help tourism practitioners and planners to have a better understanding of customer or tourist's satisfaction and to formulate better strategy and planning about tourist's satisfaction in tourism. With these observations in mind, the current study was conducted. Finally, this research has provided a general picture of the relationship between tourism activities and tourists' overall satisfaction with the Chitwan National Park. The majority of the respondents expressed their positive experience during their trip to Chitwan National Park. Regarding some attributes such as hotel restaurants and food seems quite unsatisfactory. Similarly, jungle activities are not so effective and dissatisfying tourists due to the disturbance of human being to the wildlife and there is now any proper visitors' management policy in the Chitwan national

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Adventure Tourism and Implication of ICT use in Nepal

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Abstract

One of the most rapidly growing sectors in the world is Tourism; likewise adventure tourism is one of its fastest growing categories. Increasingly, adventure tourism is prioritized in countries in all stages of economic development for market growth, because they recognize its ecological, cultural, and economic value. The Himalayan kingdom of Nepal is one of world's amazing adventure tourism destinations. Its mountains and rivers offer unlimited opportunities for adventure activities.

The government has been developing information communication technology (ICT) aggressively in Nepal. It is bringing now major changes on adventure activities. Therefore, this research tried to disclose how the tourism industry is implementing and managing this impact, what changes have brought of Technology development, what opportunities can be benefited. The research methodology used is focus group discussion with key personnel involved in public and private tourism sectors, review of literature. The data collected were primary and secondary both in nature. The tools to collect private data are focus group discussion to evaluate the existing adventure tourism and implication for ICT use in Nepal. The research design used is qualitative.

Keywords

Adventure activities, e-Tourism, mobility and new technology, ICT and adventure tourism.

Brief introduction

Adventure tourism

One of the most rapidly growing sectors in the world is Tourism; likewise adventure tourism is one of its fastest growing categories. Increasingly, adventure tourism is prioritized in countries in all stages of economic development for market growth, because they recognize its ecological, cultural, and economic value.

Adventure Travel Trade Association (ATTA) defines adventure tourism as a trip that includes at least two of the following three elements: physical activity, natural environment, and cultural immersion. Adventure tourism can be domestic or international, and like all travel, it must include an overnight stay, but not last longer than one year. While the definition of adventure tourism only requires two of these components, trips incorporating all three tend to afford tourists the fullest adventure travel experience – for example, a trip to Annapurna Circuit that involved trekking (physical activity) through the Annapurna

Conservation Area project trail (natural environment) and genuine interaction with local residents and/or indigenous Gurung/Thakali/Magar people (cultural immersion).

The Himalayan kingdom of Nepal is one of world's amazing adventure tourism destinations. Its mountains and rivers offer almost unlimited opportunities for adventure activities. The world's highest mountain range is represented the Himalayan mountains and expanse along a corridor from Bhutan in the east to the Pakistan-India border region in the west. Similarly, the northern peaks sit in Tibetan China, while the southern slopes lie mostly in India and Nepal. Nepal has potential adventure activities as trekking, white water rafting, Mountaineering/peak climbing, mountain biking and the Himalayas offer adventurers many options.

Literature review

Evolution of adventure tourism

Very little research and relevant prior studies available related to adventure tourism in Nepal.

Nepal has more than five-decade long history of commercial adventure tourism. It was a British army officer, Lieutenant Colonel James Owen Merion Roberts (Jimmy Roberts), who laid the foundations of commercial adventure tourism in Nepal. Roberts founded Nepal's first trekking and mountaineering outfit, Mountain Travel Nepal, in 1964 to offer the opportunity for wealthy travelers to enjoy the experience of trekking or climbing in Nepal without problems.

Since then, Nepal has definitely come a long way in developing adventure tourism products. However, it's true that the country is not in a position to lure a large number of adventure tourists despite having a variety of adventure products - trekking, mountaineering, rock climbing, mountain biking, mountain flights, paragliding, ultra light flights, rafting, kayaking, canyoning, boating, bungee jumping, hunting, honey hunting, jungle safari and bird watching.

Once considered one of the most popular adventure travel destinations in the world, Nepal needs planned international promotion of these adventure products to get benefit from the flourishing adventure tourism in other parts of the planet. As most of the travelers around the world are no longer satisfied with traditional tourism products and are eager for adventure experiences, Nepal needs to promote adventure products keeping in mind the needs and expectations of the modern travelers. Nepal should especially focus on the following adventure tourism products:

Humans have been engaging in adventurous travel for hundreds of years via exploration by the likes of Marco Polo, Captain James Cook, and Sir Ernest Shackleton, who had primarily scientific, geographic, or colonial motives. However, commercial adventure travel is a relatively new phenomenon, in which travelers hire a professional guide to provide a range of technical support and equipment, as well as culture and nature interpretation.

In the mid-1950s, many first ascents and descents attracted global attention and inspired many people to attempt their own expeditions. Maurice Herzog's ascent of Annapurna in 1950, Sir Edmund Hillary and Tenzing Norgay's ascent of Mount Everest, and others' successes were hailed in the media around the world.

Today, Adventure Tourism is a vibrant, dynamic, and fast changing sector with new variants routinely added into the possible experiences. Individual companies are often small, owner operated businesses led by entrepreneurs with a drive to share their favorite places and passions with

others. Adventure offers opportunities to entrepreneurs in rural areas around the world to do the same. 69% of overall international travel departures leave from Europe, North America, and South America, and together these three regions account for over USD 263 billion in adventure travel expenditures.

Adventure activities in Nepal

Mountaineering /peak climbing

The high rising mountains eight of the 14 eight thousands and small but challenging peaks create a wide opportunity for mountain climbing throughout the year in Nepal. Well guided by professional Sherpas and expert climbing organizers, mountaineering may be the most accessible form of extreme sports in the greater northern regions of Nepal.

The mountain activities such as peak climbing and expedition started in 1953 at a first glance by the successful summit of Mt. Everest. However the mountaineering activities were properly developed from 1970 onward, which has made Nepal true adventure capital of the world. Consequently Nepal has become a dreamland for adventurous people from all over the world. Now climbing Mt Everest is the ultimate life adventure and reaching the summit would be the journey's goal.

Trekking

Trekking is undeniably the most enjoyed extreme sports in Nepal. Nepal is known for its high-altitude trek zones, and trekkers, as many as 100,000, visit Nepal almost every year. Trekking is popular activities within and in demand of adventure tourism in Nepal. As a Himalayan country, biological diversity and multi-cultural society, the trekking businesses are increasing day by day.

Everest, Annapurna, Langtang, Manaslu and Mustang are some of the most desired trek destinations in Nepal. Because of its commercialization in recent decades and huge availability of trained experts in the field, the costs for trekking come easily under most tourists' regular budget, and the time involved in completing the trek may last from seven days to 21 days in total.

Rock climbing

Rock climbing is a common form of sports in Nepal. With commercialization of mountain climbing, the sport has flourished like anything. Climbing enthusiasts, including local inhabitants, enjoy the sport throughout the year.

One can enjoy climbing rocks in some of the most exotic and least explored northern regions of Nepal. Also, an

amateur course is provided to anyone doing mountain climbing in Nepal.

Rafting

Nepal is a nation rich in water sources. The water flowing down straight from the Himalayas produces high-current rivers and rivulets, making them ideal for rafting. Pirouetting, high sliding and toying are few of the usual techniques used during rafting in here. Rafting is another most thrilling and adventurous activity in the tourism sector. It was started commercially since 1990 in Nepal. According to the data of different organization, Trishuli River, Bhotekoshi and Dudhakosi are the world's best rivers for thrilling rafting activities.

Mountain biking

This small South Asian nation is home of the Himalaya. The basic landscapes include from high Himalaya, hills to flat Terai. Biking on the hills of Nepal can be a very adventurous experience. The uneven hilly terrains facilitate best mountain biking experience along with cultural excursions of varying ethnic tribes residing in the hills.

Bungee jumping

Located near the Nepal-China border, Bhote Koshi is the ultimate place for bungee jump enthusiasts. The first and may be the only bungee jump site, it is located just above the Bhote Koshi river at an elevation of 160 m (525 ft), making it the 2nd highest bungee jump site in the world. The cost is inexpensive and tourists can also try other forms of extreme sports during their visit - Swing, canyoning, white water rafting etc.

Canyoning

Canyoning is an amazing full body and mind experience that enables you to explore some of the last forbidden places in the Himalayas. It is one of the best adventure

sports which excites and amuse you by abseiling, jumping and sliding down steep canyon walls and waterfalls to deep pools below.

Methodology

The methodology is based primarily on secondary sources and primary sources gathered from the focus group discussion consisting of key personal of Nepal tourism board (NTB), Trekking agency's association of Nepal (TAAN), Nepal association of travel and tour agents (NATTA), Nepal Mountaineering association (NMA) and Department of information technology

(1) e-Tourism, mobility and new technology (2) ICT and adventure tourism (3) Stages of development of ICT in Nepal (4) Key factors of ICT applying in adventure tourism (5) The adventure tourism businesses in emerging markets in web-era (6) Effective, Efficiency and Enable information for Adventure Tourism Marketing (7) Adventure Tourism growth and greater opportunities (8) Social responsibility in the tourism businesses of the emerging market (9) ICT's implication in adventure tourism businesses

Component and implication for ICT use in adventure tourism

A group of key people working for the Nepal Tourism Board (NTB), department of information technology, Trekking agencies association of Nepal (TAAN) and Nepal Mountaineering Association (NMA) focus group discussion gave their responses to the different issues related to implication of ICT use in adventure tourism. Below table represent the summary of their responses:

Table 1: ICT Components and Implications

Component	Implication
e-Tourism, mobility and new technology	e-marketing, its mobility and new information communication technology is aggressively developing, but we still require much training by experts in digital marketing, social medias and online business.
ICT and adventure tourism	Highly information-intensive industry, creating a new business environment by providing new tools and enabled new distribution channels, facilitates business transaction, planning trip by using online, networking with business partners and safety /security in remote mountains.
Development of ICT in Nepal	ICT is developing speedily since first telephone lines established in 1913 but we are still far behind comparing to developed countries.
Key factors for applying ICT in adventure tourism	IT education and training, Integration of various sectors, Technical Infrastructure, Human Infrastructure, Legal infrastructure, ICT culture
The adventure tourism businesses in emerging markets in web-era	Web presence became a clear competitive advantage, Electronic ticketing, costumer reacts even more sensitively to prices, save time

Effective, Efficiency and Enable information for Adventure Tourism Marketing	Increased in the supply of information, shared and disseminated to larger audience, Knowledge is produced, transmitted, accessed and shared at the minimum cost, reduction in the transactional costs, cut across the geographic boundaries, larger markets and increased access to global supply chains, more transparency
Adventure Tourism growth and greater opportunities	Cell Phone applications (SMS), Digital Cameras, Internet, Wireless (WiFi and WiMAN), VOIP, GPS, GIS, Convergence (data, voice, media), Digital radio etc technologies a new global market place. With e-commerce and e-business market has more opportunities and possibilities
Social responsibility in the tourism businesses of the emerging market	Major social issues appeared in the last period: the loss of values and the effects of acculturation through tourism, financial and sexual exploitation of the host population. The global codes of ethics for tourism, which sets a frame of the reference for the responsible and sustainable development of tourism
ICT's implication in adventure tourism businesses	Changed the way of research travel options, compare prices and book their travel, information and contact with their home through the Internet, mobile phones and geographic location services based on GPS has increased the convenience, weather forecast, pleasure and security of travel, changed the behavior and the ability for consumers to compare prices and book, as well as creating new opportunities for relationship marketing, offering opportunities to change the way they operate and marketing, change in the skills required of staff, their promotion and marketing techniques, their customer research methods, policy issues related to taxation and legal jurisdiction, amongst other areas.

Discussion

1. e-Tourism, mobility and new technology

e-Tourism can be defined as the analysis, design, implementation and application of IT and e-commerce solutions in the travel and tourism industry, as well as the analysis of the respective economic processes and market structures and customer relationship management.

Effective and high-speed ICT infrastructure and software applications in the tourism industry are crucial for its development. ICTs allow customer–management relations and supply chain management to be combined into a single source that facilitates a variety of operations - product selection, ordering, fulfillment, tracking, payment and reporting – to be performed with one easy to use tool. ICTs ultimately cut costs by enabling the provider to be in direct contact with the consumer and also impact employment through the need for required maintenance of ICT equipment.

Management within tourism companies use ICTs to undertake a range of tasks that enhance the efficiency of employees in the workplace, notably online reservations. Staff reductions in areas (e.g. hotel front offices) where work traditionally took place were projected to have implications for cost savings. The remaining workforce

needs to work with new technologies (for instance, inputting consumer orders into portable devices) in addition to traditional tasks. Such changes create a need for multitasking skills which, in turn, lead to necessary adjustments to training programs.

The development of ICTs has also led to changes in demand and supply. A higher demand for flexible, individualized options and quality of information has personalized leisure and tourism behavior; a consequence of increased ICT use. Through new technology and social and economic ratings (social media platforms like Facebook, Twitter, and blogs) customers have the ability to share information and research ratings on destinations, the quality of service in hotels and restaurants, and environmental and social conditions.

In the context of Nepal, e-marketing, its mobility and new information communication technology is aggressively developing, but we still require much training by experts in digital marketing, social medias and online business.

2. ICT and adventure tourism

As ICT has a potential impact on adventure tourism business, Contemporary information society has made Tourism a highly information-intensive industry. In the current information driven society, the role of ICT in

tourism industry is essential driving which cannot be underestimated. It is creating a new business environment by providing new tools and enabled new distribution channels. ICT tools have facilitated business transaction in the industry by networking with business partners, distribution of product services and providing information to consumers across the globe. On the other hand consumers are also planning their trip and travel by using online to obtain information.

3. Development of ICT in Nepal

Table 2: Development of ICT in Nepal

Year	Development
1913	First Telephone lines in Kathmandu
1955	Distribution telephone lines to public
1964	International telecommunication service
1971	First compute in the country for census (IBM1401)
1974	Establishment of the electronic data processing center
1974	Establishment of National computer center
1982	First private overseas investment in software development by establishing company for export, data systems international (p) Ltd
1985	Distribution of personal computers in Nepal
1990	Liberalization on imports of equipment
1992	Establishment of computer association of Nepal
1994	First internet service
1995	Installation of optical fiber network
1996	Establishment of the ministry of science & technology
1998	Telecommunications act 1997 and regulation
1998	Establishment of the first IT policy, “ IT policy 2000”
1999	Launching of GSM mobile service
2001	Establishment of the national information technology center (NITC as ICE implementation body)
2003	Establishment of the high level commission for information technology
2004	Telecommunication policy 2004
2004	Establishment of Nepal Telecom (NTC)
2004	Electronic transaction ordinance 2004
2006	Electronic transaction act Oct, 2006
2006	Design of the Nepal e-Government master plan (e-GMP)
2007	Introduction of 3G, GPRS, CRBT
2007	Electronic transactions rules 2007

2009	Establishment of government integrated data center
2010	Announcement of IT policy 2067
2015	Formulation of ICT policy 2015

4. Key factors for applying ICT in adventure tourism

- IT education and training for policy makers, managers and other players in the industry
- Integration of various sectors like transport, lodge etc.
- Technical Infrastructure
- Human Infrastructure, which includes skilled people, vision and management.
- Legal Infrastructure
 - Regulation of telecommunication providers
 - Subsides of telecommunication providers
 - Legal framework for online advertisement or official endorsement for online marketing
- ICT culture
 - Create and sustain ICT environment
 - Maintenance and updating of websites
 - ICT training for all level of workers
- Establish electronic linkages between all related sectors

5. The adventure tourism businesses in emerging markets in web-era

Adventure Tourism is a complex industry that comprises residential activities (hotel, apartments, camp sites, etc.), transportation (by air, sea and overland), services in the place of origin (tour operators, travel agencies, information services) and services at the place of destination (accommodation, food services, sport, leisure, culture, banking, insurance, health care, security) etc. Adventure tourism can be seen also as an economical phenomenon (investment, production, distribution and consumption activities in the process of attracting, receiving and satisfying visitor demand).

The globalization process was streamlining the competition and web presence became a clear competitive advantage. Electronic ticketing is becoming one of the most successful e-commerce travel services. Accommodation started to integrate their inventories for direct booking, relations with the customer and integration with distribution channels. Experts predict that especially in today's difficult climate the concentration on online business will further grow,

because customer reacts even more sensitively to prices and travel companies are more sensitive to cost. Customers search on the Internet for the best offer for their money and travel companies minimize their sales cost.

6. Effective, efficiency and enable information for adventure tourism marketing

- The most important benefit associated with the access to the new technologies is the increase in the supply of information.
- Information is shared and disseminated to larger audience.
- Knowledge is produced, transmitted, accessed and shared at the minimum cost.
- With the reduction in the transactional costs, there is also a reduction in the degree of inefficiencies and uncertainty.
- ICTs have cut across the geographic boundaries of the nation states. Buyers and sellers are able to share information, specifications, production process etc. across the national borders.
- It enables all to know the comparative advantage in the tourism market.
- It leads to the larger markets and increased access to global supply chains.
- It has led to more transparency.
- Networking and information sharing definitely leads to demands for greater openness and transparency.

7. Adventure tourism growth and greater opportunities

Information and Communication Technologies (ICT) has transformed the contemporary business environment. It has led to new information economy which is digital in nature. ICT is a broad terminology referring to multiple communication technologies which range from simple and complex namely Cell Phone applications (SMS), Digital Cameras, Internet, Wireless (WiFi and WiMAN), VOIP, GPS, GIS, Convergence (data, voice, media), Digital radio.

These technologies are creating a new global market place, which is more competitive. With e-commerce and e business the market has more opportunities and possibilities than ever before. The ability to reach a global audience, obtain instant market information and conduct electronic business transactions has increased economic efficiency and has opened markets for goods and services from the developing world.

8. Social responsibility in the tourism businesses of the emerging market

The core elements of the supply side of tourism are beautiful landscapes, cultural heritage, foreign cultures and a sound infrastructure. Environmental pollution, increased cost of garbage and sewage disposal, surface consumption, rising energy consumption and loss of biodiversity put a lot of pressure on the environment. Major social issues appeared in the last period: the loss of values and the effects of acculturation through tourism, financial and sexual exploitation of the host population.

The global codes of ethics for tourism, which sets a frame of the reference for the responsible and sustainable development of tourism.

The code of conduct for the protection of children from sexual exploitation in travel and tourism, that focuses on preventing sexual exploitation of minors, child labor and the trafficking of children and young people.

9. ICT's implication in adventure tourism businesses

For potential travelers: ICT has changed the way they research travel options, compare prices and book their travel.

For travelers on their trip: The availability of information and contact with their home through the Internet, the use of mobile phones and geographic location services based on Global Positioning Satellites (GPS) has increased the convenience, weather forecast, pleasure and security of travel.

For tourism operators: ICTs have affected the way they market their products as well as offering opportunities to change the way they operate.

For tourism intermediaries (travel agents and wholesalers) : The introduction of ICTs have changed the behavior and the ability for consumers to compare prices and book, as well as creating new opportunities for relationship marketing.

For tourism organizations at the local, state and national level: It has meant a change in the skills required of staff, their promotion and marketing techniques, their customer research methods, a change in the services offered to include ICT training and education for operators and the development of cooperative data services.

For governments: ICT has raised important policy issues related to taxation and legal jurisdiction, amongst other areas.

Conclusion

It is important to examine the characteristics and dynamics of the adventure tourism industry in the developing countries. While the opportunities are many, challenges are nevertheless increasing especially for the developing countries. It is crucial for the developing countries to design efficient destination managements systems to compete with international tourism market with equal footing. Often, it is found that developing countries are unable to adopt ICT despite the competitive advantage of such application. It is however firmly believed that adoption of e-business will facilitate traditional tourism system to be gradually integrated with the digital economy.

Developing countries especially should develop an ICT environment, which involves multiple factors like access, infrastructure, education, capacity building, legal framework etc. for a promotion of ICT enabled tourism industry. There is a need for better public and private partnership to be established in the country like Nepal for e- tourism to actually flourish.

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The Impact of Socio-economic Development and Terai Movement

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Abstract

Within the circumstance of transition of Nepal to a federal state, Madhesi identity has been a major issue to be left to address. To ignore the demands for autonomy now would likely only create a hollow short-term fix that may encourage state dissolution and violence. This paper intensely discusses the Terai movement and its impact on socio economic development in the region. The methodology applied was to discuss about the generated themes from the content analysis of the literatures and secondary data available. Empirical evidence suggests that federal state division along ethnic lines generally causes more conflict than it prevents, and serves to concretize differences, especially if the structuring was done in a post-conflict setting. A solution more conducive to durable peace involves dividing large-block ethnic groups into distinct districts in order to temper the lure that political leaders face to play upon ethnic, caste, or religious identity to gain votes. To that end, hybrid, multi-subunit provincial solutions may serve to allow for Terai co-operative political mobilization. The study has been concluded with the need of inclusive and participatory socio economic development activities of Madheshis along with the state restructuring for nation building.

Keywords

Conflict, inclusion, federalism, movement, globalization

Introduction

From the very beginning, Nepal was practicing unitary form of government after unification by the then Shah rulers. This system was not able to achieve development of the country and was seen as an 'exclusive form of rule'. In the aftermath of the People's Movement II in the year 2007, the 240 years of Shah Dynasty, the system of monarchy, was abolished in the fifth amendment of the Interim Constitution of Nepal, 2063. The amendment was first to mention the country officially as the Federal Democratic Republic of Nepal which envisioned federalism as a prominent feature for the new Nepal. Maoist party played the role of the catalyst for bringing forth federalism, secularism and inclusion in Nepal, along with the support of other major parties, including Communist Party of Nepal (Unified Marxist–Leninist) and the Nepali Congress and others. Federalism is seen as an inclusive practice for Nepal, in order to bring forth equality among all states, districts and provincial bodies. The distribution of resources has not been made equally available including Terai region for long time. The development and reform programmes have been in blanket approach rather having bracket approach to address equity to achieve equality in

future. The Interim Constitution had a provision regarding restructuring of the state according to the concept of democratic federal system by ending the centralized and unitary state structure but it has not been concluded yet. The Constituent Assembly (CA) in its very first meeting held on May 20, 2008 formally declared Nepal a Federal Democratic Republic. The new constitution of Nepal, 2015 has been promulgated. The federal system of government in Nepal has set up provisions for the three levels of administrations: Federal/ Central; Provincial/ State, and Local/ Municipal. The delineation of power between the three levels of governments shall be determined according to stipulations mentioned in the constitution. The country, at present, is on the verge of implementing the new constitution and federalism.

The government has tabled the constitution amendment bill in the parliament having detached some of the districts and areas of province number five. But majority of the major political parties seem to be reluctant in disintegrating this province. Madhesis and Madhesh based political parties are showing their dissatisfaction on the boundaries of these provinces. They are demanding two sole Madhesh provinces in the Terai region. Immediately after the promulgation of constitution, the ruling political parties

including Nepali Congress and CPN-UML celebrated 'diwali, while the Madheshi political parties and Tharuhat Struggle Committee observed it as a black day. Both within and outside the country, the new constitution was welcomed by one community, but it was criticized by the others. The country is now widely polarized in support and against the constitution. China, Pakistan and a few other countries have welcomed the new constitution, but India did not follow the suit. Since then, Madhes based political parties and Madhesis have been agitating. One of the least reported, but most significant changes in Nepali politics since the 2006 people's movement is the emergence of the 'Madhes' as a political force. With the opening of the democratic space, the Madhesis, who largely but not exclusively live in the southern plains and constitute 33 percent of the total population have been asserting themselves. This political movement of Madhesh/ Terai has created obstacles in the implementation of the new constitution and federalism in the country. Hence, politics of Terai movement in course of federalization of the state has been posed as the focus of the proposed study.

Objectives of the study

The overall objective of the study was to explore the current status of impact of Terai movement through restructuring and implementing federalism, however, the specific objectives of the study are as follows.

1. To identify the cause and effects of political movement of Terai in course of implementing federalism in Nepal,
2. To analyze the existing politics of Terai movement in context of implementing federalism in Nepal; and
3. To explore the possible solution measures in addressing the issues of Terai and implementing federalism in Nepal.

Research methodology

This study was conducted on secondary data published and unpublished in different research documents. The content analysis was the method of analyzing data based on checklist and different knowledge and issues were generated based on the literature reviews as well. The major areas of the study were focused on the review of sociological and economic impact of Terai movement in Nepal.

Results and findings

Notions of conflict

Conflict has been a state of clash of interests and has occurred with positional differences over values and belief system, self determination and access to and

distribution of resources and power. Conflict occurs when two or more people oppose one another because of the difference in their needs, wants goals or values. Conflict is almost always accompanied by feelings of anger, frustration, hurt, anxiety or fear (Lawati, 2005, p. 23). Conflict has been our most exciting teacher. It gushes up in the fire of diversity, most often the blunders of history and costs time and courage for management. Conflict, the moment of chaos, is valued within group process. Every person is a part of every conflict and self-awareness skills become part of solution. The source of conflict is the parties with contradictory goals (Khanal, 2004, p. 213). The discriminatory provisions of the government and processes of the governance controlled from the center seems the vital factor to create violent conflict in Southern region mainly in Eastern Terai of the country.

Civil war is now an important issue for development. War checks the development but conversely development checks war. This double causation give rise to virtuous and vicious circles. Where development succeeds countries become progressively safer from violent conflict, making subsequent development easier. Where development fails countries are at high risk of becoming caught in a conflict trap in which war destroys the economy and increases the risk of further war (Neupane, 2000, p. 43). In general sense conflict is the deliberate attempt to oppose, resist or coerce the will of another or others. In other words conflict is to suppress the will of other so as to fulfill one's own interest. In this context, conflict is a competition in its more occasional, personal and hostile forms. It is a process of seeking to obtain rewards by eliminating or weakening the competitors.

Conflict is not a new phenomenon as the commoners have always suffered from 'elite ruling system' and 'feudalistic mode of society' since antiquity. It is invariable the consequence of transverse, spiral and interwoven complex web of fundamental structural causes and their collateral factors. Armed conflicts have arisen due to inequality in access to resources and opportunities, inadequate service delivery, injustice to the identities and politico-ideological beliefs in effective governance, inept transparency and accountability, intolerant political parties and their leadership, inefficient bureaucracy and technocracy and insipid diplomacy (Shrestha, 2003, p. 134). It is obvious that conflict is a part of social life and it functions as a social process for development. Considering social function as a central concern, many social theorist have

put forward their theories. Conflict theory is developed as an alternative to structural functionalism which was the principal theory before the imitation of conflict sociology. Functionalism looks at unity in society for the good of the whole; conflict theorists see a system made up of groups and individuals who pursue their own interest. The primary causes of social problems, according to the theory of conflict, are exploitation and oppression. Madhesi people are excluded from the government structure and resources were not seen to be distributed in equitable manner (Gurung, 2004, p. 34). Present study has aimed to examine the present situation of politics of Terai movement of Nepal.

A violent political movement

There has never been a time of a society in which some individuals or groups did not come into conflict. According to the Malthus theory, reduced supply of the means of substance is the cause of conflict. According to Darwin, the principles of struggle for the existence and survival of the fittest, and that are the main causes of conflict. Freud and some other psychologists say that the innate instinct for aggression in man is the main cause of conflict (Habermas, 1988, p. 134). The system of governance also determines the causes of armed conflicts. If there is autocracy, instead of democracy it may be a cause of conflict. The uneven distribution of economy, political corruption and failure of good governance and so on other also creates conflict within society and country (Lawati, 2005, p. 234). The collapse of functional governments torn by internal fighting and the erosion of essential service structures has fomented inequalities, grievances and strife. The personalization of power and leadership and the manipulation of ethnicity and religion to serve personal or narrow group interests have had similarly debilitating effects on countries in conflict. The governance of Terai region has not involved sufficient representation from the locality including in armies and police recruitment.

The causes of violence may be internal or external both. The characteristic of some societies itself conflict type. The socio-economic, cultural composition determines the characteristics of the society; hence, the diversity in these socio-economic as well cultural or religious compositions creates different types of discriminations, exploitations and injustice in society and raise internal conflict (Yadav, 2003, p. 56). All of these elements have contributed to conflicts, between Governments and rebels, between

different opposition groups compete for supremacy and among populations at large, in struggles that take the form of widespread civil unrest. Many drag on for long periods with no clear beginning or end, subjecting successive generations to endless struggles for survival. The history of war shows that the previous wars and conflicts were due to the issue of holding over the natural resources and its consumption. Afterwards in the second phase the war and conflicts were centralized on the political system and governing system. Similarly, some were due to the self-identification or social rights and identification. Other causes of war is debate on political boarder between two countries, foreigner attack, diversity in religious beliefs and thoughts were leading many war and conflict in past (Yonjan, 2004, p. 76).

The above-mentioned theories determine the causes of armed conflict in different countries. In case of Nepal, the existing armed conflict is somehow related to the first and last that is structural theory and the social discourse theory. The present-armed conflict is a result of the failure of good governance, socio-economic injustice, political corruption, lack of leadership, personalization of power, deprivation from basic human needs and fundamental human rights, initiation of haves and have not classes. Whatever the cause of existing armed conflict is, it is the time to call a halt. Conflict, war and warlike events have never favored to the country, its people and development. It adversely affects the overall aspects of a nation like socio, economic, cultural and physical and so on other. There is no previous studies about the cause and consequences of Terai movement in Nepal. This study will examine the cause and effects of Terai movement in Nepal.

An alternative to state restructuring

A federal system is both a political and philosophical concept that describes how power is given to governments, and in many cases governments are described using this term as a way of distinguishing them from other leadership structures. Federal systems often vary widely in actual application, but all feature a central government with specific powers over the whole union. Federalism is a system of government in which power is divided between a central authority and various constituent units of the country. Usually, a federation has two levels of government: One is the government for the entire country that is usually responsible for a few subjects of common national interest. The others are the governments at the level of provinces or states that look after much of the

day-to-day administration of the states. Both levels of governments enjoy their power independent of the other (Rapu, 2006, p. 132). It is a decentralization of responsibilities for expenditure and revenue to different levels of government that ensures that each level makes decisions and allocates resources according to its own priorities. Therefore, two aspects are crucial for the institution and practice of federalism (Weil, 2008, p. 34). Governments at different levels should agree to some rules of power sharing. They should also trust that each would abide by its part of the agreement. Fiscal federalism concerns the division of public sector functions and finances among different tiers of government (Ozo-Eson, 2005, p. 211). In case of Nepal, there seems to be a new approach to be tested and implemented as the federal system of governance needs to incorporate the fiscal federalism. It has to be discussed to distribute the resources of revenues in various levels of governance.

To what can this contemporary increased interest in federalism be attributed? One major factor has been the recognition that an increasingly global economy has unleashed centrifugal economic and political forces weakening the traditional nation state and strengthening both supra-national and local pressures. As a result governments are faced increasingly with the desire of their populaces to be both global consumers and local self-governing citizens at the same time. The transition from an industrial to a knowledge-based and learning society has also contributed to this trend. Consequently the development of knowledge and its application have become fundamental to society. This trend has two important political implications. First, a primary task of political systems has become that of facilitating the processes of knowledge development within society. Second, given the elements of independence and interdependence involved in the creation and dissemination of various specialised forms of knowledge, there is an increasing need for forms of political organisation that facilitate both the purpose-specific development of knowledge and its overall integration within the broader network of society. Moreover, since knowledge is constantly changing, renewing itself, expanding, and becoming ever more complex, the political framework must be flexible and capable of evolving by learning from its own experience. This requirement for a flexible and evolving balance of independence and interdependence has been a major factor contributing to the need for constantly evolving federal forms of political organisation, and is a

trend that appears certain to increase rather than decrease (Courchene, 2001, p. 37).

Currently, out of the 193 UN member nations, 24 are classified as federal states. Nepal has just proclaimed itself a federal state. Iraq, Italy, Sudan and the Philippines are taking steps towards federal system. U.K., France, Japan and two dozen other countries have political systems with autonomous regions which have features of federal system of governance (Watts, 2008, p. 67). Federalism has emerged as the most widespread system of governance—a political reality of the 21st century. However, within federalism, each state maintains its own structures framework, develops its own constitutional practices and many things differ from each other. This is considered natural because each country has its own specific historical background, geographical conditions, social cultural make up, life style of people and political-economic structure. While creating new state structures, all of these issues will have to be addressed appropriately. We cannot expect a well formed federal system to present itself before us on a fine morning. For this a lot of homework, comprehensive consensus on all sides, understanding, agreement and coordination will be required. At present, we are at the very initial stage; we have to cover a lot of ground by way of giving continuity, refinement and development in this regard. This study will examine the restructuring and various aspects of federalism in course of implementing the new constitution and federalism in Nepal.

Indopolitical influence

Nepal's relationship with India is complex and intimately intertwined with the Terai. The roots of Indo-Nepal cooperation and angst lie in the 1950 Treaty of Peace and Friendship (Khanal, 2004, p. 89). The Maoists and other politicians in Nepal have attacked this treaty for the last several years, arguing that it should be scrapped because the security arrangement benefits India's neo-colonialist designs on Nepal. In particular, Article V is interpreted to limit Nepal's ability to import weapons, noting that the Government of Nepal shall be free to import, from or through the territory of India, arms, ammunition or warlike material and equipment necessary for to this arrangement shall be worked out by the two Governments acting in consultation (Lawati, 2005, p. 87). Further exacerbating the struggle is the porous border and lack of police on either side of the border, giving easy access to weapons and encouraging violent separatist groups to proliferate. Criminal organizations, political parties, and

separatist groups have all used the Indian state of Bihar as a safe haven, exploiting the porous border to withdraw from Nepal when threatened by Kathmandu (Neupane, 2000, p. 38).

Most of the Indian politicians, civil servants, bureaucrats, diplomats, security force personnel, etc. conceive Nepal not as a foreign country and many say that it would take time for Madhesi people to get Madhes recognized as an independent state. Most of Indian politicians say that Nepal's politics should follow Indian model: possibly republican, most likely secular. Some politicians and bureaucrats supporting the Madhesi movement say that they know what Madhesis are going through in Nepal, because they had experienced the same treatment when they visited Nepal (Watts, 2008, p. 24). An Indian former bureaucrat commented that China and the UN could not do anything without India and added that when we go ahead they cannot stop us. He further said that the UN was helping their cause right now and they need not worry. A Bihari (India) bureaucrat said that Madhesis are their own people (Indian origin) who settled in Nepal. In summary, Indo politics has greatly influenced the madhesi movement in Terai region from the very beginning.

Role of global actors

The new democracies of South Asia, including Nepal were overwhelmed by the idea of advanced democracies of the west. They failed to design an indigenous democratic model best suited to its people and culture (Yadav, 2003, p. 376). Besides, defining democracy in a relatively divided society is a challenging task for any emerging democracy, as it has an additional task of accommodating diversities of various types. The state tends to automatically becomes hegemonic in its power structure, as it attempts to address as well as hold these diversities together. However, within this model, there is space for these diversities to interact and retaliate with the state. Globalization that developed as a pre-requisite to foster liberal democracy has also contributed to the increasing ethnic conflict (Yonjan, 2004, p. 165). Looking closely, with integration of world trade and the strengthening of financial and diplomatic ties, internal wars and civil conflicts are becoming more important than international wars. The other noticeable aspect of this growing trend, is that none of the countries remain out of the ambit of ethnic wars; even those that are deeply embedded in global trade and diplomatic market have experienced bloody ethnic wars. Globalization produces greater inequality of income in industrialised

societies, which affects the less educated and lower skilled manual workers the most. If the latter are predominantly drawn from a specific ethnic group, the situation would progress from merely being one of economic inequality to one that also creates ethnic inequality resulting in social conflict based on ethnic identities (Gurung, 2004, p. 48). Therefore, these differential privileges that globalization promotes among groups, augments the process of ethnic conflict.

Rise of radicalism in Terai movement

There are too many groups dissatisfied with the way the agitation in the Madhes has been called off. People in the plains are weary of strikes and want to get on with their lives, but political activists are competing to be more radical (Bhattachan, 2003, p. 112). With more than half the population of the Tarai aged under twenty, it is difficult for political parties led by older leaders to keep control (Baral, 2004, p. 54). Younger Madhesis have been radicalized by the heavy-handed response of the security forces during the agitation in which demonstrators, many of them innocent bystanders, were killed. The youth are also angry at the Madhesi Front leaders who led them with slogans like now, or never and then struck a deal with Kathmandu to call off the blockade (Acharya & Khanal, 2002, p. 34).

The general feeling among people in Terai is that Kathmandu would be well-advised to agree to the moderate demands of the Madhesi Front, otherwise the leaders of the plains may have the rug pulled from under them by young radicals itching to take up arms (Gurung, 2004, p. 123).

There is a general sense that further confrontation in the form of a rekindled agitation or, more probably, sporadic violent incidents, will be hard to avoid. Most people are keen on constituent assembly elections but few believe they are likely to happen, mainly because they believe the major parties do not want them. If they occur, they will be considered meaningless if Madhesi issues have not been addressed. Madhesis across the political spectrum feel another round of agitation is necessary. Madhesis feel they are viewed with suspicion more than ever and that discrimination in the hills has increased. Although most Madhesis do not want to turn the movement into a communal conflict, even some moderates now say privately that pahadis should leave the Tarai, even those who have lived there for generations (Khanal, 2004, p. 56).

Although open support for armed action remains limited, many moderates quietly condone it, arguing it is an understandable last resort when all other means of being heard have failed. Most Madhesis see certain factions as retaining a political core but dismiss other armed groups as criminals. Many still view the armed groups positively for standing up to the Maoists and breaking their culture of fear. At the same time, they point to Maoist 'success' as paving the way for the groups' rise and acceptance (Lawoti, 2005, p. 45). Constant communication with the mainstream means the armed groups are not beyond the pale. Moderates worry that a resort to arms could degenerate into violence for its own sake and criminality, which would increase Madhesis' problems by encouraging the government to crack down, but still feel that these are our fighters. Radicalisation is not yet irreversible but the space for moderation is being squeezed.

Claim for socio-political inclusion

The cry against exclusion obviously has indicated a quest for inclusion. Historically, the Madheshi activism for inclusion has been advanced passing through different stages setting three key agendas: autonomous Tarai region, recognition of Hindi as national language, and inclusion of Madheshis in the civil service (Acharya & Khanal, 2002, p. 39). The leading parties failed to get people's endorsement in electoral politics as it lost all seats constituent assembly elections. The escalation of the Maoist insurgency in the Madhesh since 2000 imputed to raise a militant Madheshi nationalism. But its ethno-regional content was overshadowed by a larger picture of its image as a communist insurgent. The CPN (Maoist)'s unique contribution to the Madhesh activism is that it stressed more on the issues related to socio-economic change which have had a greater appeal to the oppressed strata of the Madhesh society, Dalits. The entry of the MJF in the Madhesh activism has helped to enlarge the canvas of the Madheshi nationalism and raising the militant Madheshi activism. Part of reason that explains limitation of the Madheshi activism in the past and its expansion at present is leadership. In the past, leadership was dominated by high caste Madheshis (Brahmin, Bhumihar, Kayastha and Rajput) who constitute less than 3 % of the total population of the Madheshis (Baral, 2004, p. 143). The rigid hierarchy and stratification of Hindu caste societies of the Madhesh limits the capacity of leadership from the forward group so far as mobilization of the people is concerned. Now the leadership of the Madhesh activism

has come from the Yadavs, Shahs, and similar castes group, which are numerically the most important. To say it in other words, politicization of Madhesh nationalism has advanced from an elite business with leadership of the forward group to a mass consciousness with leadership of the backward group. The MJF upholds all the major issues put forth by the early risers of the Madheshi activism, but its stands on federalism, on increment of the Madheshis' say in national politics, and on inclusion of the Madheshis in the state apparatus, and on affirmative actions are more sharp and powerful.

Conclusion

It has been realized that Madhesi people have been suffered from a sense of discrimination and consequent deprivation. They also feel exploited and discriminated by the upper caste Pahadi migrant communities. Madhesi people have also voiced concerns about the economic exploitation of the resource-rich Madhes region by the Nepali government. The Madheshis and Tharus are non-Nepali speaking people residing in Terai (plain) region of Nepal who are culturally distinct from the hill people. Consequently, the major Madhesh-based parties did not sign constitution which to them had serious flaws. The government and the main political parties in Nepal were found least sensitive towards their own people and also about the security challenges in India. Instead of taking any initiative to defuse the crisis, some of them had started blaming India for the trouble in Nepal. India imposed blockade that created hardship to the people as the trucks loaded with goods were not coming from India to Nepal. The private trucks lying in Indian side of the border had not been dared to cross over the border and come to Nepal because of the fragile law and order situation, which was due to the difficult situation faced by the Nepalese government. Federalism has been a new exercise for the country. It was an academic subject for students of political science and constitutional system, which has now emerged as a political reality of the state. Since the last few years, various ethnic groups and Madhesi communities have brought federalism at the forefront of the issue of state restructuring.

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Bi-Nations Pilgrimage Tour Mobility in Tourism Industry

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Abstract

This paper examines the pilgrimage mobility of two nations, from a tourism industry perspective, reflecting on scope by comparing data for insightful analysis. Religion tourism in these countries has a huge mobility and association basically for Hindu and Buddhist. The paper draws an understanding of different religious traditions, presenting data and motivations on two variety of pilgrimage tour. The method used is the trend analysis from different data sources which are compared and contrasted. The results demonstrate high potential mobility and transaction among the nation leading socio-economic and cultural linkage.

Keywords

Pilgrimage, religion, hindu and buddhist, data

Introduction

According to UNESCO, 60% of the world population practices the religion and these believers are the source of the demographic base for religious tourism. An estimation of about six hundred millions national and international (religious and spiritual) voyages take place in the world, of which 40% is in Europe and about half in Asia [1]. Reflecting on the meaning of pilgrimage, and its effective management, Di Giovine and Elsner suggest that: tourism professionals must appreciate the multiplicity of heightened meanings, deep-yet conflicting ideologies, and modes of interaction surrounding pilgrimage sites, which may conflict with the socioeconomic and political norms espoused by the tourism industry and other outside forces [2]. As a sector, religious tourism is not well researched and documented. Few reliable statistics are available regarding its size and value within the tourism sector as a whole, mainly because only a few countries measure tourist arrivals using a classification that refers to 'religion' or 'pilgrimage'. Thus, religious tourists are not well defined because some tourist visit the religious places not because of spiritual feeling but because to understand culture or may be for aesthetic values. The other reason

could be to utilize leisure / holiday/ business / conference. Another common problem with the measurement of religious tourism relates to the inconsistent definitions of the religious tourist. Many statistics do not clearly identify whether they include international or domestic religious tourists [3]. An International Conference on Religious Tourism in Fatima, Portugal, World Tourism Organization (UNWTO) estimates that about 300 to 330 million tourists visit the world's key religious sites every year, with approximately six hundred million national and international religious voyages in the world [4]. An interesting group called ARC (Alliance of Religions and Conservation) claims that "It is impossible to get fully accurate figures for the number of pilgrims to most sites" because in many places, records are not necessarily kept. However, ARC estimates that more than 200 million people go on pilgrimage every year – with the duration of the trip varying from hours to days, and sometimes pilgrims "leave home for many months". It is clearly evident that this 200m figure is incredibly conservative, since it only includes numbers visiting 38 of the world's largest pilgrimage sites [5]. A pilgrimage *is a journey* to a sacred place. People make pilgrimages *to* places like

Jerusalem, Bethlehem, Lumbini and Dharamsala as part of their religious or spiritual practice. Charles Mann's work for National Geographic shows us that religion instigated "more people coming together in one place than had likely occurred before" [6]. *A pilgrimage is often a spiritual journey, but some pilgrimages deal with other kinds of devotion* Thus, religious / faith-based / spiritual tourism / pilgrimage is a significant and constant element of the tourism industry. Many industry-focused publications highlights on how religious tourism is a 'rapidly growing segment within the tourism industry', however, this paper is based on the understanding of mobility in context to religious tourism in Nepal and India.

Motivation and objectives

The study by Nyaupane, Timothy and Poudel shows that those who identify themselves as pilgrims have higher religious motivations, and those who identify themselves as tourists have higher recreational or cultural motivations [7]. But there is the high degree of pilgrimage tour mobility between Nepal and India is the main source of motivation to conduct the study. The association of Hindu and Buddhist circuit in both of these countries is the main cause of mobility due to their intense socio-cultural similarity. Tourism in Nepal is an important economic sector (but it's contribution towards GDP is negligible) and contributes significantly to employment, income and foreign exchange earnings. It created 426,500 jobs, earned USD 497.8 million in government revenues and contributed 4% to Gross Domestic Product in 2015 [8]. According to the official figures of Nepal Government a total of 790,118 international tourists visited Nepal in 2014 and the number declined to 538,970 in 2015 due to devastating earthquake. India contributes almost 20 percent to the total tourist arrivals in Nepal. A total of 135,343 in 2014 and 75,124 Indian tourists visited Nepal by air. These numbers do not include the Indian tourists who entered Nepal over land so the number increases considerably. One of the basic reason to why an Indian visit Nepal is because of religious matter thus, Nepal has huge potential to pilgrimage tour not just limiting it to India. There are number of other religious place for Hindu and Buddhist. Likewise, India also has huge potential in tourism industry. The country received a total of 8.027 million foreign tourists in 2015. Nepal is one of the 15 top markets for India in terms of tourist arrivals. A total of 154,720 Nepali nationals visited India in 2015 and 93.9% of them used air route and 6.1% used land route being

religious tour as important mission [9]. A study conducted by the Indian Ministry of Tourism (domestic tourism Survey) reported that more than 100 million visitors travelled for 'religious purposes and pilgrimages' and eight of the top-ten ranking domestic tourist destinations were pilgrimage sites [10]. According to the Ministry's Tourism Satellite Accounts, religious tourism segment contributed almost 20% towards the total domestic tourism consumption (approximately INR 2.8 Billion) and this contribution is likely to increase annually. Nepal and India both are home to an iconic Hindu and Buddhist religious sites which are visited by millions of pilgrims and general visitors every year. This pilgrimage tourism due to its religious and cultural significance also creates direct effects on employment generation and contributes to GDP. Statistics on religious tourism of Asia and the Pacific are limited or vague. This is partly due to the close link between religion and culture in Asia where it is difficult to separate the motivation of travel except in the specific case of pilgrimages and religious festivals. Practically all Asian archaeological monuments have some connotation to religion and form the backbone of tourist circuits. Therefore, it is difficult to differentiate between the cultural and the religious tourist.

The study between Nepal and India shows that the religious tourism industry is largely based on informal activities in pilgrimage and a standard set of inflow and outflow of tourist record are not maintained properly. Thus, this study has a two-fold purpose:

1. To investigate various religious motives among the tourists visiting religious destinations;
2. To investigate whether these mobility (based on available data) has positive impact on tourism.

Pilgrimage tour connection between Nepal and India

Religious tourism is an ancient phenomenon between Nepal and India but there is hardly any documentation about its inception. However, it has recently received considerable attention in both academia and public. Over the last two decades, the number has increased sharply in order to preserve culture, tradition, rituals and history, emotions and sense of being holy. The other side of religious tourism is about contributing to local economy by stimulating both international and domestic tourism. There are numerous innovative religious products in Nepal and India. The renowned concept of Pashupati-Shiva Circuit connecting Pashupatinath and 12 Jyotirlingas of

India, Buddhist circuits related to an important events in the life of Lord Buddha. Further, Kathmandu, the city of several temples and shrines dedicated to Lord Vishnu, Ganesha and Goddesses of power. These sites of religious significance can be connected to the corresponding shrines in India in a way that pilgrimage to one site lead to complementary visit to the other. Similarly, Lumbini is the birthplace of Lord Buddha, the fountain of peace and one of the most sought place for Buddhist pilgrimage devotees. Furthermore, the ancient, King Janak in Janakpur, Muktinath in Jomsom and Halesi Mahadeva in Khotang district of Nepal are considered sacred for Hindus. Due to the open borders shared by Nepal and India, a large number of Indian nationals enter Nepal on foot. Thus, there is difficulty in estimating data and total number of Indian pilgrimage visitors in Nepal.

A large number of Nepalese pilgrims undertake tours to various sacred Hindu sites in India. Chardham, Haridwar, Varanasi, Prayag, Gaya, Puri, Tirupati, Somnath and Rameshwaram are some the most popular places among Nepali pilgrims. The Maha Khumbh Mela, in India is the largest congregation of humanity with 100 million Hindu pilgrims from around the world taking holy bath for purification. Buddhists and Hindus consider India to be the most spiritual country on earth [11].

Table1: Global Scale of Religious Tourism/ Some of the Events

100m – Kumbh Mela 2012-13 - mass Hindu pilgrimage where Hindus gather at the Ganges and river Godavari every 3 years - bathing for purification from sin is considered especially efficacious: 2001 – 70m; 2007 – 30m (Hindu) #
30m – Shrine to Ayyappan at Sabarimalai, India (Hindu -estimates for this vary with numbers up to 60 million being claimed) #
20m – Basilica of Our Lady of Guadalupe, Mexico (Christian) #
15m - Arba'een, Karbala - visit shrine of Imam Hussein in Karbala, Iraq during rba'een -, Iraq (Muslim) (21m in 2012; c.15m in 2011; c.10-14m in 2010 & 2009; c.9m in 2008). #
13m – Harmandir Sahib / Darbar Sahib (Golden Temple) in Amritsar, Punjab (elsewhere cited as 30m) (Sikh) #
10m – Tirumala Venkateswara Temple, Tirupati / Bala-Ji, India (elsewhere cited as 30m) (Hindu) #
10m - Nanputuo Temple , Xiamen, China (Buddhist) #

Source: ARC, 2014, Estimate of World Figures

Therefore, connecting and promoting these highly interconnected religious and cultural sites together serve tourism industries of both countries. Nepal is famous destination for pilgrimage reason in India due to its holy, glorious, prideful, historical and sacred divine places

India and Nepal enjoy geographical proximity, cultural affinity and shares unique relationships at a government as well as at people's level. Indo-Nepal border measures 1,753 kilometers in length and it is called Dash Gajja (ten-yard no-man's land). By and large, this boundary is not a natural boundary separated by rivers or mountains except the Mahakali River that divides the two countries in the

west and the Mechi River that divides them in the east. At certain places, the border even divides the same village.

Both countries are trusted partners in trade and tourism. While Nepal carries out more than 60% of its trade and transactions with India, every year Nepal receives almost 23% of international visitors by air from India. India ranks top the list in terms of FTAs (Foreign Tourist Arrival) to Nepal and Nepal is among the top 15 source markets for FTAs in India in 2014. The top 15 countries were USA, Bangladesh, UK, Sri Lanka, Russian Federation, Canada, Malaysia, France, Australia, Germany, Japan, China (Main), Singapore, Nepal and Thailand. These 15 countries accounted for about 71.97% of total FTAs to India in 2014.

Asian countries with significant Buddhist populations, such as Bhutan, Japan, Myanmar, the Philippines, Sri Lanka and Thailand contribute 15-20 percent to total FTAs in India. Whereas Japan, South Korea, Sri Lanka and Thailand contribute more than 20 percent to the total FTAs to Nepal in 2015. It indicates that a greater proportion of the tourist inflow to Nepal comes from countries with considerable followers of Buddhism compared to India. According to Nepal Tourism Statistics 2014 (a normal year for tourism) 12.5% of the FTAs came for the purpose of pilgrimage.

Both India and Nepal due to their secular nature, Hindus

being a majority religious group, the number of religious tourism destinations abound in India and Nepal. Nepal shares borders with Indian states of Uttar Pradesh, Uttarakhand, Bihar and West Bengal where a large number of Hindu population reside and major Buddhist shrines are situated. Nepal receives huge flow of cross country Hindu pilgrims from these states and a large number of Nepali pilgrims also visit religious sites in India every year.

Methods and results

The research was carried out using secondary data from various resources; these data are then interlinked to analyze the similarity and difference with comparative study.

Table 2: Tourist Arrival in Nepal at a Glance

Indicators	2016	2017	% Change
Tourist Arrivals by			
Air	572563	760577	32.8
Land	180439	179641	-0.4
Total	753002	940218	25
Average length of stay	13.4	12.6	
Top Five Country of Nationality			
Rank 1	India	India	N/A
Rank 2	China	China	
Rank 3	Sri Lanka	USA	
Rank 4	USA	United Kingdom	
Rank 5	United Kingdom	Sri Lanka	
Purpose of Visits			
Holiday/Pleasure	489452	658153	34.5
Pilgrimage	82830	141033	70.3
Trekking and Mountaineering	66490	75217	13.1
Official	21310	N/A	
Business	24322	N/A	
Conference	12801	N/A	
Others	55797	65815	18

Source: Nepal Tourism Statistics, 2017

As the report suggest, Indian tourist has the highest ranking in context to the number of arrival of tourist in Nepal.

China, the second highest visitors in Nepal indicates again the pilgrimage possibilities in Buddhist circuit. The pilgrimage segment is the second largest source of arrivals after holiday and leisure segment in Nepal. The National Tourism Strategic Plan 2016-2025 claims that almost

15% (by air) of arrivals from India, 60% of arrivals from Sri Lanka and 45% of arrivals from Thailand visit Nepal for religious purpose[10].

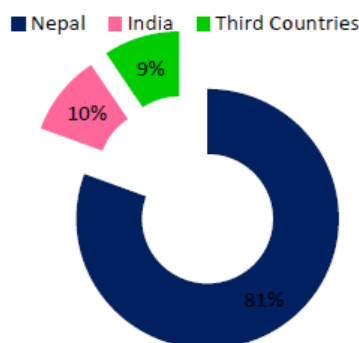
Table 3: Indian Visitors in Lumbini

	2011	2012	2013	2014	2015	2016	2017
Total	63709	120583	150252	154216	130262	134269	155444

Source: Lumbini Development Trust

A total of Indian Visiting Lumbini, the birth place of Lord Buddha in 2017 is 155,444. There was a slight declined in number of Indian tourist in 2015 and 2016 due to devastating earthquake in 2015.

Fig 1: Comparison of Indian tourist with third country visiting Lumbini, 2017



Source: Lumbini Development Trust

Lumbini is found as most visited pilgrimage by foreigners. It was visited by 1,552,586 persons out of them 80.6% were Nepalese while 10% Indians and 9.4 % from other countries. February was the most preferred month for Lumbini visit.

Table 4: Total number of pilgrimage tourist arrival in Nepal

Year	Total Arrivals	Indian Arrivals (by air only)	% of Indian Arrivals	Total Number of Pilgrimage Tourists	% of Pilgrimage Tourists
2010	602,867	120,898	20.05	101,335	16.8
2011	736,215	149,504	20.31	63,783	8.7
2012	803,092	165,815	20.65	109,854	13.7
2013	797,616	180,974	22.69	40,678	5.1
2014	790,118	135,343	17.13	98,765	12.5

Source: Department of Immigration

The statistics for five year chronologically indicates, 2012 has the highest pilgrimage tourist whereas, 2013 has lowest. But the highest percentage of pilgrimage tourist out of total arrivals was in 2010 and lowest percentage was in 2013. The number of pilgrimage tourist drop sharply in 2013 (40,678) although the total arrivals was as to that of 2012, where number of pilgrimage tourist was 109,854.

Table 5: Net Indian arrivals by land

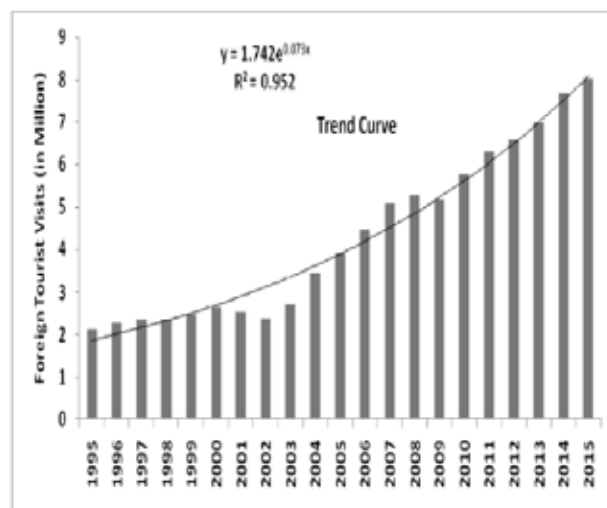
S.N.	Particulars	Visitor Arrivals
A	Total overland arrivals by various modes of transportation from the survey (2071)	1,439,586
B	Total arrival of Third Countries overland tourists in BS 2071	140,878
	Net Arrivals of Indian visitors overland using various modes of transportation (A-B)	1,298,708

Source: Department of Immigration, 2015

When talking about Nepal and India, arrivals data of Indian visitors through land are often neglected. These Indian visitors through land are very important statistics, when it comes to pilgrimage mobility. Through an open boarder access, many Indian visitors travel Nepal and vice versa. However, the data are not well maintained by both of the countries. The total net Indian arrivals are 1,298,708 in 2014 A.D. which surpassed the total number of tourist in Nepal. And there are free flows of people who walk to Nepal on foot whose statistics are hard to maintain. So, the number of people visiting Nepal may increase slightly. In an informal talk to one official in Pashupatinath, which do not maintain Indian visitors statistics claims it to be 1 Million annually. This is possible only when most of the Indian visitors to Nepal by land visit this holy place.

If we just look at the facts of an India, based on total numbers of visitor since 1995 to 2015, the data was fitted to exponential trend curve of R-square valued 0.952 which is a growth indication to tourism sector. The number of tourist visiting India increased to 8.03 millions in 2015 from 2.12 millions in 1995.

Fig 2: Total numbers of visitor in India, 1995-2015



Source: Calculations based on MoF data, Government of India

The share of South Asia alone is 29.41% out of Total visitors in India (2017). There is a steady growth in the number of visitors to India during this three years data. If the data of Nepal in Indians borders and vice-versa are kept properly, the number of visitors are likely to increase being pilgrimage as main motive.

Table 6: Share of South Asia in total number of visitors to India

Country of Nationality	Number of Arrivals		
	2015	2016	2017
South Asia			
Afghanistan	114406	123330	149176
Bangladesh	1133879	1380409	2156557
Bhutan	19084	20940	25267
Iran	30774	39184	42641
Maldives	68907	67457	66150
Nepal	154720	161097	164018
Pakistan	124924	104720	44266
Sri Lanka	299513	297418	303590
Total	1946207	2194555	2951665
Grand Total	8027133	8804411	10035803

Source: Bureau of immigration, India, 2018

Conclusions and recommendations

The study confers and indicates the high possibilities of interexchange for pilgrimage tour between these two nations. Furthermore, the clear religious and cultural association can boost the religious tour. There are every circuit available for both Hindu and Buddhist pilgrimage. The competitive advantage to Nepal is more due to India's high Hindu population. But the results show almost the same level of Indian visitors to Nepal and vice versa, though the tourist by land is not accounted. Although there is high potential pilgrimage tour mobility in both nations, they do not maintain proper data entering each country by land. This has to be taken into consideration as there is high flow in an open boarder. Thus proper statistics has to be maintained to understand religious mobility and exact their contribution towards economy. Here are other lists of recommendations to consider by both the nations.

- Enhancing of Hindu or Buddhist religious destinations can be increased by organizing the state or governments or by celebrities level visits
- Conducting an assessment of tourism infrastructure at each of the proposed circuit destination or to identify appropriate planning and infrastructure work to make these circuits viable in India and Nepal.
- For the further development of pilgrimage tourism,

governments and private sectors of both countries need to work in a coordinated way so that the benefits are maximized and challenges are collectively mitigated. This would also inspire public-private model for development which is renowned in tourism sector for planning, designing and executing the decisions in an innovative way

- The governments should raise pilgrimage tour issues and arrangements in their bilateral meetings for its improvement and maintenance. These motives not only help increase tourist but will also popularize cross border tourism between Nepal and India.
- Joint promotion campaign for Buddhist and Hindu circuits has to be arranged frequently to attract the tourists, emphasizing on Pilgrimage, Spirituality and Ancient Heritage.
- A high level policy level intervention is required to formalize the exchange of visitors between Nepal and India. Signing of a bilateral MoU between India and Nepal to develop and promote pilgrimage tourism is highly recommended.
- The Buddhist and Hindu circuit has proved the potential of religious tourism but yet need to be harnessed and harvested. Many shrines in India and Nepal share a common derivation and complement each other and have one or the other connection. Announcement of joint packages by both governments will facilitate and encourage exchange of pilgrimage between two countries.
- The private sectors of India and Nepal should be encouraged to innovating pilgrimage tours packages. The existing travel related associations, Chambers and Charity institutions should be used in devising collective program. Joint programs (integrating destinations of two countries as complementary) should be promoted by the governments through their national electronic/print media
- Governments of India and Nepal are strongly recommended to organize educational tours to pilgrimage sites in India and Nepal.
- The road connections and transport facilities at the Indo-Nepal border are at poor state and need immediate improvement to increase visitors flow as visitors by land can have influencing numbers. This is also shown by the study of Indian visitors in Pashupatinath Temple.

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Job Satisfaction of Teaching Faculties in Tribhuwan University Affiliated Colleges

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Abstract

This study is conducted to evaluate the job satisfaction of teaching faculties in Tribhuwan University affiliated colleges in Nepal. This paper has considered factors i.e. promotion and recognition (PAR), pay and benefits (PAB), student (STU), physical environment (PE) and leaders (LEA) to identify which facets affect teachers' job satisfaction teaching at Tribhuwan University. Teachers are the most important person in teaching-learning process. They are the one who make all professionals. They aspire security, handsome salary, and quality of work life, recognition, and independence of work. They become tensed when these needs are not fulfilled. A satisfied employee is always productive employee. Therefore, dissatisfaction among employees is undesirable and dangerous in any profession. A well structured questionnaire was designed to collect data through simple random sampling technique from 150 teachers teaching at different colleges affiliated to Tribhuwan university. Responses were made on 5-point Likert scale. The data generated from this survey were analyzed to draw meaningful information using descriptive statistical analysis, correlation and regression analysis.

The result revealed that pay and benefits (PAB) and promotion and recognition (PAR) have their significant impact on teachers' satisfaction teaching at different colleges affiliated to Tribhuwan University. Similarly, students (STU), physical environment (PE) and leaders (LED) do not have their significant impact on teachers' satisfaction. It means that the teachers teaching at different colleges affiliated to Tribhuwan University are not happy with their promotion and recognition and their leaders. The result suggests that it has its real life managerial implications in formulating and implementing strategic decisions for creating and maintaining higher level of teachers' satisfaction teaching at Tribhuwan University. Tribhuwan university affiliated colleges should pay proper attention to reduce the higher intensity of dissatisfaction of teachers in order to impart quality education through teachers' satisfaction.

Keywords

Faculties Satisfaction, students, physical environment, promotion and recognition

Introduction

A job is a basic necessity that is essential to fulfill the financial requirements of every individual and his/her family. Job satisfaction is as any combination of psychological, physiological and environmental circumstances that cause a person truthfully to say 'I am satisfied with my job' (Hoppock, 2011), which presents a set of factors that cause a feeling of satisfaction.

The teachers' job is to educate and impart knowledge to the students who will become skilled work force of the country in the future. Their satisfaction is important to improve the quality of the education system for the development of human intellectual ability and overall development of the nation.

Teachers' job satisfaction is a multifaceted phenomenon (Sharma & Jyoti, 2006; and Srivastana & Bajpai, 2005) that is critical to turnover (Hom & Griffeth, 1992), commitment (Mathieu & Zajac, 1990), and school effectiveness. The teacher job is to educate and impart knowledge to the students who will shape the future of the nation at schools, colleges and universities in any country. Their satisfaction is vital to improve the quality of education institution especially in developing countries to steer society in the proper direction for development of the nation and overall human intellectual ability. Teacher satisfaction is a crucial part to ensure quality education and overall development of society through student innovative and pragmatic teaching-learning process. It's equally important to provide inner satisfaction to teacher

so that they can impart better education with full zeal and enthusiasm.

There is no single accurate definition of job satisfaction in the world; it varies from person to person, organization to organization, country to country and culture to culture. Although there might be some international trends, such as the notion that teachers are most satisfied due to the intrinsic role of teaching, the achievement of students, the positive relationship with all stakeholders, helping the students, self-growth and development (Dinham & Scott, 2002; Vandenberg, 2002). Job satisfaction is a combination of positive and negative feelings that employees have towards their jobs, which are closely linked to their behavior in the workplace (Davis & Nestron, 1985). Job satisfaction is a worker's sense of achievement and success, which is directly linked with productivity and personal wellbeing. It further implies enthusiasm and happiness, which leads to recognition, income, promotion, achievement and feelings of the fulfillment of goals (Kaliski, 2007).

Job satisfaction is enthusiasm and happiness, which leads to recognition, income, promotion, achievement and feelings of the fulfillment of goals (Kaliski, 2007). Job satisfaction has become one of the major issues because the significant quality of teachers' performance is reflected upon the academic success of the students, educational institution, and the economy as a whole. Most of the research on teachers' job satisfaction has been carried out in developed or other developing countries. It is still unclear how teachers' job satisfaction is affected in Nepal. Thus, the understanding of factors affecting teachers' satisfaction at the workplace is of paramount importance for a successful educational system. The objective of this research is to determine impact of variables under study towards Tribhuvan University affiliated colleges' teachers' job satisfaction.

Research hypothesis

This research study examines the relationship of job satisfaction with of job itself, pay and benefits, Leaders' attributes, qualities of colleagues, promotion and recognition, students' behavior, and physical environment. The findings of these relationships provided information regarding job satisfaction and major factor influencing it in Nepal. The current research study tested the null hypotheses and the hypotheses associated with the objective of this study. The alternative hypotheses were as follows:

H₁: There is a positive and significant impact of Job itself on teacher job satisfaction.

H₂: There is a positive and significant impact of pay and benefits on teacher job satisfaction.

H₃: There is a positive and significant impact of leaders on teacher job satisfaction.

H₄: There is a positive and significant impact of promotion and recognition on teacher job satisfaction.

H₅: There is a significant and positive impact of physical environment on teacher job satisfaction.

Theoretical framework

This study is influenced by Hertzberg's two factor theory to some extent. The relevance of (Hertzberg, 1959) theory for the present study is that it emphasizes the fact that for individuals to be satisfied with their jobs certain job factors must be in place. The factors assisted the researcher to assess the job satisfaction levels of teachers teaching in Tribhuvan University affiliated colleges as well as how they positively or negatively influenced job satisfaction.

In this study, five dimensions of teachers' job satisfaction are job itself, pay and benefits, promotion and recognition, students and physical environment. The framework simply shows the the relationship between job itself, pay and benefits, promotion and recognition, students and physical environment and job satisfaction of teachers.

Literature review

It is evident that the purpose of any educational system is the preparation of skillful citizens that help for political, social and economic development of the country. These are accomplished when the components of the educational systems are in good conditions. Among several components of the educational system viable, functional and productive maintenance of satisfied, committed and motivated teaching force in the system is crucial. If the teachers are not satisfied in their job, their moral would be poor and a lot of damage is happened to the skilled man power supply (Nalor, 1999). Ball & Stenlun (1990) reveals that teachers indicate that success in their work was a major reason for being satisfied in their choice of profession. Canadian teachers also expressed satisfaction with their salaries, colleagues who were said to be helpful and cooperative, and the respect accorded to teachers. Among Albanian teachers, job satisfaction was associated with job security and respect accorded teachers (Kloep & Tarifa, 1994). Therefore, it is essential for the Leaders of the educational system to meet the expectation of

the teachers, provide better working environment, opportunity for advancement, take in enthusiastic teachers and students, provide better pay and benefits, provide proper recognition and so on in order to employ and retain satisfied teachers for the successful production of skillful citizens, success of educational institution and development of the country.

Job satisfaction is the collection of feeling and beliefs that people have about their current job. People's levels of degrees of job satisfaction can range from extreme satisfaction to extreme dissatisfaction. People also can have attitudes about various aspects of their jobs such as the kind of work they do, their coworkers, supervisors or subordinates and their pay (George et al., 2008).

Research studies across many years, organizations, and types of jobs show that when employees are asked to evaluate different facets of their job such as supervision, pay, promotion opportunities, coworkers, and so forth, the nature of the work itself generally emerges as the most important job facet (Church & Jorgensen, 1978). Also, welfare (wellness) programs including benefits, bonus, overtime, transport allowance, medical allowance, etc., have positive relationships with employee satisfaction.

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Methods

Descriptive designs as well as survey research design have been used to establish the empirical data on factors affecting teachers' satisfaction teaching at Tribhuwan university affiliated colleges. A survey research design has been used to investigate, assess opinions and preferences in educational issues and problems pertaining to teachers' satisfaction.

A well structured questionnaire was designed to collect data from teachers teaching at Tribhuwan University affiliated colleges operating at Kathmandu. Convenience sampling technique was used to collect data from respondents teaching at different colleges affiliated to Tribhuwan University.

Learning environment includes internal colleges are teaching and learning process in the class room, assessment, teaching learning management in colleges and administration, instructional role, placement, outreach program, industry exposure, learning styles, curriculum aspects, college management, infrastructure, community involvement in college activities, and physical facilities and career counseling. Students' achievement has been measured in terms of knowledge, skills and attitudes.

Instrumentation

Both primary and secondary data have been used under this study. Primary survey based data has been collected to examine the impact of pay and benefits, promotion and recognition, physical environment, leaders and students behavior on teachers' satisfaction. At the same time, the researchers also looked into several published sources which contained established questionnaires and inventories that had been tested and re-tested in their validity and reliability effectiveness. Some of the published sources include Reid (1987), Dunn & Price (1985), and Kolb (1984), as well as some other sources. Five point rating scale has been used to measure the impact of pay and benefits, promotion and recognition, physical environment, leaders and students behavior on teachers' satisfaction. Fifty items at 5 point rating scale (Likert Scale) ranging from "1" strongly disagree to "5" indicating strongly agree has been constructed to measure the impact of learning environment on students' achievement in Nepalese business school.

Table: reliability test

Variable	Composite Reliability	VIF	Cronbach Alpha	Communality
PAB	0.71	1.21	0.78	0.88
PAR	0.83	1.67	0.81	0.74
STU	0.89	1.89	0.86	0.78
PE	0.81	1.56	0.87	0.73
LEA	0.79	1.89	0.77	0.86
SAT	0.85	-	0.75	0.83

Table 1.2 reveals the reliability test. VIF factors have been identified to be less than 1 which means there is no multicollinearity among variables under investigation. The result reveals that the values of variance inflation factor are ranging from 1.21 to 1.89 which falls under ten, It means the data is free from the problem of multicollinearity. The values of cronbach's alpha also seemed to be greater than 0.7 which resembles that the

data is reliable (Nunnally, 1984). Likewise, communality values have been found to be greater than 0.7 which is good for the research. The composite reliability values have found to be ranging from 0.71 to 0.89 which are excellent for the purpose of reliability. Thus, it can be concluded that the data is reliable for the purpose of undertaking research.

Table 2: Correlation analysis between independent variables and teachers' satisfaction

Variable	Mean	S.D	1	2	3	4	5	6
1. PAB	4.57	0.89	1.00					
2. PAR	4.12	0.83	0.34	1.00				
3. STU	4.16	0.76	0.36	0.33	1.00			
4. PE	3.87	0.78	0.32	0.34	0.58	1.00		
5. LEA	4.54	0.58	0.57	0.53	0.36	0.67	1.00	
6. SAT	4.50	0.72	0.57**	0.47**	0.58**	0.24*	0.38*	1.00

(**)= Significance at 0.001; (*) = significance at 0.05; PAB = Pay and benefits, PAR = Promotion and recognition, STU = Students, PE = Physical environment, LEA = Leaders, and SAT = Teachers' satisfaction

Table 1.1 describes about correlation matrix between variables under investigation. The correlation coefficient between pay and benefits and teachers' satisfaction has found to be 0.57 that is moderately positively correlated. The p-value has recorded to be 0.000 that is highly significant. Thus, it can be concluded that there is a positive and significant relationship between pay and benefits and teachers' satisfaction. Likewise, There is a positive and significant relationship between promotion and recognition and teachers' satisfaction ($r = 0.47$, $p < 0.001$). There is a positive and significant relationship between students and teachers' satisfaction ($r = 0.58$, $p < 0.001$). There is a positive and significant relationship between physical environment and teachers' satisfaction ($r = 0.24$, $p < 0.05$). Finally, There is a positive and significant relationship between leaders and teachers' satisfaction ($r = 0.38$, $p < 0.05$).

Table 1.4: Multiple regression analysis

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.537	.126		20.154	.000
	PAB	.273	.033	.324	8.2727	.000**
	PAR	.208	.028	.269	7.313	.000**
	STU	.037	.023	.066	1.606	.109
	PE	.053	.030	.066	1.762	.078
	LEA	.037	.020	.070	1.822	.069

(**) denotes significance at 1% level of significance, PAB = Pay and benefits, PAR = Promotion and recognition, STU = Students, PE = Physical environment and LEA = Leaders

$$Y_{(SAT)} = 2.537 + 0.273PAB + 0.208PAR + 0.037STU + 0.053PE + 0.037LEA$$

Table 1.4 describes about the multiple regression analysis. The result shows that pay and benefits (Beta = 0.273, $p < 0.01$) and promotion and recognition (Beta = 0.208, $p < 0.001$) have their significant contribution on teacher satisfaction. Thus, it can be concluded that there is a significant impact of pay and benefits and promotion and recognition on teacher satisfaction working at Tribhuvan University affiliated colleges in Kathmandu. Likewise, the result also revealed that there is no significant impact of students (Beta = 0.037, $P > 0.05$), physical environment (Beta = 0.053, $P > 0.05$) and leaders (Beta = 0.03, $P > 0.05$) on teachers satisfaction in Tribhuvan university affiliated colleges.

Conclusion

The result revealed that there is a significant relationship between pay and benefits (PAB), colleagues (COL), promotion and recognition (PAR), behavior of students (STU), physical environment (PE), and leaders (LEA). Additionally, the strength of relationship among independent and dependent variable was found to be strong. There is a significant impact of pay and benefits (PAB) on teachers' satisfaction. Likewise, promotion and recognition has found to have significant impact on teachers' satisfaction which is in the same line with (Pilanandanond et al., 2006; Sharma, 2017; & Schneider, 2002).

Besides, there is no significant impact of physical environment on teacher job satisfaction which is contradictory to the findings of (Sharma, 2009, & Mwamwenda, 2007). Likewise, students' behaviour does not have its significant influence on teacher job. Finally, there is no significant impact of leaders (LEA) on teacher job satisfaction in Pokhara University affiliated college of Nepal. The conclusion reveals that there should be congenial working environment for teachers to unleash their potential to impart quality education to the students of the university. Furthermore, university should pay proper attention towards maintaining and developing transformational leadership among departmental heads and coordinators so that they can better ensure good teaching-learning academic environment at the university affiliated colleges in Kathmandu.

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Factors Affecting Guest's Perceived Value of Dinning Services in Nepalese Restaurant

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Abstract

The study aims to determine the impact of dinning services' quality on guest's perceived value in Nepalese fine dining restaurants. It also identified how the dinning services affects guest's perceived value in restaurants. A sample of 152 guests visiting in fine dining restaurants was randomly selected from different restaurants operating in Kathmandu valley. Data analysis was done using descriptive statistics, Pearson correlation, regression analysis, Multicollinearity and F-test. The result revealed that four components i.e. tangibility (5 items), reliability (7 items), assurance (8) and empathy (6) have significant impact on guest's perceived value in Nepalese restaurant industry. The findings are discussed with a view to improve the guest's perceived value in Nepalese restaurant industry. Modern restaurants have been found to have given much attention on guest's perceived value and their satisfaction for the improvement of overall services in fine dining restaurants at global level.

Keywords

Factors, SERVQUAL, DINESERV, customer satisfaction,

Introduction

It can be said that the nature of 'guest or customer perceived value is complex and multidimensional which conceptualize the terminology unclear and the matter of research in the days to come. An interaction between a subject (a consumer or customer) and an object (a product) (Holbrook, 1994, 1999); Likewise, Value is relative by virtue of its comparative, personal, and situational nature (Holbrook, 1994, 1999); and Value is preferential (Holbrook, 1994, 1999; Zeithaml, 1988), perceptual (Day and Crask, 2000), and cognitive-affective (Babin et al., 1994) in nature.

The success of any food and service establishment depends on its ability to satisfy their quests by providing a dining experience (parasuraman, Zeithaml, & Barry, 1985; 1988; Gabbie & O'neil, 1996). The restaurants' ability to satisfy their guests is the determining factor in customer retention and loyalty (Zeithaml & Bitner, 2000). In fact, it is good financial proposition to increase the number of repeating guest and attract the new ones (Reichheld & Sasser, 1990; Rozenberg & Czepiel, 1983). According to the literature, significant attention has been paid to the issues of service quality. Service quality is defined as the consumers' judgment of the excellence of the service (Parasuraman et al., 1988). It plays a significant role in determining

and influencing customer satisfaction (Ladhari, Brun & Morales, 2008; Liu & Jang, 2009). From the consumers' point of view, service quality is described as the evaluation of what they experienced and what they expected from a service product (Parasuraman et. al., 1985, 1988; Bolton & Drew, 1991). Service quality is more difficult for the consumer to evaluate than product quality because of the lack of tangible evidence associated with services. Therefore, a service firm needs standardized, systematic and qualitative measurement to assess its performance, because service quality is an important measure for the success of a firm.

Parasuraman, Zeithaml and Berry (1988) developed the SERVQUAL instrument for measuring service quality that consumer think should be provided and what they actually have been provided. The SERVQUAL instrument consists of 22 items that measure consumers' expectations and 22 corresponding items that measure consumers' perception of the service they received, grouped in five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Although the SERVQUAL instrument has been widely used in measuring service quality, researchers have suggested that it has limitations, including issues relating to measuring time, measuring scale and service quality dimensions in terms of restaurant Business. So, a few year later Stevens, Knutson and Patton (1995) developed

a model called DINESERV specially to assess customers' perceptions of restaurant service quality. The model was adapted from SERVQUAL and was proposed as a reliable and relatively simple tool for determining how customers view a restaurant's quality. The original DINESERV instrument contained 40 service quality items, but the final version of DINESERV contained 29 items having five service quality dimensions.

Marković et al. (2010) suggest that the evaluation of service quality in restaurants is challenging, as service outcome is not the only important variable; delivery of those services is also a significant indication of the intended service quality. The success of any food and service establishment depends on its ability to satisfy their quests by providing a dining experience (Parasuraman, Zeithaml, & Barry, 1985; 1988; Gabbie&O'neil, 1996). Most research confirmed that customer satisfaction is directly related to profitability of organization (Luo, Homburg, 2007; Blesic, Tesanovic, Psodorov, 2011; Martínez-tur, et al., 2011). According to the literature, significant attention has been paid to the issues of service quality. Service quality is defined as the consumers' judgment of the excellence of the service (Parasuraman et al., 1988). It plays a significant role in determining and influencing customer satisfaction (Ladhari, Brun& Morales, 2008; Liu & Jang, 2009).

1.3 Objectives of the study

The general purpose of this thesis is to investigate the guests' perceived value of dining services in the fine dining restaurants of Nepal

1.4 Hypothesis formulation

The present researcher formulates the following hypothesis to assess the impact of service quality on guest's perceived value in Nepalese fine dinning restaurants. They are hypothesized as follows:

H1: There is significant impact of tangible dimension on customers' dining perception in the restaurant.

H2: There is significant impact of reliability dimension on customers' dining perception in the restaurant.

H3: There is significant impact of assurance dimension on customers' dining perception in the restaurant.

H4 There is significant impact of empathy on customers' dining perception in the restaurant.

2. Literature review and theoretical framework

A restaurant is a food and service establishment which offers and serves food and drinks to the guests in retention

of money (Ninemeier, 1998). However, restaurants primarily are sellers of "food service experience" (Yuksel & Yuksel, 2002). The food plays a significant role in the food and service establishments but there are many other factors that are important as well (Yuksel & Yuksel, 2002). Usually, meals are served and eaten inside of the restaurant, but many food and service establishments also offer take-out and food delivery services (Ninemeier, 1998). The restaurants have many advantages such as big territory of the dining area, visually attractive parking area. Usually they offer different types of cuisine such as local, French, Italian and etc. Each type of cuisine has its own leaders. Restaurants can be also a part of a large complex, such as hotel, where the dining facilities are provided for convenience to customers of the hotel in order to maximize their potential revenue.

The term "restaurant" firstly appeared in the 16 century, meaning "a food which stores", specifically a rich, highly flavored soup. It was applied to an eating establishment in around 1765, which was founded by Parisian soup-seller and called Boulanger (Ninemeier, 1998). The modern restaurant became known in 18th century in France as an establishment that prepares and serves the food and drinks according to the guests' order (Ninemeier, 1998). Restaurateur is called the owner of the food and service establishment. Words "restaurant" and " restaurateur" derived from the French verb, which means "to restore" (Wikipedia, 2012). According to the Guinness Book of Records, the Sobrino de Botin in Madrid, Spain is considered to be the oldest country hosting a restaurant. The first restaurant was opened there in 1725 (Ninemeier, 1998).

2.1 Tourism and restaurant industry in Nepal

Nepal is located in the Himalayas and bordered to the north by China, and to the south, east, and west by India with an area of 147,181 square kilometers (56,827 sq mi) and a population of approximately 30 million, Nepal is the world's 93rd largest country by land mass and the 41st most populous country. Kathmandu is the capital of the nation and a treasure house of ancient art and culture. Tourism is the largest growing industry in Nepal and its largest source of foreign exchange and revenue. Possessing eight of the ten highest mountains in the world, Nepal is a hotspot destination for mountaineers, rock climbers and people seeking adventure. The Hindu and Buddhist heritage of Nepal and its cool weather are also strong attractions. Mount Everest, the highest mountain peak in

the world, is located in Nepal. Mountaineering and other types of adventure tourism and ecotourism are important attractions for visitors. The world heritage site Lumbini, the birthplace of Buddha is located in the south of the West region of Nepal (which despite the name is located in the centre of the country) and there are other important religious pilgrimage sites throughout the country. The tourist industry is seen as a way to alleviate poverty and achieve greater social equity in the country.

Tourism sector of Nepal is managed with partnership of Government, private sector, households, professionals and NGOs. Tourism industries play pivotal roles in tourist service, service management, increasing revenue. There are 38242 beds provided by all hotels registered in Nepal including 120 star levels. Travel agency, tour guide, tour operators, rafting agencies, trekking agencies and guides all are in increasing number of trend. The total number of tourist arrival is 753002 from different parts of the world. Basically, India, China and Shre- Lanka are the top three countries from where the tourists come to visit respectively. Their main purpose of visit is holiday and pleasure (Nepal Tourism Statistics, 2016). According to WTTC (2016) , direct contribution to GDP is 3.6% and Direct contribution to employment is 2.9%.

2.2 Service quality

Service quality is regarded as a significant aspect of competitiveness (Lewis, 1981). Providing outstanding service quality and customer satisfaction is the critical concern and challenge facing the current service industry. Service quality is an essential issue in both service industries and business (Zahari et al., 2008). Since last two decades, service quality has attracted a lot of attention of practitioners, researchers, and managers due to its impact on business performance, return of investment, lower costs, customer loyalty, customer satisfaction, and gaining profit (Chowa, Laua, Lo, Sha & Yun, 2007). Service quality is also synonymous to customer opinion about how a service meets or exceeds their expectations (Czepiel, 1990). Munusamy et al. (2010) characterize service quality as the difference between customer's expectations and the perceptions of the received service. Customer expectation and perception are the two major components of service quality. Consumers evaluate quality as low when perception does not meet their expectation and quality as high if perception exceeds their expectations.

Therefore, organizations should pay attention to deliver a

high level of service quality to customers more effectively in the market place (Chowa et al, 2007). Many researchers suggested that guest satisfaction can be achieved through high-quality service and product (Tsang & Qu, 2000; Getty & Getty, 2003).

2.3 Customer satisfaction

Many scholars paid attention to customer satisfaction and service quality in the food- service industry (Johns & Howard, 1998; & Johns & Pine, 2002). Researchers discovered the most important attributes for guests such as low price, value for money, service, location, brand name, image and food quality (Johns & Howard, 1998; Tam & Yung, 2003). Specifically, the main factors that contribute to guests' satisfaction in restaurants contain food, physical provision, atmosphere, and service received during the meal experience: balance, healthiness, layout, furnishing, cleanliness, comfort, speed, friendliness, care and etc. (Johns & Pine, 2002). Malik and Ghaffor (2012) define the concept of customer satisfaction as meeting customer expectations regarding the special parameters of satisfaction. Indeed, this concept has been defined differently by various scholars. Customer satisfaction is "an indicator of whether customers will return to a restaurant". Vavra (1997) also consider customer satisfaction as "the leading criterion for determining the quality actually delivered to customers through the product/service and by the accompanying servicing."

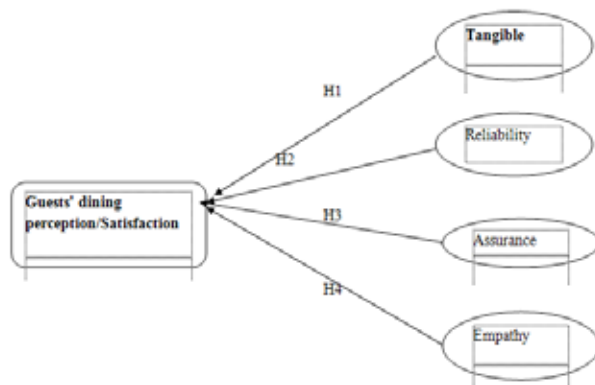
The concept of customer satisfaction has thus been applied to service industry by many scholars. In addition, Saad and Conway (2006) connect this satisfaction concept to the intention for repeat purchasing and positive word-of-mouth. The definitions of consumer satisfaction relate to a specific transaction (the difference between predicted service and perceived service) in contrast with 'attitudes', which are more enduring and less situational-oriented".

2.4 Conceptual framework of study

The whole research is administered around periphery of the following framework. Basically, there is no such a fix and scientific approach that the guest values the dining services of hotel and restaurants. Various scholar have come through different parameter that the guest perceive the dining services of hotel such as Zeithaml(1998) have focused on a variety of notions such as perceived price, quality, benefits, and sacrifice. Similarly, Parasuraman, Zeithaml and Berry (1988) developed the SERVQUAL instrument for measuring service quality. Accordingly, DINESERV that developed by Stevens, Knutson,

and Patton (1995), was in response of finding that “SERVQUAL was inadequate for the “unique” restaurant service environment”. Retaining SERVQUAL’s five dimensions, Stevens et al. (1995) adapted measurement items to the context of restaurants and added seven extra restaurant specific items. The present researcher has come to conclusion that four out of five dimensional framework developed by Stevens et al. (1995) would be analyzed to find out the guest perceived value on dining services. The conceptual framework of the research report is as follows.

Conceptual framework of study



3 Research methodology

Causal-comparative research design and survey research design have been used to establish the empirical data on guest’s perceived value and service dimension in Nepalese restaurant industry. A survey research design has been used to investigate the relationship between guest’s perceived value and tangibility, reliability, assurance and empathy in Nepalese dining restaurants. This research design is considered the most appropriate methods to measure guest’s perceived value and service quality of dining restaurants through employee attitude and experiences of guests visiting in Nepalese Nepalese restaurants in a natural setting through tests or attitudes scales or questionnaires. The research is casual-comparative since it explains the cause and effect analysis used in the research to assess the impact of service quality dimensions on guest’s dining satisfaction in Nepalese restaurant.

Guests visiting in Nepalese dining restaurants have been taken as respondents for the study. Primary data has been used through a well-structured questionnaire for the study. Primary survey based data has been collected to examine the impact of service quality on guest’s perceived value of Nepal. Service quality has been operationalized into tangibility, reliability, assurance and empathy. The study

is focused to measure the influence of these four factors on guest’s perceived value of Nepalese dining restaurants. Thirty items at 5 point rating scale (Likert Scale) ranging from "1" strongly disagree to "5" indicating strongly agree has been constructed to measure the impact of service quality dimensions on guest’s perceived value in Nepalese dining restaurants.

3.1 Questionnaire development

The researcher has used the survey questionnaires to the guest at end of their meal. The questionnaire based on DINESERV, measures the service quality dimensions: reliability, tangibility, assurance, empathy and responsiveness (Parasuraman et al., 1988) The questionnaire consists of three parts. The first part was designed to measure demographic information. The demographic information included gender, age, nationality and education and so on. The second part was aimed at identifying guests' service quality perceptions about five DINESERV dimensions: reliability, responsiveness, assurance, empathy, tangibility (Parasuraman et al., 1998). The third part of the questionnaire was related to the customer satisfaction on dining services. A structured questionnaire was prepared and distributed to the respondents. The respondents filled out the questionnaire following the instructions given in the questions. Then the responses were collected from the respondent. The questionnaire was distributed on convenience basis according to the demographic factor.

The questionnaire contained close-ended questions so that it takes less time while filling in the answer. Most of the close-ended questions were measured using 5 rating Likert scales to create an easy to answer an unbiased questionnaire. Scores on the scale items varies from a low of 1 (Very poor) to a high of 5 (very good), with poor, average, and good.

3.2 Sampling procedure

Population of the study refers to the totality of individuals, institutions or events that are to be represented by the study. Population is defined as the group of people from whom a study is interest in getting information, and a sample is a part or a subgroup of the population (Parasuraman et al., 2004). The purpose of sampling is to select a sample who should be representative of the population under investigation. In total, 200 respondents were selected for this study and the questionnaire was distributed to them through hard copy. Among them only 197 of the respondents replied to the questionnaire. So, the response rate was 98.5%. The target population of this study is the customers who dine in the fine dining restaurant of Nepal. The location of the study is inside the Kathmandu valley because there are plenty of restaurant

available inside the valley. Moreover, the present researches use convenient sampling technique in the sense that it will be easily accessible in terms of time, cost, and distance of the respective area. The data has been collected from the Dining Park Restaurant and Lounge Bar at Purano Baneshwor, Kathmandu.

4. Results

Table 1: Correlation Matrix between Dependent and Independent Variables

Table 1: Mean, standard deviation, and correlation among each variables

S.N	Attributes	Mean	S.D.	1	2	3	4	5
1	Tangibility	4.45	0.78	1				
2	Reliability	4.21	0.93	.782	1			
3	Assurance	4.65	0.76	.771	.674	1		
4	Empathy	3.44	0.74	.560	.778	.877	1	
5	DS	4.12	0.81	.761	.892**	.783	.792	1
Notes: Correlation is significant at the 0.01 level (2-tailed) indicated by **. DS = Dinning satisfaction of guest								

Table 1 describes the descriptive frequency of variable taken under investigation in the research. The mean vale of variables seem to be greater than 3.44 which reveals that the students are positive towards different variables and they have its impact on students' achievement in Nepalese business school. Besides, the value of standard deviation has found to be less than 1 which reveals that data is consistent with minimum value 1 to maximum value 5. In addition, the correlation coefficients have recorded to be ranging from 0.761 to 0.892 which are strongly positively correlated.

The result reveals that there is positive and significant relationship between tangibility and guest's dinning satisfaction ($r = 0.761$, $p = 0.000$), positive and significant relationship between tangibility and guest's dinning satisfaction ($r = 0.892$, $p = 0.000$), positive and significant relationship between tangibility and guest's dinning satisfaction ($r = 0.783$, $p = 0.000$), positive and significant relationship between tangibility and guest's dinning satisfaction ($r = 0.792$, $p = 0.000$). It shows that there is positive correlation between guest's dinning satisfaction and tangibility, reliability, assurance and empathy.

Table 2 Reliability test

Variable	Composite Reliability	VIF	Cronbachs Alpha	Communality
TA	0.789	1.652	0.714	0.890
TS	0.862	1.562	0.728	0.780
TD	0.782	4.781	0.783	0.965
EE	0.892	4.988	0.912	0.962
TR	0.719	1.908	0.878	0.774
TM	0.901	1.419	0.709	0.879

Table 2 reveals the reliability test. VIF factors have been identified to be less than 1 which means there is no multicollinearity among independent variables. The values of cronbach's alpha also seemed to be greater than 0.7 which resembles that the data is reliable. Likewise, communality values have been found to be greater than 0.7 which is good for the research. Thus, it can be concluded that the data is reliable for the purpose of under taking research.

Table 3: multiple regression analysis

	Model	Unstadardized Coefficient		t	Sig.
	B	Std. Error			
1	(Constant)	.610	.275	2.215	.028
	Tangibility	.217	.072	3.000	.003**
	Reliability	.153	.061	2.515	.013**
	Assurance	.357	.078	4.588	.000**
	Empathy	.288	.064	4.519	.000**

DS = Dependent Variable, (**) indicates significance at 0.01

Table 3 describes about the multiple regression analysis. Four variables i.e. tangibility, reliability, assurance and empathy have been found to be significant towards guest's dining satisfaction in Nepalese restaurant at 1% level of significance. Table 3 shows the standardized estimates for each regression coefficient and the corresponding p-value at 1% level of significance. The result reveals that there is not a significant impact of tangibility on guest's dining satisfaction ($b = 0.217$, $0 < 0.01$). Accordingly, the result concludes that there is a significant and positive impact of tangibility on guest's dining satisfaction ($b = 0.153$, $p < 0.00$). Likewise, the result shows that there is a significant and positive impact of assurance on guest's dining satisfaction ($b = 0.357$, $p < 0.00$). Similarly, the result reveals that there is a positive and significant impact of empathy on guest's dining satisfaction ($b = 0.288$, $p < 0.00$). Thus, results revealed that there is a significant impact of tangibility, reliability, assurance and empathy on guest's dining satisfaction.

5 Conclusions

There is significant relationship between tangibility, reliability, assurance and empathy and guest's perceived value. The result revealed that there is significant impact of tangibility on guest's perceived value which is similar with the findings of (Chowa et al., 2007, & Markovic et al, 2013). Likewise, reliability has been found to have significant impact on guest's perceived value which is in the same line of (Chowa et al., 2007, & Markovic et al, 2013). Assurance has also significant impact on guest's perceived value which result supports the findings of (Chowa et al., 2007, & Markovic et al, 2013).

Similarly, there is significant impact of empathy on guest's perceived value which is in the same line of the findings of (Chowa et al., 2007, & Markovic et al, 2013). The findings can be useful for the Nepalese restaurant sector to bring productive and fruitful changes to have its positive influence on guest's perceived value or satisfaction pertaining to their service quality. The result will provide valuable insights to Nepalese dining restaurants.

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The Effect Technology Readiness on the Actual Usage of Open Distance Learning within the Public Universities in Nepal

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Abstract

Open Distance Learning (ODL) is a general term for the use of telecommunication to provide or enhance learning. Around the world, the academic community is discovering and exploring the Internet, teleconferencing, and related means to achieve an extended classroom or learning experience. The theory of technology readiness can be used for measuring the readiness of public universities in Nepal to adapt Open and Distance Learning. Structural equation modelling is used in this study through SmartPLS to analyse 481 valid questionnaires to evaluate the proposed model built on the Theory of Technology Readiness to determine the factors that could affect ODL adoption. This research concentrates on public universities (PU) in Nepal. In this model, the key independent constructs are comparable to Innovativeness, Optimism, Insecurity and Discomfort pertaining to these universities' readiness for exploiting this new trade of technology. The dependent constructs are based on intention to adopt ODL in the Nepal universities. The relations between the different constructs are defined in this research. This work has enhanced our insights regarding the online distance learning model. The results showed that all four independent variables considerably helped to predict the adoption of ODL with different percentages. The model that was put forward explained 60 % of the variance occurring in the actual usage among open distance learning on the public universities in Nepal.

Keywords

Optimism; innovativeness; discomfort; insecurity; technology readiness index; open distance learning

1. Introduction

Information and Communication Technology (ICT) increasingly becoming a determinant of how we live, learn and communicate. It can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration [1]. The information age has brought astonishing transformation to the way economies, governments and education systems work, it became essential to utilize ICT to achieve efficiency, effectiveness, and expansion [2][3], [4]. The ICT is a tool to achieve the purpose of education, in other words, it changes the way the two main activities of teaching and learning work by adding innovation, personalization, and speed to the process [5].

The education system of Nepal has also been influenced by the changes made by ICT in the global context. The Government of Nepal, Ministry of Education, through National Curriculum Framework (NCF), has introduced

ICT as a subject as well as ICT as a tool for instruction in school education. Some Universities/Colleges and schools have already started ICT as a separate subject as well as ICT as a means of teaching-learning process. However, there is a need of streamlining these initiatives into a broader national framework in order to ensure equitable access to and quality of education [6][7]-[9].

2. Literature review

2.1 Technology readiness index (TRI)

Technology Readiness is can be considered as a difference in the Technology Acceptance Model (TAM). It is a multidimensional psychological construct that segments online customers according to positive and negative technological convictions. It refers to the tendency of people to use new techniques to achieve goals at home and at work[9][10], [11]. The structure can be seen as a general state of mind resulting from a combination of empowering factors and inhibitory factors that collectively determine a person's desire to use new techniques. It has following are underlying dimensions:

2.1.1 Optimism (OPT)

The identification of optimism lies with the inclination to have "a constructive view regarding innovation as well as a conviction promising to give individuals expanded control, proficiency and adaptability in their lives" [12]. Self-assured individuals are suggested to embrace innovation, and in evaluation, to various buyers, are less likely be inclined to centre on the contrary parts associated with inevitable hardships as well as disappointments in new advancements, should they occur [13]. Since innovation is seen by confident people with a perspective of conceivable outcomes, it could also be expected that hopeful purchasers may see self-scanners as both less demanding and more valuable for use versus non-idealistic buyers[14].

There are many SST ponders that have shown a positive connection between SST selection and optimism. In one of the key examinations regarding, [9] found that a higher level of control was permitted to the shopper, for touch-screen request in the cost-effective food industry. The impression of purchaser control has also been seen to be emphatic with the purchaser acknowledging shopper in self-requesting booths that can be found in eateries (in the same place), as well as self-registration stands at air terminals [15]. These discoveries were in line with the findings of Shamim & Sardar[16], who discovered self-filtering SSTs, that control and efficiency are also the major determinants for the buyer acknowledgment [17]. Thus, the below hypothesis is proposed:

H1: Optimism has a positive effect on actual usage.

2.1.2 The innovation (INN)

The identification of creativity lies with the inclination "towards being a thought pioneer and an innovation pioneer" [12], in which the creative buyer is guessed to be bold in employing innovation [18]. Furthermore, inventive purchasers are guessed to view innovation as being simple, since they possess an abnormal state of mechanical information, as well as a certifiable enthusiasm to detect new innovation [12]. As creative purchasers perceive innovation as being interesting (Kotler and Armstrong, 2012), it can be highly expected that imaginative customers perceive self-scanners as being more significant and less demanding to employ than others (Godoe and Johansen, 2012).

As opposed to the other TR-ideas, it seems that contemporary SST researchers have not explored Innovativeness fairly. Likewise, for some of the examinations conveyed,

addressing of (I) the unwavering quality of the measure, as well as (ii) the beneficial outcome has been done, as proposed by the TR-writing (Godoe and Johansen, 2012). In fact, experimental studies have confirmed that an absence of viability in the Innovativeness measure continues to persist by all accounts[19], mainly since the distinction between general innovativeness and area particular cannot be thought with the measure[20]. Beyond a doubt, the space particular Innovativeness has been put forward as being firmly identified with the selection of innovation, while as a frail indicator to innovation acknowledgment, the general Innovativeness has been put forward[7]. Innovativeness measure can be enhanced as a positive measure regardless of its general methodology, a measure that could possibly contribute to the aggregate informative degree. Be that as it may, the feedback for Innovativeness measure is considered to be more grounded. In this, specifically, a sharp feedback was coordinated by Roehrich (2004), and it concentrated on a non-substantial indicator to acknowledge innovation. Due to this insightful concern, as of late, the innovation preparation record was streamlined by Parasuraman & Colby (2015) who re-assessed the measure. Post the reassessment, it was found that the measures' unwavering legitimacy and quality was of a solid help. Thus, the below hypothesis is proposed:

H2: Innovativeness has a positive effect on actual usage.

2.1.3 Insecurity (INS)

Weakness identifies with the propensity to have "doubt of innovation and distrust about its capacity to work appropriately" [12]. Once in a while, shoppers with insecurity are ready to rely on innovation (Kotler and Armstrong, 2012). They believe that innovation comes up short during the most basic minute [12]. Accordingly, purchasers with Insecurity have been linked to both equivocality (Godoe and Johansen, 2012) as well as a general low utilisation of innovation. For sure, as emphasised by both Kotler and Armstrong (2012) and Parasuraman & Colby, (2015), customers with Insecurity are sometimes a buyer that embraces innovation enthusiastically, yet they do it when there is no more decision. With these, it can be accepted that self-scanners are observed by shaky buyers as both harder and less valuable for usability versus different purchasers (Godoe and Johansen, 2012).

For instance, with regards to the Innovativeness measure, unique effects were discovered by researchers which

concern Insecurity. For example, Godoe and Johansen (2012) confirmed that the identification of Insecurity is not fundamental along with a negative assessment for the saw handiness. In spite of what could be expected, "one could expect that individuals will realise fundamental estimation for a framework that pays little heed to how things are being handled" (Godoe and Johansen, 2012). In line with this thinking, Gelderman et al. (2011) contended that there is low effect of Insecurity, yet basically considered the measure to be inconsistent and frail. However, rather than stressing its small size, they imply that insecurity is a negative idea; yet, because of its shortcomings, should be joined with the more grounded proportion of Discomfort. Notwithstanding, in the on-going TR re-assessment, Parasuraman & Colby, (2015) found that Insecurity is without a doubt emphatically identified with absence of trust in innovation, from one viewpoint, and a lower inclination to utilize innovation, then again; therefore, forcing a negative connection among Insecurity and the general acknowledgment of advances. Thus, the below hypothesis is proposed:

H3: Insecurity has a negative effect on actual usage.

2.1.4 Discomfort (DIS)

Uneasiness identifies with the inclination to have an "apparent absence of command over innovation and a sentiment of being overpowered by it" [12]. Purchasers that have a mechanical Discomfort were predicted to possess a sense of general distrustfulness towards innovative tension (Meuter et al., 2003), development and changes (Kotler and Armstrong, 2012), technophobia [12] and a general negative perception when linking with new or outsider innovation (Camber and Cook, 1985).

With the absence of saw value as well as saw usability for a specific innovation (Kallweit et al., 2014) has risen to Discomfort. Here, Kallweit et al. (2014) evaluated self-benefit data and observed advancements in terms of a reduction in saw usability that casts a critical negative effect on the adequacy of the client; hence, it appears that Discomfort and purchaser acknowledgment of SSTs possess a negative relationship. This end, however, is not questionable. Meuter et al. (2003), emphatically underscore that distress, for example, innovation nervousness, is a conceivable motivation to why customers maintain a strategic distance from innovation. Hence, at the end of the day, force a negative connection among inconvenience

and the utilization of innovation. Thus, the below hypothesis is proposed:

H4: Discomfort has a negative effect on actual usage.

2.2 Actual Usage (USE)

Actual usage is defined as the degree and manner in which users utilize the capabilities of an information system. For example, amount of use, frequency of use, nature of use, appropriateness of use, extent of use, and purpose of use (DeLone & McLean, 2016). Actual usage is considered as one of the core constructs in the IS field, literature is full of studies where actual usage is used in numerous contexts and applications because it is the ultimate goal of any technology or application. In a study about information systems in Mexico by Abrego-Almazán et al. (2017) and after analysing data collected from 133 users using SEM-PLS, it was found that use construct has a positive significant relationship with organizational results. Actual usage is mainly measured using a different method like Likert scale and other types of scales as well. The most used indicators are frequency and time length [23].

3. Research method

3.1 Overview of the proposed conceptual framework

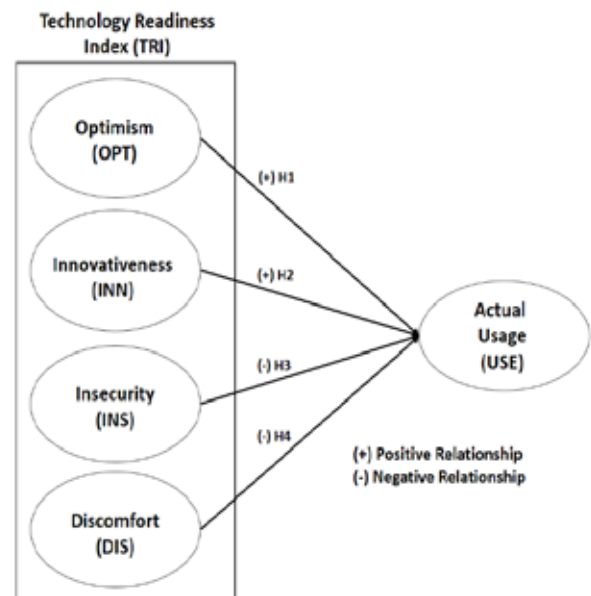


Figure 1: The proposed conceptual framework

3.2. Instrument development and data collection

A 17-item questionnaire was used to construct the instrument for this study and a multi-item Likert scale was also applied as per the information systems in the literature [24]. A Likert scale was employed to measure the constructs, which was recommended in the earlier studies (Isaac, Abdullah, Ramayah, Mutahar, & Alrajawy, 2017; Ameen & Ahmad, 2014), in which

5 referred to 'Strongly Agree' and 1 to 'Strongly Disagree'. Since the respondents were Arabic speakers, translation of the questionnaires from English to Arabic was done in a precise manner. Thus, a back translation was also employed, which is an approach employed broadly in cross-cultural surveys (Brislin, 1970; Ameen & Ahmad, 2013). In this study, the measurement of the variables was validated by employing extant research, as presented in Appendix A. For each construct, the number of items was determined based on the guidelines of Hayduk and Littvay (2012) who advocated to employ few optimal items.

3.3. Data collection

To employees within the public sector in the UAE, self-administered questionnaires were delivered personally from February to July 2018 for data collection. Out of the total of 550 distributed questionnaires, 403 were returned; for the analysis, 381 were considered appropriate. The sample size was adequate as per Krejcie and Morgan (1970) and Tabachnick and Fidell (2012). In comparison to relevant literature, this study's 69.27% response rate was considered to be highly satisfactory (Baruch & Holtom, 2008; Cable & Derue, 2002). There were a total of 33 excluded questionnaires, including 12 cases that had missing data for more than 18% of the questions, 11 cases with straight lining and 5 cases as outliers.

4. Data analysis and results

PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilising the software SmartPLS 3.0 [31]. A two-phase analytical technique (Anderson & Gerbing, 1988; Hair, Hult, Ringle, & Sarstedt, 2017) consisting of (i) measurement model analysis (reliability and validity) and (ii) structural model analysis (examining the conceptualised relationships) was employed after performing the descriptive assessment. This two-phase analytical technique consisting of a structural and a measurement model assessment is better than a single phase assessment (Schumacker & Lomax, 2004; Hair et al., 2010). While the model of measurement explains each parameter's measurement, the structural model describes the correlation between the parameters in this model (Hair et al., 2017).

The PLS technique is employed for both the structural and the measurement model in this study because of its capability to conduct simultaneous assessment, giving more accurate assessments [36]. The main bases for selecting SEM as a statistical technique for this research is that it offers a

simultaneous assessment which results in more precise estimates (Isaac, Abdullah, Ramayah, & Mutahar, 2017a; Isaac, Abdullah, Ramayah, & Mutahar, 2017b; Isaac, Masoud, Samad, & Abdullah, 2016).

4.1 Descriptive analysis

Table 1 presents the mean and standard deviation of each variable in the current study. The respondents were asked to indicate their opinion in relation to transformational leadership and human capital based on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Optimism score the highest with mean 3.81 out of 5.0, with a standard deviation of 0.84.

4.2 Measurement model assessment

Construct reliability as well as validity (comprising discriminant and convergent validity) were used to examine the measurement model. The particular alpha coefficients of Cronbach were tested to determine the reliability of every core parameter in the measurement model (construct reliability). The quantities of all the unique alpha coefficients of Cronbach in this research ranged from 0.739 to 0.939, which went beyond the proposed value of 0.7 (Kannana & Tan, 2005; Nunnally & Bernstein, 1994). Moreover, for inspecting construct reliability, all the CR (composite reliability) values ranged from 0.852 to 0.961, which went beyond 0.7 (Werts, Linn, & Jöreskog, 1974; Kline, 2010; Gefen, Straub, & Boudreau, 2000). Thus, as Table 1 shows, construct reliability has been fulfilled as Cronbach's CR and alpha were rather error-free for all the parameters.

Analysis of indicator reliability was conducted by utilising factor loadings. When the related indicators are very similar, this is reflected in the construct and signified by the construct's high loadings [33]. As per Hair et al. (2010), the exceeding of values beyond 0.70 suggests substantial factor loadings. Table 1 displays that all articles in this research had factor loadings greater than the suggested value of 0.7 except, INS1 and DIS1, which were then deleted from the scale because of a low loading value.

AVE (average variance extracted) was employed in this study to analyse convergent validity, which represents the degree to which a measure is correlated positively with the same construct's other measures. All the AVE values ranged from 0.630 and 0.891, which went beyond the proposed value of 0.50 [35]. Thus, all constructs have complied with the convergent validity acceptably, as shown in Table 1.

Table 1: Mean, standard deviation, loading, cronbach's Alpha, CR and AVE

Constructs	Item	Loading (> 0.5)	M	SD	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
Optimism (OPT)	OPT1	0.832	3.81	0.84	0.804	0.872	0.630
	OPT2	0.791					
	OPT3	0.727					
	OPT4	0.822					
Innovativeness (INN)	INN1	0.748	3.23	0.91	0.739	0.852	0.658
	INN2	0.831					
	INN3	0.851					
Insecurity (INS)	INS1	Deleted	3.58	1.15	0.925	0.952	0.870
	INS2	0.933					
	INS3	0.940					
	INS4	0.925					
Discomfort (DIS)	DIS1	Deleted	3.42	1.16	0.939	0.961	0.891
	DIS2	0.948					
	DIS3	0.934					
	DIS4	0.949					
Actual Usage (USE)	USE1	0.775	3.46	0.90	0.762	0.863	0.678
	USE2	0.862					
	USE3	0.831					

Note: M=Mean; SD=Standard Deviation, α = Cronbach's alpha; CR = Composite Reliability, AVE = Average Variance Extracted.

Key: OPT: optimism, INN: innovativeness, INS: insecurity, DIS: discomfort, USE: actual usage

The degree to which the articles distinguish among concepts or measure different constructs is demonstrated by discriminant validity. Fornell-Larcker were employed to analyse the measurement model's discriminant validity. Table 2 shows the outcomes for discriminant validity by employing the Fornell-Larcker condition. It was discovered that the AVEs' square root on the diagonals (displayed in bold) is bigger than the correlations among constructs (corresponding row as well as column values), suggesting a strong association between the concepts and their respective markers in comparison to the other concepts in the model (Fornell & Larcker, 1981; Chin, 1998). According to Hair et al. (2017), this indicates good discriminant validity. Furthermore, the exogenous constructs have a correlation of less than 0.85 [46]. Therefore, all constructs had their discriminant validity fulfilled satisfactorily.

Table 2: Results of discriminant validity by Fornell-Larcker criterion

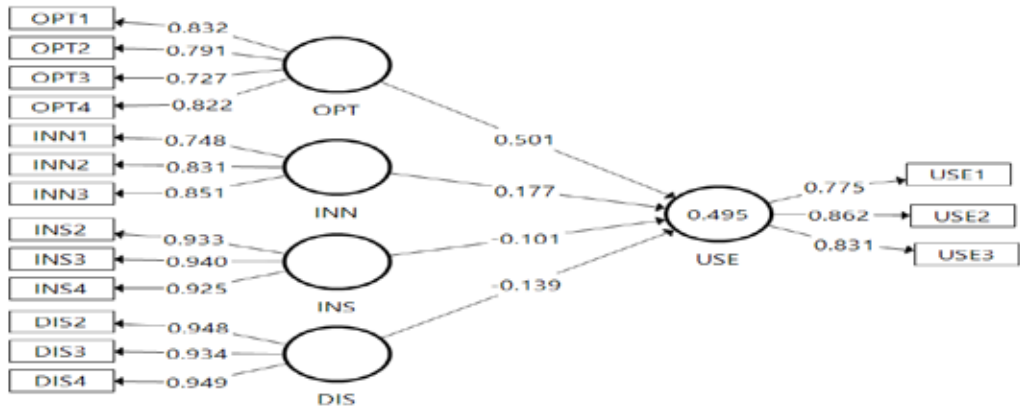
	Factors	1	2	3	4	5
		DIS	INN	INS	OPT	USE
1	DIS	0.944				
2	INN	-0.286	0.811			
3	INS	0.708	-0.219	0.933		
4	OPT	-0.226	0.517	-0.179	0.794	
5	USE	-0.375	0.498	-0.328	0.642	0.823

Note: Diagonals represent the square root of the average variance extracted while the other entries represent the correlations.

Key: OPT: optimism, INN: innovativeness, INS: insecurity, DIS: discomfort, USE: actual usage

4.3 Structural model assessment

The structural model can be tested by computing beta (?), R^2 , and the corresponding t-values via a bootstrapping procedure with a resample of 5,000 (Hair, Hult, Ringle, & Sarstedt, 2017).



Key: OPT: optimism, INN: innovativeness, INS: insecurity, DIS: discomfort, USE: actual usage

Figure 2: PLS algorithm results

Figure 2 and Table 3 depict the structural model assessment, showing the results of the hypothesis tests, with 4 out of the 4 hypotheses are supported. Optimism and innovativeness have a positive influence on actual usage. Hence, H1 and H2 are accepted with ($\beta = 0.501$, $t = 9.852$, $p < 0.001$) and ($\beta = 0.177$, $t = 3.429$, $p < 0.001$) respectively. Insecurity and discomfort have a negative influence on actual usage. Hence, H3 and H4 are accepted with ($\beta = -0.101$, $t = 1.803$, $p < 0.05$) and ($\beta = -0.139$, $t = 2.492$, $p < 0.01$) respectively. The values of R^2 have an acceptable level of explanatory power, indicating a substantial model (Cohen, 1988; Chin, 1998).

Table 3: Structural path analysis result

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	Decision	R^2
H1	OPT→USE	0.501	0.051	9.852	0.000	Supported	0.50
H2	INN→USE	0.177	0.052	3.429	0.000	Supported	
H3	INS→USE	-0.101	0.056	1.803	0.036	Supported	
H4	DIS→USE	-0.139	0.056	2.492	0.006	Supported	

Key: OPT: optimism, INN: innovativeness, INS: insecurity, DIS: discomfort, USE: actual usage

5. Discussion and conclusion

The research discovered that optimism parameter has an affirmative effect on the Actual usage of open distance learning within the public universities in Nepal. This result is supported by earlier studies [49], [50]. It can be justified by the fact that more positivity is useful for enhancements in inspiring the organisation to use few resources on actual usage of open distance learning within the public universities in Nepal to get equipped with the most recent technology for competitive advantage.

Similarly, the innovation certainly affects actual usage of open distance learning within the public universities in Nepal, and it was supported by the earlier studies [50]-[52]. This result is explained by the fact that increase assisting educational for turning to the big data system for supporting process available for providing most of the necessary help and resources to enable people to actual usage of open distance learning

Moreover, the discomfort factor was discovered to have an optimistic effect on Actual usage of open distance learning within the public universities in Nepal, and this result is backed up by earlier studies [52]. This outcome can be justified on the basis of the reality that it is uncomfortable when there is trouble related to the e-learning technology while it is being watched by the people and also when that application is not easy to use. Certain conclusive results are difficult to comprehend.

At last, the factor of insecurity was proved to have an affirmative effect on actual usage of open distance learning within the public universities in Nepal, and this result is supported by the earlier research [53]-[55]. The justification for this result can be given by the fact that the constructed inputs raise insecurity and decrease the self confidence in the use of big data system by having validations and security concerns.

7. Implications, limitations and future directions

The theory of the readiness technology (TRD) has played a vital role in understanding what affects the acceptance and adoption of different types of technology applications of big data as a main part of e-learning conization successes. This work successfully validates TRD in a new context, namely, in the Actual usage of open distance learning within the public universities in Nepal.

This study has inferences for better understanding of the relations among the different significant aspects concerned with Actual usage of open distance learning within the public universities in Nepal. The findings should be relevant to researchers, policy makers, and industry players. Thus, the Nepal education agencies and policy makers of the government are directed to integrate the adoption of E-learning technology. These positive opinions are also documented in the literature [56]. This research is limited to only a single public sector e-learning organisation of Nepal, and so its findings should be considered with caution. There is little doubt that such an engagement will be helpful in the betterment of the information delivery in an innovative manner and adapt to new areas in getting many visitors [57].

8. Conclusion

Actual usage of open distance learning within the public universities in Nepal is an important topic in offering a highly competitive advantage, specialty, in contemporary organizations. This study has inferences for better understanding of the relations among the different significant aspects concerned with the e-learning technology adoption in a public education organisation. The findings should be relevant to researchers, policy makers, and industry players. Thus, the actual usage of open distance learning within the public universities in Nepal and related agencies and policy makers of the government are directed to integrate the adoption of e-learning technology into their operational procedures and so its findings should be considered with caution. There is little doubt that such an engagement will be helpful in the betterment of the information delivery in an innovative manner and adapt to new areas in getting many visitors.

Appendix A

Instrument for variables

Factor	Code	Items
Actual Usage	USE 1	I regularly use the E-learning
	USE 2	I prefer the learning through the electronic devices
	USE 3	I promote the E-learning to my colleagues
Optimism	OPT 1	E-learning contribute to a better quality of education
	OPT 2	E-learning gives me more freedom of mobility
	OPT 3	E-learning gives people more control over their study daily lives
	OPT4	E-learning makes me more productive in my education life
Innovation	INN 1	In general, I am among the first in my circle of friends to acquire e-learning when it appears
	INN 2	I can usually figure out new high-tech products and services without help from others
	INN 3	I keep up with the latest technological developments in my areas of interest
Insecurity	INS 1	People are too dependent on e-learning to do things for them
	INS 2	Too much e-learning distracts students to a point that is harmful
	INS 3	E-learning lowers the quality of relationships by reducing personal interaction
	INS 4	I do not feel confident doing e-learning with a university that can only be reached online.
Discomfort	DIS 1	When I get technical support from my university of e-learning, I sometimes feel as if I am being taken advantage of by someone who knows more than I do.
	DIS 2	Technical support lines are not helpful because they do not explain things in terms I understand.
	DIS 3	Sometimes, I think that technology systems are not designed for use by ordinary people.
	DIS 4	There is no such thing as a manual for e-learning that's written in plain language.

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Causes and Consequences of Vulture Population Decline Worldwide

A Case Study of Jatayu (Vulture) Restaurant of Nepal

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Abstract

The purpose of this study is to focusing on vulture conservation, Vulture population status of critically endangered vulture. Jatayu Restaurant not for the dinner but an environment for beauty of nature, for the home of those species which are on the verge of endangered, for the shelter of vulture, a tertiary consumer. The concept of conservation of those endangered species are interlink directly to the human life, life of those species and the resources dependent on those species. Being a part of the eco-system the rational human society has the foremost role to sustain and balance the eco system. Vulture, being a part of eco system has a right to live and its our essence to sustain those species for our future. Vulture, as tertiary consumer has a important level on balancing ecological pyramid. Conservation is in the hand of humans. Only human society can flourish that vulture livelihood. Destruction of the habitat for vulture can deteriorate the balanced food web. The cycle of effect on human population and human concern to vulture has major impact on human vulture relationship. Vulture human relationship is not a well defined term. But it is a established concern to visualize. Humans are the saviour of the eco system. The human society has role to maintain the feeding, habitat and concern to vulture's population.

Keywords

White Rumped, monitoring, diclofenac, community, awareness, vulture, conservation tourism, technology, modern, traditional , scavenger

Introduction

Nepal is a landlocked country possessing diverse scenario of natural piety. Flora and fauna of the country not only fascinates the tourists but also enriches our glory and identity in the world. Heavenly pleasure of bio-diversity and natural form of resources has qualified the country to get reputed position in globe of the world. Identity of diverse bio-composition and prosperity of natural grandeur of our country derives any viewer to the path of nostalgic attachment to natural heritage.

The spot, Jatayu Restaurant is well facilitated with road transportation facility. East west highway (Mahindra highway) passes through the nearby area of the spot. The designated Kawasoti Municipality is enriched with geographical diversities cultural diversities ,caste diversities, religious richness ,hill shrines, verdant forest, water bodies ,aquatic animal diversities. (Chaudhary etal. 2011). The spot is near the rich natural heritage of

Chitwan National Park and Piety of Narayani River with its religious importance. [1,3]

Pithauli a village in Nawalparasi district in southern Nepal, is being frequently visited by a large number of tourist. This attraction of Jatayu Restaurant not a dinner but a feeding center for vultures. The Restaurant is established in Namuna community forest to preserve endangered species of vulture specially the white rumped and slender billed vulture. As Nawalparasi content seven of the nine species of vulture in the world setting of the Restaurant. The Restaurant has made it easier for conservation to monitor the birds and their activities. The vulture are feed uncontaminated cattle carcasses. Vulture being endangered species and tertiary consumer of food chain has direct impact on eco system. How a consumer plays a role to develop a food chain/web to establish a existence of living is a fact to conceptualize. Likewise the relationship between the eco system and survival of the species one so conjoined that consumer

can break the hierarchy of livelihood. Conservation of those consumer are essential to human race for the living of their fore coming generations. Besides, the essence the human rationality has developed the concept to conserve the species, those territory consumers as such different projects has been initiated in the western countries. Being the developing nation the concept has been adapted for the first in Nepal with the Asia continent. The concept of vulture conservation as Jatayu Restaurant has been a first implicated in Nepal within Asia in Pithauli village. These programme has been promoted by the natural habitat and successful community forest project in Nepal. Nepal as such has the Large Variety of animal species and diversity of geography with in limited territory. Jatayu Restaurant has been working for vulture conservation since 17 August 2007. Vulture are birds as they have large size then normal birds. Critical endangered white rumped vulture monitoring was conducted in Nawalparasi district in the winter of 2017. The main objectives of this study was to identify or to monitor the nest of white rumped vulture after monitoring the nest the more information about the vultures. Restricted pesticides were not found in this area. Diclofenac was not commonly used veterinary drug in the treatment of livestock. Carcasses disposal practice also very good in the study area. (Government of Nepal 2009, Bowden 2011).The local people of that area, they also support his kind of vulture conservation programme. White Rumped Vulture richness found in this area is due to availability of food. The edge of Narayani River and sustiable environment for vultures. The Local people of that area also support the conservation programme.

(Subedi 2009). The IUCN currently listed four species are critically Endangered: long billed , slender billed, white rumped, Red headed. Another, the Egyptian Vulture *Neophron peronopterus*, is classified as Endangered (Bird Life International 2010, Global Raptor Information network 2011 a, 2011b).

Pithauli Jatayu (Vulture) Restaurant

When we travelled from Kathmandu on the main highway turning off at the town of Kawasoti in Nawalparasi district just beyond the western edge of Chitwan National Park. Here we visited the Pithauli restaurant on the outskirts of the village of Laukani (Subedi 2009). This is the first community- managed vulture feeding station (and vulture information center) in the world, developed with funds from the United Nations Development Programme/ GEF / Small Grants Programme , the international Trust for Nature Conservation and the RSPB . When Pithauli was first established in August 2007, there were fewer than 20 nests of White- rumped Vultures in the area , but this number steadily increased to more than 70 in 2011. From the well- constructed hide we found 500 mm lenses (and longer) to be best for photographing vultures at a carcass. The light was excellent. In the immediate area of the hide , we identified (using Rasmussen et al. 2001) and photographed two Indian Vultures (Plates 8&9) and had wonderful views of vultures in flight,as

well as Lesser Adjutant *Leptoptilos javanicus*. Afterwards, on a walk with a guide through the nearby forest and fields of the buffer zone of the National park , we found tracks of the Greater One- horned Rhino *Rhinoceros unicornis*



and observed raptors such as Peregrine Falcon *Falco peregrinus calidus*, Shikra *Accipiter badius* and Oriental Honey-buzzard *Pernis ptilorhynchus* in flight. D.B. Chaudhary is the coordinator at this site.

Table 1 Status of vulture in Indian sub-continent.

S.n	Species	Range countries	Resident/ Migratory	Conservation status
1.	White-rumped vulture	Nep, Ind, Pak, Ban	Resident breeder	Critically Endangered
2.	Slender-billed vulture	Nep, Ind, Ban	Resident breeder	Critically Endangered
3.	Long billed vulture	Ind, Pak	Resident breeder	Critically Endangered
4.	Himalayan griffon vulture	Nep, Ind,Pak	Resident breeder	unspecified
5.	Eurasian griffon vulture	Nep, Ind,Pa	Winter visitor	unspecified
6.	Red-headed vulture	Nep, Ind,	Resident breeder	Critically Endangered
7.	Egyptian vulture	Nep, Ind,Pak	Resident breeder	Endangered
8.	Cinerious vulture	Nep, Ind,Pak	Winter visitor	Near Threatened
9.	Lammergeir	Nep, Ind,Pak	Resident breeder	Least concerned

(Nep=Nepal, Ind=India, Pak=Pakistan, Ban=Bangladesh)

(IUCN,2009 and DNPWC/MoFSC/GoN,2009)

Table 2. Status of vultures in Nawalparasi (Pithauli Jatayu Restaurant)

S.n	Species	Range countries	Resident/ Migratory	Conservation status
1.	White-rumped vulture (Dangar Giddha)	Nep, Ind, Pak, Ban	Resident breeder	Critically Endangered
2.	Slender-billed vulture (Sano Khairo Giddha)	Nep, Ind, Ban	Resident breeder	Critically Endangered
3.	Himalayan griffon vulture (Himalayan Giddha)	Nep, Ind,Pak	Resident breeder	unspecified
4.	Red-headed Vulture(Sun Giddha)	Nep, Ind,	Resident breeder	Critically Endangered
5.	Egyptian Vulture(Seto Giddha)	Nep, Ind,Pak	Resident breeder	Endangered
6.	Cinerious Vulture(Raj Giddha)	Nep, Ind,Pak	Winter visitor	Near Threatened
7.	Eurasian griffon vulture(Khairo Giddha)	Nep, Ind,Pa	Winter visitor	unspecified

(Nep=Nepal, Ind=India, Pak=Pakistan, Ban=Bangladesh)

(IUCN,2009 and DNPWC/MoFSC/GoN,2009)

Source: Yam bahadur Nepali, DB Chaudhary, Ishwori Chaudhary, Kebab Chaudhary (BCN Nepal) Pithauli Jatayu Restaurant (Nawalparasi).

White rumped vultures and slender billed vultures are resident breeders of lowland Nepal. In my study also focused this two kind of critically endangered vultures which was found in Pithauli Jatayu Restaurant Nawalparasi.



The safe feeding site (Jatayu Restaurant) has been implemented successfully in six sites in Nepal.

- A. Pithauli and Kawasoti VDC of Nawalparasi (Kawasoti municipality, Nawalparasi)
- B. Gaidahwa lake Lumbini, Rupendehi.
- C. Lalmatiy a VDC of Dang .
- D. Bijauri VDC of Dang.
- E. Samaiji community forest of Beli VDC, Kailali.
- F. Ghachok VDC of Kaski.

Sources (Bird conservation Nepal , 2010.)

Causes of declines

There are numerous reasons behind the global vulture decline. However, either poisoning or human persecution, or both, feature in the list of nearly every declining vulture population. We define poisoning as the unintentional killing or harming of vultures through consumption of contaminated carcasses or remains. Human persecution refers to the intentional killing or disturbance of vultures through actions such as shooting, harassment, and deliberate poisoning.

Vultures are particularly vulnerable to toxic substances due to a combination of foraging behaviors and life history traits found collectively only in vultures (23). First, most vultures are obligate scavengers that rely on eating dead animals or waste products; this may increase their likelihood of exposure to contaminants. Second, because vultures feed communally, Large numbers can be poisoned at a single carcass. Finally, vultures are very long lived and at a high trophic level , which increases

their vulnerability to bioaccumulation. Bioaccumulation may have sublethal effects on reproductive success, behaviour, immune response , and Physiology (24).

The deliberate poisoning by humans of carnivores, which kills scavengers as well as the intended victims , is likely the most widespread cause of vulture poisoning. Carnivore poisoning continues to be common ,especially in Europe and Africa(65-75). In Europe, poisoning is used to kill predators of game animals (e.g., rabbits, pheasants, and partridges) because hunters believe carnivores such as foxes and mongooses reduce their hunting success (16). In both Europe and Africa, poisoning is used to “ protect” livestock from predators. In Europe , it is regarded as the first option to deter carnivores from attacking Livestock, while in Africa poisoning is largely used to avenge the killing of livestock (D. Ogada, pers. obs (16).

Consequences of declines

Vultures are declining there have been surprisingly few studies about the ecological consequences of the widespread disappearance of these scavenging birds(10). Communities facultative scavengers are highly structured and complex. Birds contribute most to this structure because they are the most specialized scavengers(10).

In a polish forest , well- adapted scavengers such as ravens and foxes were nearly ubiquitous at carcasses, whereas rare or sporadic scavengers associated with the main scavenger species and did not scavenge randomly, but rather on those carcasses were carrion specialists were present (10). As carrion specialists, the absence of vultures from carcasses may affect the community composition of scavengers at carcasses , which could alter scavenging rates for individual species .

In Localized regions where vultures are functionally extinct, such as in India, the absence of vultures at carcasses appears to have driven a rapid increase in the abundance of opportunistic species such as feral dogs and rats (*Rattus rattus*) (3,4). Vulture declines have already had socioeconomic and cultural impacts in South Asia ,where they hold important social significance. Amongst the Zoroastrian-practicing Parsi community in India , who believe that fire , water , air and earth are pure elements that need to be preserved, the dead are Laid in “ Towers of Silence”. Built on hilltops or low mountains, these circular pillars of stone enclose corpses that are left in the open to be disposed of by scavengers, principally vultures. (11) This ancient custom , also known as sky burial and similarly practiced by Tibetan Buddhists, has come to an

abrupt end in the last decade due to the collapse of vulture populations in the region. The Parsi community has unsuccessfully turned to solar reflectors in the hopes of hastening decomposition.(12) Economic consequences of vulture declines include increased costs to human health. Estimates of the human health costs of the loss of vultures and subsequent increases in dogs and rabies are about \$1.5 billion annually in India.(13) In Nepal The Sanskrit name for vulture is Jatayu. Nepali people call them gidda or Kuchikar (bloom).

The economic benefits of conserving vultures were estimated at \$ 6.9 million ,and interviews in communities with in Important Birds Areas showed they were considered significantly beneficial to humans.(14) in Uganda ,Hooded vulture consume primarily internal organs from diseased animals thrown from abbatirs, thereby saving local collection the expense of a more sophisticated system of collection and disposal of refuse.(15)

Tourism

Tourism industry is mainly based on bio-diversity. Tourist visit those places which is of new kind and is outstanding in natural diversity piety. Local people can be facelifted by economic growth on the base of flourishing tourism industry. Tourism industry can be made a source of flourishing tourism industry. Tourism industry can be made a sources of income and employment to local ethics thus diversity of conservational practise uplift the tourism promotion. Jatayu Restaurant as a feeding centre for vulture is only one of kind in Asia. IT has separate identity and glory. The curiosity on vulture can be solved by conservational practise at ‘Jatayu Restaurant’. Feeding Vulture Campaign has seem to be successful to increase vulture population to double at two year’s span of time. Conservation can be publicized to recognize spot identity and country prestige in world which ultimately. Leads to tourism increment. Tourism can be attracted emotionally with natural diversification and biodiversity of endangered vulture population feeding at Jatayu Restaurant. The Restaurant really provides avalanche of pleasure to viewer through its natural grandeur.[1,2]

Awareness, participation and action role

Conscious local people can understand on physical and physiological merits of vulture conservation. Participation in conservation can benefit the local area from different

aspects. The advantages from the practise is mainly for local people which promote their living standard through tourism economy .participation to sustain and develop conservational practise prioritises local ethics. .The upgrading of conservation is upgrading of local ethics. Vulture conservation can be best demonstrated to aware local ethics and country citizen on the need, importance and requirement of balanced ecology.

Every people want to expertise their roles on the leadership for environment protection. Mainly local ethics wants to play multiple actor figure for environment preservation. Therefore, active participation as action role increasing participants for local community rescue vulture decline and helps in stepping up of phenomenon of creating sound bio-diversity.

Identity of indigenous culture

Indigenous Culture has a particular identity which notify the introduction to describe areal community. Indigenous Culture is relative term derived from ancestors featuring specialized identity of indigenous conscious participatory Practise.

Ethical promotion

The outcome of conservation running in defined area is the direct outcome of local people in habituating there Definite merits refers to local inhabitants then to other linking those ethics. Promotion of ethical economy, ethical awareness scholarship, ethical identity, ethical tourism and ethical natural stamina and ecosystem can be through these conservation practise on end angered species. Which is best demonstrated by vulture feeding restaurant. Thus ethical consideration for endangered vulture conservation is feme most on maintaining bio – composition which can be successful via, participatory support and conscious effort of local ethics being aware on forthcoming threats. [18]

Vultures at Jatayu Restaurant

Vultures is one of bird which feeds upon dead flesh through scavenger. It is also called ‘scavenger king’. It promotes sanitary environment through reduction of population as it is natural cleaner of foul emission of small from cattle carcasses. Vultures is often called scavenger of nature for its feeding habit and related aspects.[22,23]

Vultures at Jatayu Restaurant

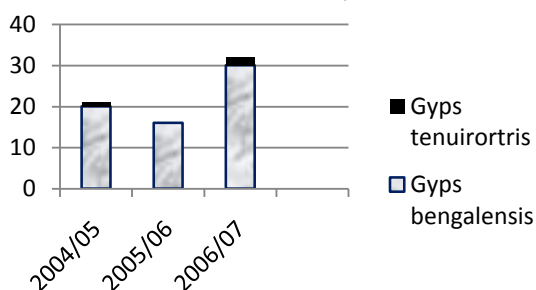
The condition and population of different vultures found in Jatayu Restaurant was taken from field source via Restaurant Staff and is presented table below:

Table 3: Species of vultures available in Jatayu Restaurant

Name of vultures	Available	Population (Range)
1. Nephron percropteus (Egyptian Vulture)	Found (all around year)	4
2. Gyps bengalensis (White ramped vulture)	Found (all around year)	170-210
3. Gyps tenuiortris (Slender billed vulture)	Found (all around year)	3
4. Gyps humalayensis (Hlmilayan Griffon vulture)	Found in winter season.	115
5. Gyps fulvus (Eurasian Griffon vulture)	Found all around year	2
6. Aegypius monachus (Cinerous vulture)	Found (all around year)	3
7. Sarcogyps cavus (Red headed vulture)	Found (all around year)	4

Source: Filed Survey 2017

Count of nest of vultures in Jatayu Restaurant area;



Source: Record 2016, Jatayu restaurant

Fig.1 Count of vultures in different year.

Literature review

The literature review is one of the most important parts of research. It helps a researcher become familiarized with the existing theories, concepts and ideas pertinent to the subject matter, which might also be helpful to a researcher to develop new theories, concept and ideas. The literature view dose not intent mere to collect information on the subject matters under study. Review of different forms of literature was done for the following objectives.

1. To collect background knowledge on the research topic
2. To apply appropriate methods of research design.
3. To construct a theoretical frame work.
4. To know how other researchers analysed theissues and structured and complied the reports.

5. To identify data sources used by other researcher. In this light the researcher has collected many books, reports journals, newspaper cutting and data from various sources, and consulted with due consideration so that the issues and ideas of study could be effectively presented they are listed in the bibliography as listed in the report. [4]

Literature on bio-diversity and conservation of wildlife.

Bennett, on “ecosystem, Resources conservation and Anthropological Research” has described human ecology as human behavior and had presented essays in environment and development .F.Berkes and M.T. fervor on “introduction and overview” has discussed on common property resources and has mentioned about ecology and community basedsustainable development has written about forest from culture,environment and development .

Ghimire. and Pimbert on their book “Social change and conservation “ had highlighted on environmental politics and compacts of national parks and protected areas F. Berkesi on his book “CO-operation Development “ has discussed on relation between conservation and cultural values. B.S. Brush have presented information on Anthropology and the conservation of bio-diversity o their “Annual Review of Anthropology.”[9,16,19,20]

Literature on vulture conservation practice

Many species threatened by loss of habitat have been surveyed. This includes the cape vulture and Teita falcon in South Africa and African fish eagle. These researches are presented by the peregrine fund Organization (may 2009) Indian vultures, a vulnerable species and diclofenac residues as the cause of vulture population decline in Pakistan in July 2009 (Pamela C. Rasmussen)

Canarjan Egyptian vulture generally nest on clefts and caves are made the subjects of researches by life Projects in Spain (Dec. 2008) and by Gangoso Laura (2005) . Texas State forensic Research on may 2006 researched on vulture . It can grow to be 32 inches long. Unlike other vulture ,it is dark in colour . Research of king vulture Diane Jukofsy (2002)

Literature review on vulture conservation in Nepal

The review of literature on Population status of critically endangered vulture and breeding success of two species of vulture white ramped vulture and community management Pithauli Jatayu Restaurant which was first vulture Restaurant in the world decline of vulture basically discussed on dramatic wild life story which receive little public attention is the decline in vulture population globally.

The statics are quite startling, the impact enormous. It is not only the wildlife ecosystem that suffers from this decline but also human health in Nepal the population decline has also been recorded at over 90%. The worst killer of vulture has been the poisoning of animal carcasses both intentionally and unintentionally. The main cause of vulture decline is the using of Diclofenac in treating cattle which cause kidney failure. (IUCN 2010)

Research methodology

This section has discussed a set of methods to be employed to the research objectives it contains nature of data research design selection of the samples data collection tools, data analysis and interpretation. for the purpose study expository research design applied to explore on the practice of vulture conservation in the area. Analytical research design used to analyze the impact of conservation in the lives of local people and also used to analyzed the status of vulture and breeding success of two species of vulture.[5,15,17]

Selection of the study area

Jatayu Restaurant of Nawalparasi Pithauli is of first kind and unique in Asia in conservation of vulture.

Jatayu Restaurant encompasses the area of Kawasoti Municipality of Nawalparasi District of Nepal. Jatayu Restaurant of Nawalparasi.[6,13]

Nature and source of data

Primary data

Primary as well as secondary data have been widely used in the study. Primary data collection was done from study area with the help of interaction, organization conducting the program and management committee along with local people.[7,14]

Secondary data

The secondary data was collected from various brochures and reports related to vulture conservation program. Similarly various news articles, websites published by various sources related to study was also been adequately used for relevant information. From the study, both qualitative as well as quantitative data was collected. [8,12]

Research questions

1. Why is the conservation of Vulture important for the overall conservation and people's life ways in Nepal?
2. What strategies, campaigns and activities have been initiated in order to raise awareness on Vulture Conservation among the local people
3. How is the tourism business responding to the conservation program?
4. What is the impact of Vulture conservation on the livelihood strategies of the local people?

Research objectives

General objectives

1. The general objectives of the study is to explore practice of vulture conservation in the area and analyze its impact on Local people's life ways and the promotion of tourism through the conservation in Nepal.

Specific objectives

1. To explore on the participation of local people to the practice of Vulture conservation at Jatayu restaurant.
2. To find out how vulture conservation in the area is being practiced.
3. To analyze the impact of vulture conservation on the livelihood of people and in the promotion of tourism in Nepal

Summary

The study entitled “Cause and Consequence of vulture decline worldwide. Restaurant in monitoring of Critically endangered White rumped vulture conservation of Nepal and community based tourism: Challenges and opportunities” of community management Pithauli Jatayu Restaurant , Nepal was carried out in local area around ‘Jatayu Restaurant’ in Nawalparasi namely Kawasoti municipality Impact on local inhabitant by Jatayu Restaurant, conservation of vultures species, biodiversity, tourism, local culture, local opinion to Jatayu Restaurant was studied to get theoretical and statistical results.

Primary and secondary data, both are presented. Question discussion, and interaction were done during the course of study. Sufficient literatures and documents were studied for research. Local people were mainly focused in the study along with practioners, scholars institutions related, researchers and tourists. The survey was done among 50 respondent (100%respondent),which were divided into five groups and datas were collected. The whole study findings can be summarized into the following main points listed below:

- Jatayu Restaurant has promoted the habitat for vultures conservation through god shelter and safe food.
- Vultures population was identified and found that probable environment has been created by Restaurant to ensure their sustainability at Restaurant vicinity (premises).
- Local view of inhabitant were analyzed to get field result for multi mensional aspect of Jatayu Restaurant.
- Jatayu Restaurant promotion through Restaurant effort was studied.
- Income generation of local people through Restaurant effort was studied.
- Procedure to be taken to best manage the Jatayu Restaurant was developed. 90% respondent supported to continue community based management.
- Skill orientation programmer, trainings and seminar package needed to launched was reported in among 60% respondent .
- Local effort and participation was found was found satisfactory for the Jatayu Restaurant conductions during study.

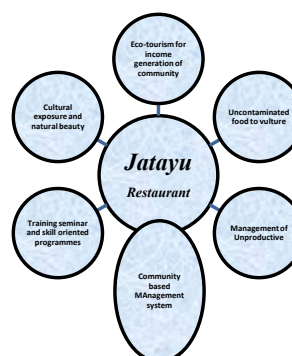
- Gender discrimination to be understood while research was done, analyzing the participation of female in the campaign.
- Additional packages and its application were know form 70% local inhabitants demand.
- Indigenous Tharu culture of the study area was studied.
- Cattle Rescue and availability of food for vultures was understood.
- Community practice to be continued was concluded through study.
- Eco tourism for local people income generation was got understood and analyzed.
- Publicity to be increased at national to international level more and more was surveyed and presented statistically. 35 respondents (70%) reported to increase publicity to promote tourism.
- Use of diclofenac and its discouragement was high lighted in the study.
- Evil practice of wildlife hunting was targeted to be discouraged and revolted via study.
- Local people b interaction was highly facilitated in the study.

Conclusion

Jatayu Restaurant in Nawalparasi has attempted a good practice on vultures conservation. The population of the vultures has been incased though the project in short spon of time. Vultures being natural scavenger cannot be imparted form our living world. But in these days due to use of Diclofenac to cure livestock has declined these birds to be critically endangered. The way of their increment is their feeding of uncontaminated food free form Diclofenac poisoning.

The whole study can be concluded form the following figure

Conclusion of the study



Field Survey 2017

Conservation practice at Jatayu Restaurant

Uncontaminated food

Natural scavengers ‘vultures’ are detritivores in feeding habitual Jatayu Restaurant has been providing, uncontaminated cattle carcasses free from ‘Diclofenac’ Which has been a main cause for vultures’ decline to critical endangeredness.

Management of unproductive cattle

Unproductive cattle are a burden for farmers to rear and care. These cattle are kept at Cow Rescue centre in Jatayu Restaurant paying some money to cattle owners. These cattle due to unproductivity are left in the society and after their death cause pollution. At Jatayu Restaurant these cattle are well managed and are fed to vultures after natural death. Cattle are given good care at Jatayu Restaurant.

Community based management

It is the ‘Restaurant’ feeding center for birds (vulture). It is the Community based management in Kawasoti Municipality (Pithauli) to provide safe food to vultures.

Eco-tourism for income generation

The Jatayu Restaurant has prioritized the effort to generate income of local community through flourishing of ecotourism. Natural beauty and vulture swoops down at meal time have been highlighted by Jatayu Restaurant for attracting tourists.

Benefit to local people

Cultural exposure and additional programmes

Jatayu Restaurant has exposed the additional view of indigenous culture. Tharu culture can be viewed and tasted in the community around the Restaurant. It has also promoted the additional benefit to local people through programmes, seminars and skill orientation trainings.

Recommendation

To create the probable environment to save the vultures’ habitat following recommendation are to be functionalized via Jatayu Restaurant.

Table 4: Local people further recommendation

Groups	Improve activity on conservation and further good management.		More package programmers and training offering		More publicity via media for tourism promotion.		Total	
	n	%	n	%	N	%	n	%
I	2	4	3	6	5	10	10	20
II	1	2	3	6	6	12	10	20
III	2	4	6	12	2	4	10	20
IV	1	2	2	4	7	14	10	20
V	1	2	4	8	7	14	10	20
Total	7	14	18	36	25	5	50	

Source: Field survey 2018

50% of the respondent recommended to increase publicity via media

For tourism promotion, increase participation while 36% recommended for moral package programmers and trainings. Test 14% of the respondent were in favor to recommend activity on conservation and good management.

Local view should be analysed

Local participation should be increased more and through analyzing local view and perspective to safeguard the ‘Jatayu Restaurant’ sustainability.

Wildlife destruction use of ‘Diclofenac’ should be discouraged:

Jatayu Restaurant must be an example for discouragement of wildlife destruction. It can arise a consciousness for student about importance of wildlife through its practice. For its continuity ‘Diclofenac’ should be discouraged. As it is

banned also, some may use illegally so there should be cross check in veterinaries aiming to provide safe food to vultures.

Risk of future and provision of safe food should be taken under consideration:-

There may be future risk and threats in running the project. This risk should be detected and solution should be taken for eradicating problems and future hard situation. Safe food should be continuously provided to vultures for their survival reducing the endangeredness.

Management system, package programme, female enrollment and publicity should be strengthened:-

Management should maintain efficiency to conduct Project package additional programmes for skill orientation should be launched with increasing female enrollment in the programmes and project. The foremost considerable recommendation is to increase media to increase tourism and to renown the outstanding practice of Restaurant in vultures conservation through safe feeding, monitoring population, food habits and breeding.

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Effect of Compensation on Employees' Motivation to Overtime

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Abstract

This study is conducted to evaluate compensation factors and its impact on employee's motivation towards overtime in various sector organizations in Nepal. Furthermore, this study investigates how motivation for overtime work is influenced by non-compensation, monetary compensation, or different non-monetary compensation types respectively in the context of Nepalese organizations. Hypotheses are tested through the questionnaires distributed to individual employees at the public and private sector organizations in Nepal. The data was collected from 235 employees to conduct the research using convenience sampling technique. The collected data are analyzed by using SPSS 18 software to have deeper understanding of their behaviors. The result reveals that there is significant influence of monetary compensation, extra holidays/leaves, gifts compensation and promotion/recognition on motivation to overtime among employees. This result can be useful to the organizations operating in Kathmandu valley to ensure higher level of productivity and higher level of organizational performance through motivation to overtime.

Keywords

Compensation, motivation, monetary compensation, non-monetary compensation

Introduction

People are accustomed to receiving compensation that equals the value of what they gave. Economists say that all goods have a price. One goes to a supermarket and all prices are marked in front of the goods. Even if one is just wasting time watching movies, the time wasted also has a price: there is an opportunity cost for doing other things instead of watching a movie. However, in real life, the value of an item differs on an individual level and it might not get an economy-based price.

In a working environment, employers compensate employees with money in exchange for their work effort. We cannot deny that the main reason an employee is involved in a contractual working relationship is that the monetary compensation provided by the employer can at least cover his living costs. However, social benefit sometimes is given in addition to monetary compensation: the location of the office is close to the employee's residence, a company car is made available, career advancement opportunities, the chance to develop skills and abilities, or having a nice team to work with. Dur et al. (2009) concluded that people's effort conduction may be influenced by reciprocal and altruism factors (in social market), besides monetary rewards. In the workplace, it is very common for managers to use monetary and

non-monetary compensation¹ to motivate employees to work on their behalf. The contract hour usually involves monetary compensation, whereas overtime work period compensation can be paid by monetary compensation, non-monetary compensation, or even in some companies, there is no compensation for overtime in the real world. Then, exclusive of the contractual work inside the contract list, how employees will behave during the overtime work period seems to reflect the reality of employee's discrete marginal decision making in the work place.

Compensation is what employees receive in return for what they contribute to the organization. Though salary and wages are the primary element of compensation, the dimension of compensation is not limited to just salary and wages. In fact, compensation incorporates a wide range of elements to provide to the employees for devoting their time, skills and effort to the organization. Better compensation can be a technique used to attract better employees as well as to curb the turnover of the employees and retain them.

In addition, Hardré et al. (2006) states that flexibility gives power to motivation. Beside non-monetary compensations discussed above, holidays or a few hours off are a benefit of a flexible control system. In this thesis, flexible work hours and flexible work place are both types of non-monetary reward.

Kodz et al. (2003) stated that the overtime work status is caused by increased work pressure, an ever-expanding workload, the increase of underemployment, and reduction of working place limitation. They also mention that industrialized countries have more severe problems than any other countries. When considering overtime work, the most mentioned country is Japan, where many studies use it as an extreme case illustrating the relationship between overtime work and health problems. Essentially, in many Asian countries, employees work more than 60 hours per week (Amagasa et al. 2005, Iwasaki et al. 2006 & Uehata, 1991). Several studies mention that the side effects of overtime work include diminished satisfaction in work-life balance and poor psychological and physical health (Dembe et al. 2005; Sparks et al. 1997 & Hulst, 2003).

Research hypothesis

H1: Monetary compensation positively affects employees' motivation to do overtime work.

H2: Extra holiday/leave as compensation positively affects employees' motivation to do overtime work.

H3: Gift compensation (e.g. dinner, flower, coupon, etc.) positively affects employees' motivation to do overtime work.

H4: Other non-monetary compensation types (e.g. recognition, promotional opportunities) positively affect employees' motivation to do overtime work.

Theoretical framework

Literature review

Iwasaki et al. (2006) states that if considered to only include the fulltime employees, more than 12% of Japanese workforce work more than 60 hours per week, and can even be higher. In general, approximately 12% of the Japanese workforce work at least 60 hours per week and no less than 28% workers work less than 50 hours per week. In addition, if considered to only include the fulltime employees, these percentages can even be higher.

Jacobs and Gerson (2004), in the United States, approximately 25% of men and 11% women work more than 50 hours per week. According to the Fourth European Survey on Working Conditions (European Foundation for the Improvement of Living and Working Conditions, 2007), the proportion of European workforce that work on average 48 hours or more weekly amounts to 14%. In addition, males seem to work longer hours than females; 20% and 7% respectively. This correctly reflects the greater number of men in fulltime jobs, who are also

more likely to be employed in scientific and professional fields, which usually require longer working hours (E.g. management, scientific work, transportation, and hotel and restaurant work, etc.).

Despite the fact that the proportion of employees doing long hours work vary in different occupations and gender, it also varies among European countries as per the European Foundation for the Improvement of Living and Working Conditions, 2007. Statistically speaking, the highest proportion of those engaging in overtime work come from the eastern part of Europe particularly Poland and Romania, Greece, and Turkey, which average about 57% of employees working 48 hours per week.

European Foundation for the Improvement of Living and Working Conditions (2007) states that in the United Kingdom, the prevalence of long working hours which is defined in the European Foundation report defined as more than 48 hours, reached 14%, which equals the European Union average. On the other hand, the lowest proportion of those engaged in long working hours consist of Nordic countries and Western European countries, such as Denmark, Norway, Sweden, Finland, France, Luxembourg, and the Netherlands, which are less than 10%.

Golden and Altman (2008) also conclude that in Japanese organizations, overtime working has been considered a very important indicator for promotion structure. Therefore, these employees tend to do more overtime working despite the adverse influence on their health. Three main reasons explain why employees are willing to work overtime can be explained as:

Golden and Altman (2008) had explained the first reason that employees willing to work overtime are indicating their commitment to the organization. Employees have a direct or indirect intention that working overtime frequently can help them obtain more opportunities to gain promotion in the organization. Namely, to some extent, employees consider frequent overtime work a strategy to maximize their individual compensation through potential promotion.

According to Golden and Altman (2008), the second reason that, overtime work has been considered a signal that employees' lack some capabilities. Through frequent overtime work, some specific employees can hide their lack of capabilities, to some extent to prove their commitment to the organization.

Golden and Altman (2008) find there is a possible reason that explains why employees accept overtime work. These kinds of managers who remain in high positions associate more responsibility with more monetary compensation from long working hours as well as suffering peer pressure and looking for an emotional remission from family. In reality, American study results on work stress are directly linked to longer working hours among male employers, similar to the RENGO survey (2012) indicating the results with Japanese union workers. In addition, among Japanese companies, working overtime is a very important indication in the promotional system.

Johnson and Johnson (2003) have defined motivation as the degree to which individuals commit effort to achieve goals that they perceive as being meaningful and worthwhile. Motivation is inherently aimed at achieving goals as goals and motivations are the two sides of the same coin. Without motivation, goals cannot be achieved and without goals, the need of motivation becomes void.

Rakes and Dunn (2010) have viewed motivation as a process through which an individual's needs and desires are set into motion. Motivation is the reason for people's actions, desires, and needs. Motivation is also one's direction to behavior, or what causes a person to want to repeat a behavior. An individual is not motivated by another individual. Motivation comes from within the individual. Many prior studies indicate that monetary incentives are often used as a tool to motivate and improve performance (E.g. Atkinson, et al., 2001; Horngren, et al., 2000; Zimmerman, 2000). Money, as an external intervention, motivates people to behave in the rewarder's interest. Alternatively, Deci (1981) and Ryan (1985) introduce two types of motivation by orientation difference.

Amagasa et al. (2015), Iwasaki et al. (2006) and Uehata, (2001) have based their research in Japan in order to find out the relationship between overtime work and health problems. It was found that there is a positive correlation between overtime work and health problems. Several studies like of Dembe et al. (2015) mentioned in their study that the side effects of overtime work include diminished satisfaction in work-life balance and poor psychological and physical health.

Bonner and Sprinkle (2012) has studied the motivational aspect in terms of the effects of monetary incentives on effort and performance. The general hypothesis is that incentives lead to higher effort levels than when

no incentives are offered. On the other hand, many psychological studies suggest that monetary incentives may decrease employee effort levels and performance.

Methods

A causal-comparative research design seeks to find relationships between independent and dependent variables after an action or event has already occurred. The goal is to determine whether the independent variable affected the outcome, or dependent variable, by comparing two or more groups of individuals. There are similarities and differences between causal-comparative research, also referred to as ex post facto research, and both co relational and experimental research. This entry discusses these differences, as well as the benefits, process, limitations, and criticism of this type of research design.

A well structured questionnaire was designed to collect data from respondents. Convenience sampling was appropriate for this research because this technique is best way to reach to the respondents; similarly due to resource constraints- time and money. This sampling technique generally assumes a homogeneous population that means the members of the population poses similar characteristics. The software called Statistical Package for Social Science (SPSS) and Microsoft Excel was used to analyze and interpret the quantitative data.

A total of 250 self-administered questionnaires were distributed by assistance of friends working in various organizations. The final total number of responses returned were 235, however only 220 were usable as the balance of 15 questionnaires was rejected due to improper completion of the questionnaire. The sample includes the staffs working at entry level, mid-level and managerial level of different organizations. This software is commonly used by researchers and easily available in business settings. The reliability of scales is analyzed using Cronbach's alpha since Cronbach's alpha test is best used for multipoint-scale items and it is also the most popular test for inter-item consistency reliability.

Instrumentation

Data were collected using the self-administered questionnaire. Questionnaires included a set of written questions used in order to obtain and store necessary information by researcher during the research. Questions were designed to examine important variables for the study and were answered by respondents. There were mainly four different variables; types of compensation

experienced, monetary compensation, gift compensation, extra holidays/ leave compensation, promotion/ recognition compensation and motivation to overtime in the study. Forty items at 5 point rating scale (Likert Scale) ranging from "1" strongly disagree to "5" indicating strongly agree has been constructed to measure the impact of compensation as a tool for employee motivation to overtime.

Table 1: reliability test

Variable	Composite Reliability	VIF	Cronbach Alpha	Communality
MCP	0.85	2.23	0.73	0.74
EHL	0.79	3.56	0.75	0.75
GCP	0.83	2.72	0.88	0.83
POR	0.76	4.78	0.79	0.87
MTO	0.88	-	0.77	0.85

Table 1 reveals the reliability test. VIF factors have been identified to be less than 1 which means there is no multicollinearity among variables under investigation. The result reveals that the values of variance inflation factor are ranging from 2.23 to 4.78 which falls under ten, It means the data is free from the problem of multicollinearity. The values of cronbach's alpha also seemed to be greater than 0.7 which resembles that the data is reliable (Nunnally, 1984). Likewise, communality values have been found to be greater than 0.7 which is good for the research. The composite reliability values have found to be ranging from 0.74 to 0.85 which are excellent for the purpose of reliability. Thus, it can be concluded that the data is reliable for the purpose of under- taking research.

Table 2: Correlation analysis between independent variables and motivation to overtime

Variable	Mean	S.D	1	2	3	4	6
1. MCP	4.29	0.76	1.00				
2. EHL	4.19	0.71	0.27	1.00			
3. GCP	3.74	0.78	0.41	0.23	1.00		
4. POR	4.21	0.82	0.34	0.42	0.48	1.00	
5. MTO	4.27	0.89	0.31**	0.41**	0.32**	0.24*	1.00

(**)= Significance at 0.001; (*) = significance at 0.05; MCP =Monetary compensation, EHL = Extra holidays/leave, GCP= Gift compensation, POR = Promotion/Recognition, and MTO = Motivation to overtime

Table 2 describes about correlation matrix between variables under investigation. The correlation coefficient between motivation to overtime and monetary compensation is recorded to be 0.31 which is low positively correlated. The p value has found to be 0.000 which is less than 0.001 means that there is positive relation between motivation to overtime and monetary compensation. Hence, it can be concluded that monetary compensation motivates employees to work overtime. The correlation coefficient between motivation to overtime and extra holidays/leave is recorded to be 0.41 which is low positively correlated. The p value has found to be 0.000 which is less than 0.001 means that there is positive relation between motivation to overtime and extra holidays/leave. Hence, it can be concluded extra holidays/leave motivates employees to work overtime.

The correlation coefficient between motivation to overtime and gift compensation is recorded to be 0.32 which is positively correlated. The p value has found to be 0.000 which is less than 0.001 means that there is significant relation between motivation to overtime and gift compensation. Hence, it cannot be concluded that gift compensation motivates employees to work overtime.

The correlation coefficient between motivation to overtime and promotion/recognition is recorded to be 0.24 which is low positively correlated. The p value has found to be 0.02 which is less than 0.05 means that there is significant relation between motivation to overtime and promotion/recognition.

Table 3: Multiple regression analysis

Coefficients						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-.133	.265		-.504	.615
	1. MCP	.242	.074	.209	3.289	.001
	2. EHL	.273	.069	.243	3.964	.000
	3. GCP	.136	.061	.131	2.221	.027
	4. POR	.411	.077	.351	5.322	.000

(**)= Significance at 0.001; (*) = significance at 0.05; MCP = Monetary compensation, EHL = Extra holidays/leave, GCP= Gift compensation, POR = Promotion/Recognition, and MTO = Motivation to overtime

Table 3 describes about the multiple regression analysis. The result shows that monetary compensation (Beta = 0.242, $p < 0.01$) has its significant impact on motivation to overtime. Likewise, there is significant impact of extra holidays/leaves on motivation to overtime (Beta = 0.273, $p < 0.00$). There is significant influence of gifts compensation on motivation to overtime (Beta = 0.136, $p < 0.05$). Finally, the result advocates that there is a significant influence of promotion and recognition on motivation to overtime (Beta = 0.411, $p < 0.001$). Thus, it can be concluded that there is a significant impact of monetary compensation, extra holidays/leaves, gifts compensation and promotion/recognition on motivation to overtime.

Conclusion

This research analyzes how different types of compensation influence the motivation to work overtime. The results show that employees of different organizations are motivated in regards if they receive monetary or non-monetary compensation. Then, compared with monetary compensation and non-monetary compensation, people prefer to have non-monetary compensation when they put themselves into different scenarios. It means that employees believe non-monetary compensation can make them more motivated to work overtime. However, due to the data analysis on participants who engage in overtime, the employee-favored compensation type is not the most effective motivator in practice. The data shows that people who experience monetary compensation, gift compensation, extra holidays leave compensation and promotion/recognition compensation in overtime work have higher motivation than people who does not receive any types of compensation however; from the sample of taken, it is also found that most of the organizations does not provide any type of compensation for its employees for the overtime works.

A monetary compensation system leads to higher motivation in practice while, under a different scenario, people seem to think that non-monetary compensation leads to higher overtime work motivation. A possible reason is that non-monetary compensation, including holiday and advancement opportunity, makes people feel that the workplace is more like a social market than a monetary market. People's working intention is not purely for money but also for future achievement and wanting to have a good work-life balance. However, in reality, the organization compensation system is under a fixed rule to cover all people and does not distinguish between individual preferences. Hence, in practice, it is possible that the reward type the company offers is not the one the employee wants. Thus, monetary compensation is the second-best choice that can be converted into another benefit.

The result finds that there is significant influence of gifts compensation to motivation to overtime. Another possible reason is the "gift exchange in work place", which means that the employee wants to be cared for as a person in the workplace instead of being regarded as a machine with a task to perform. Such employees access the manager's intention by their actions. The altruistic manager pays more attention to employees and is rewarded with more work motivation and less turnover, even with a lower wage. However, a social benefit seems to depend more on a personality that allows people to feel that they are not receiving compensation for their contribution, but doing a favor for a friend. The data seems to explain that in daily practice, people want to find friendship and build good social relations with colleagues. Moreover, non-monetary reward systems for overtime work, in practice, fails to allow people to feel that are they are cared for as

a friend, but are more like compensation in exchange for effort. That is why people under a monetary compensation system in real life have a higher satisfaction.

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Educational Management; Nation's Necessity for Nepal

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Abstract

This paper examines the role and potential effects of vocational and technical educational programs on the development of Nepal. This is accomplished by first examining the dynamics of globalization upon and the economy of a least developed country. This includes how globalization may affect the local workforce and how new skill acquisition may be required to compete in the international market; thus creating local jobs and benefiting the local economy. Vocational and technical education is examined as a way to meet these needs. Furthermore, the traditional secondary educational system in Nepal is compared with technical and vocational educational programs. This includes both private and social internal rates of returns of vocational education. Lastly, this essay examines some of the challenges that will need to be overcome to successfully build-up a skilled and employable workforce, through technical and vocational education, necessary for the development of Nepal.

Keywords

Vocational and technical education, globalization, workforce, development

Introduction

Technical and vocational education programs can be of great advantage to the realities of an increasingly globalized country like Nepal. One cannot ignore the drastic impacts that technological innovation has had upon not only Nepal, but all the countries of the world. Nepal, like other nations, has felt the effects of the advances of communication, transportation, and other technologies. Although some fear it and others welcome it, globalization is an unavoidable reality of the 21st century. There are indeed many negative effects inherent with globalization such as the threat to traditional ways of life, but it also provides poor and developing countries with crucial opportunities to participate in the global economy—creating pathways towards increased trade, innovation, and employment. The advantages of globalization, when harnessed carefully and smartly, can help a least developed country like Nepal escape the snares of poverty (Dollar, 2005, p. 161).

Nepal, a country known for its cultural and natural beauty, has great potential to tap into the global market. With its geographical diversity and strategic location between the influential countries of India and China, Nepal should not have to rely on exporting workers and importing their remittances to support it. Instead, Nepal must

take advantage of globalization by welcoming foreign investment and developing its own capacity to innovate and trade. In order for this to become a sustainable, long-term, and successful reality and for Nepal to be a competitive player in the world, the country must grow in efficiency, become more innovative, and gain greater technological experience (Belbase & Grabowski, 1985, p. 515).

Vocational and technical education programs are crucial tools to overcome the challenges facing Nepal and can create a workforce that is attractive and competitive in the globalized world; a springboard towards growth, development, and poverty reduction. In addition to exploring the basic concepts of vocational and technical education and comparing them to traditional methods of education, this paper explores some models of training programs enacted in other areas of the world and view them in the context of Nepal. Lastly, the many practical and cultural challenges that remain hurdles to the successful development of these programs will be examined and potential solutions will be considered.

Globalization and growth

The influence of the West and the shrinking of the world is evident by simply observing the urban youth of Nepal. Those who were, not too long ago, consistently a decade

behind the times in terms of fashion and trends are now on the cutting edge—on par with any other modern society. But, globalization and outside influence goes far deeper than styles and trends, as people (especially youth) are exposed to new cultures and new perspectives, traditional ways of thinking and viewing the world begin to change (Yankuzo, 2014, p. 4). Furthermore, as people are exposed to new ideas and cultures, they are also exposed to new methods and techniques of accomplishing tasks.

In a traditional nation like Nepal, it can be seen as a great loss when a technique, which has been passed down for generations, is threatened by a new technology. Regardless if this technology results in an increase of efficiency and/or quality, change is difficult to swallow when the old ways of life are forced to make way for new ones.

Despite these complex social problems, globalization can be seen as a significant contributing factor towards the growth of a developing country. It would be unrealistic for a country like Nepal to expect higher GDP, higher employment and higher exports while refusing to participate in globalization (Kesimli, 2005,

p. 37). According to the International Monetary Fund, foreign direct investment in developing countries is motivated by an organization's ability to create long-term profit through production activities. The developing country will not only gain direct economic benefits (like income, employment, and other resources) but will gain through the “transferring of production technology, skills, and innovative capacity, and organizational and managerial practices” (Mallampally & Sauvart, 1999).

How then can Nepal be seen as an attractive investment to foreign investors? What will make Nepal competitive against the dozens of other developing countries seeking investments? Nepal's unstable government and poor infrastructure are a few of the obvious problems that make Nepal unattractive to investors. But, one cannot ignore the many advantages that the country has as well. For example, Nepal is strategically located between the two superpowers of India and China and has a very low cost of living. But, perhaps the greatest advantage of Nepal is the many positive attributes inherent within the Nepali people. Nepal's various indigenous and ethnic groups share a “strong commitment to productive labor, a high capacity for endurance, efficient cooperative organizational styles, and a high adaptive propensity at individual and social levels” (Bista, 1991, p. 2). Nepal's diverse population provides valuable resources that can

create and sustain great progress.

Due to the nature of the modern globalized world, whenever work can be transferred and done somewhere else, the work will go where it is the most cost-effective (Kesimli, 2005, p. 23). Cost-effectiveness does not simply mean production at the lowest cost of input (although that is indeed an extremely important factor), but it also means quality output at a low cost of production. Nepal may be attractive because of its low costs, but at the same time, an investor is likely to be dissuaded by inefficient, unreliable, out-dated and low-quality manufacturing techniques. This is especially true for young start-up organizations that need local workers who can provide innovation and skills beyond basic assembly-line style production.

To create a skilled workforce, to become competitive in the world market, to attract investors, to spark local innovation, and to ultimately take advantage of globalization as a means of growth and poverty reduction, Nepal must cultivate the skills and talents of its people. The best way to do this is through specialty educational programs that go beyond the status quo of general knowledge, memorizing facts, and multiple-choice tests. Nepal must have accessible and innovative vocational and technical school programs will develop students who will not only be employable, skilled and technologically savvy workers, but also critically thinking entrepreneurs.

Contribution and achievement

In our day and age education has become nearly universally known as a fundamental right of all people. Equal access to education is penned into United Nation's charters as a universally declared human right (United Nations, 1948). Education births citizens who are literate, have self-confidence, are active in political issues, and have the skills to make innovative ideas a reality. All of these characteristics will be of great benefit to any society. But, in today's highly competitive globalized world, can the standard educational models of rote memorization, repetition of facts, and standardized multiple-choice exams create the skilled workforce necessary for our modern world? The standard educational model, practiced all around the world, cannot be dismissed as it has helped our world evolve into what it is today. But, it has been that argued standardized testing and rote memorization do not contribute to nor properly measure a student's achievement (Popham, 1999, p. 8). Alternative forms of education must be explored when good grades become more important than acquiring knowledge, when education is seen not as a means to a better life but as an

end in itself (Bista, 1991, p. 6), when a diploma is nothing more than something to hang on the wall, when the rural poor are not able to attend school, and when those who do graduate from school remain chronically unemployed.

Vocational and technical education can be defined simply as employment-focused education; one that prepares students with the skills necessary to work in specific trades. Practically speaking, whereas traditional school models focus upon the acquisition of general knowledge, vocational schools supplement knowledge acquisition with hands on training that can include everything from welding to machining, carpentry to architecture, engineering to electrical wiring. In many rurally populated and traditional societies (like Nepal), these types of hands on skills are learned by doing and are passed down from generation to generation (Bista, 1991, p. 129). This type of informal apprenticeship-style learning has allowed for the preservation of invaluable crafts and works of art. But, when it comes to building, manufacturing, and other types of production, age-old methods often overshadow technological advances and modern techniques. Although this is not always a bad thing, it does often mean that workers work more slowly, less safely, and less efficiently. Not only does this effect a nation's own production capabilities, but it also may hinder a large corporation or a small business from investing in a country.

Vocational and technical schools will not only help an individual gain knowledge and employability that will enrich their own lives, but investment in these schools also yields high returns to the nation as a whole. This can be seen by looking at the internal rate of return of vocational educations. Neupane (2011), calculated the internal rate of return in Nepal of vocational school graduates for Junior Plumber, Brick Layer Mason, Assistant Beautician, Building Electrician and Tailoring occupations. Extremely high rates of returns were found if 149.47%, 126.35%, 120%, 98.4% and 89.70% respectively (p. 78). Additionally, as reported by the World Bank's Psacharopoulos (1994), a global trend has shown that the social internal rate of return for vocational education is 10.6% (p. 1333).

Further evidence of the power of vocational education can be seen by looking at countries that have, through globalization and trade, grown from poverty to prosperity. In his book *Poverty to Power*, Oxfam's Greene (2008) credits the unparalleled economic success of East Asian countries such as South Korea, Taiwan, Vietnam, and China to the respective government's investment in skill formation. Greene states that these "governments

invested heavily in education and training, ensuring that they had skilled workforces able to produce ever more sophisticated goods" (p. 151).

To achieve these types of high rates of returns at the individual and societal

levels, the objectives of a vocational course go deeper than simply learning how to operate a tool or how to build or fix something. These courses must prepare a workforce that is not only capable but also innovative. As listed by Yusoof (2013), some general objectives of a vocational school can be identified as follows:

- 1) To fulfill the national goals of development and the removal of unemployment and destitution.
- 2) To impart education relevant to productivity, economic development and individual prosperity.
- 3) To meet the needs of skilled and middle level manpower for the growing sectors of the economy.
- 4) To prepare students for self-reliance, gainful employability, and self-employment.

Some of the greatest advantages of vocational schools rests in their focus on employment through the partnership with the government and industries to fill gaps within the growing sectors of the economy. Not only that, a quality vocational skill will also provide the training necessary to create self-reliance and self-employment—in other words, a vocational school should cultivate problem-solving, critical-thinking, and other entrepreneurial skills.

Vocational training programs can be conducted by government institutions at the central or local level, through non-governmental organization programs, through apprenticeship-style programs with private industries or workers unions, or through a community-based venue such as a community-center, church, or local school (Yusoof, 2013, p. 14). Each community, with its own unique set of circumstances, would benefit differently from one or a mix of these various types of vocational program providers.

One example can be seen in Scotland where a vocational school curriculum was designed to adapt itself to the needs of the individual learner and develop an entrepreneurship among students (Umunandi, 2014, p. 49). This curriculum did not focus solely upon the acquisition of skills and techniques. While learning specific skills, it aimed at teaching students how to work safely, independently, and with good attitudes and also how to analyze, understand, and communicate (Umunandi, 2014, p. 52).

These policies from Scotland are a great example of how a government can shape policies to fit the needs within a country, to fill gaps in the workforce, and to create a well-rounded, entrepreneurial, skilled and therefore very desirable employees. Developing countries such as Nigeria have seen the great potential that vocational programs like this one have and are looking at Scottish policies as an inspiration to fulfill their own needs (Umunandi, 2014, p. 49). Nepal can also look to the successes of countries like Scotland for examples of how to model vocational and technical programs.

Status and initiation

The government in Nepal has followed the trend of many other developing countries by making an effort to invest in vocational and technical programs. In 2009, the Ministry of Education of Nepal released the School Sector Reform Plan (or SSRP). This document was designed to list and explain policies that aimed to improve the quality and accessibility, and accountability of Nepal's public schools (p. 1). Attention was given to early education, basic and secondary education, literacy and lifelong learning, teacher development, and technical education and vocational training.

In order to accomplish its goal of equipping students with employable skills and helping them transition from school to work, the SSRP defers to the Council for Technical and Education and Vocational Training. Established in 1989, the CTEVT takes responsibility for policy formation, quality control, preparation of curriculum, and developing skill standards of various occupations (CTEVT, 2014). Through the use of numerous affiliated and annex schools located throughout the country, the CTEVT is able to implement training programs that encompass a wide range of skills among a wide range of differing industries. A few examples of the many skills taught include animal and plant sciences, computer skills, managerial skills, cooking and baking, welding, mechanics, masonry, photography, and hair and beauty culture (CTEVT, 2014).

In 2012, it was shown that vocational and technical schools (including those affiliated with the CTEVT) make up only a small percentage of the total institutions available for students within Nepal. The total number of public schools and public higher secondary schools in the country numbered 29,063 and 2,499 respectively. This is in large contrast to the mere 72 public vocational and technical schools. This means that, of all the public school options available to students at the secondary and higher secondary level, only .2% were technical and vocational schools. Although it is not nearly as drastic, disparity can be seen when comparing private institutions as well. In 2012, there were 5,298 private schools, 884 private higher secondary schools and 346 private vocational and technical schools. Private vocational and technical schools

made up 5% of the total number of private schools and higher secondary schools. The same type of trends can also be seen within enrollment numbers. In the same year, 2012, there were 7,444,134 students enrolled in public and private schools, 655,415 students enrolled in public and private higher secondary schools, and 25,313 students enrolled in public and private vocational and technical schools (Ministry of Education, 2012).

The Ministry of Education could continue to improve policies in order to address some of the shortcomings of the country's technical and vocational programs. For example, the vocational and technical education section of the SSRP does not address any accessibility or social issues while the CTEVT programs do not explicitly emphasize critical-thinking, innovation, and entrepreneurial development. All of these are important issues that will create a workforce that is ready to contribute to the international market.

Issues and challenges

In order to successfully implement vocational and technical programs that are attractive for potential students to attend as well as for foreign and local industries to recruit employees, some challenges must be recognized, targeted, and overcome. Successful vocational and technical programs in Nepal must overcome social as well as practical challenges.

First, in order to become a nation that is competitive in the global market, Nepali students of all classes, castes (both rural and urban) must begin to see trades and labor intensive skills as valuable and worthy endeavors. Elitism has been and continues to be a dominant feature of Nepalese society. Although globalization is beginning to slowly change the attitudes of many young people, there still tends to be a sense that education is a way to avoid hands-on, physical occupations which are seen as low-class. Education in this view is a way to associate oneself with high class society. Bista (1991) elaborates by saying that "the educated [of Nepal] consider themselves purer and of higher status than those who are uneducated and perform physical work" (p. 128). Therefore, students who seek technical and vocational educations often do so to gain administrative and managerial qualifications, not to acquire technical skills (Bista, 1991, p. 130). Technical trades and skills would then be left to those who have learned informally through family-based, learning-by-doing methods. Although these methods are not always inadequate, the student may never learn the new technologies that their counterparts in other parts of the world are currently taking advantage of. Such a massive societal shift in mentality is not an easy task, but in order to properly train the country's workforce, educators must find ways to show that labor-intensive occupations are worthwhile, respectable and equal in value to any other type of profession.

Secondly, policy-makers and program implementers must consider the barriers of accessibility that many students face. These boundaries could be financial, geographical, and/or cultural. Paradoxically, those who have the greatest access to education, the urban middle and upper classes, have little desire to participate in vocational-style educational programs and those who could benefit most from such programs face the most inaccessibility.

Families in rural Nepal often rely on children to participate with household labor. These families rely on children to contribute to their self-subsistence way of life (Menon, Perali, & Rosati, 2005, p. 4). Education, any type of education, may be too expensive and can take away from family needs. Although families could benefit in the long-run from a student's investment in vocational education, short-run needs often take priority. Planners and policy-makers must not only look into scholarships and stipends to further accessibility, but must also consider ways to conduct programs that do not burden the needs of a family. For example, creating school schedules that do not conflict with important agricultural seasons, such as harvest, could allow students to continue to attend school without having to neglect the needs of their families.

Lastly, to ensure that vocational and technical educational programs consistently produce a competent and highly skilled work-force, the contents and curriculum of programs must be continually updated, adjusted, and scrutinized. As new technologies and new methods are developed, Nepal's vocational programs must provide training that is up-to-date and takes full advantages of such innovations. Also, since the development of Nepal depends not only upon foreign investment but also upon local innovation and entrepreneurship, vocational and technical programs must also not ignore the values of critical thinking, problem solving, and other skills necessary to stir up a student's creative capacity. In this area, Nepal could take a cue from the Scottish model of technical and vocational education which places a strong emphasis on entrepreneurial development.

Conclusion

By continuing to improve upon and implement successful vocational and technical education programs, Nepal can grab hold of the advantages that globalization has to offer a developing country. When Nepal taps into the great potential of its diverse, hard-working, and dedicated people and creates a workforce that is inclusive, skilled, innovative, and entrepreneurial then it will surely be seen around the world as country worthy of great investment. There are many challenges in the implementation of these programs. To overcome these problems, creative and outside-the-box solutions must be considered. Despite these challenges, one has the right to be optimistic about Nepal's future. Accessible technical and vocational

educational programs are one way to promote the development, growth and well-being of the county of Nepal.

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Practices Recommended for Effective Training and Development of Nepalese Five Star Hotels

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Abstract

This study aim to know the training and development practices in Nepalese five star hotels and recommend the best practices followed by Nepalese five star hotels. It attempts to identify the linkage of training and development practices and enterprises demographic characteristics of Nepalese five star hotels. Based on the survey of 4 out of 6 five star hotels training and development practices, 65 respondents including mid and top level Managers were interviewed and asked to rank the most appropriate model of training and development in hospitality industry. The study gives a strong indication that there are differences on practices and importance of training and development in the hotels. The study found that on-the-job training method is mostly practiced and T&D practices are influenced by hotel chain and education of employees. It is recommended that on-the –job training method of job training is highly effectiveness and efficiency for staff skill enhancement in Nepalese five star hotels.

Keywords

Training and development, induction, on-the job, off-the-job, five star hotel

1.1 Background of the study

Human resources development focuses attention on improving the existing capabilities of human resources in an organization and helping them to acquire new capabilities required for the achievement of organizational as well as individual goals. Training is a process of learning a sequence of programmed behavior. Its application of knowledge. It gives people an awareness of the rules and procedures to guide their behavior. It attempts to improve their performance. The Manpower Service Commission has define training as a planned process to modify attitude, knowledge or skill behavior through learning exercise to achieve effective performance in an activity or range of activities. Its purpose, in the work situation, is to develop the abilities of the individual and satisfy the current and future needs of the organization. According to Dale S. Beach “training is the organized procedure by which people learn knowledge and/or skills for a definite purpose” The training can be classified into many types according to the feature of the objective and the period of training. No matter what the measure for the classification of the training may be, the aim will be pointed to the

trainee. The type of training may be classified into: orientation: actual work training: laboratory training: skill training: practice training: and special training.

Employees training & development has been recognized as a significant determinant of both employee and organizational performance (Lucas, 2004). Managers in today’s organizations have placed great importance on the issue of training & development of their employees because the trained employees, in return, are more likely to take pride in organizational achievements; believe in the goals; committed to their organizations and values of the organization and, therefore, exhibit higher levels of performance. In fact, the implementations of various training& development programs fosters learning and improve the overall competence of organizational members, and it is believed that training implementation leads to higher organizational performance. In terms of global competition and rapid change, personnel training are essential (Gazija, 2011). Therefore, the organization has to promote the training and development of its workforce to broaden their knowledge and skills, re-orient their culture and values, and encourage individuals to become idea champions.

Owing to the increasing importance of HRD practices to the competitive advantages of firms in the rapidly changing knowledge-based economy, some scholars have paid attentions to examine the usage and importance of HRD practices (King, 2003) and their effects on organizational outcomes, such as productivity and efficiency (Youndt et al., 1996). The importance of training and development programs to overall firm performance has been emphasized by several scholars (Chand, 2007). The human capital theory suggested that training can enhance employee's skills and competences, which in turn increase their productivity and performance (Youndt, et al., 1996; Mertens, 2004).

Interactive training programs can help in reducing costs without undermining training results. (Laff, 2008). Motivation is a key factor in knowledge flow within organizations. Specifically, goals are central to understanding motivated behavior, with different research disciplines emphasizing different consequences, levels, and types of goals. Despite the strong empirical support for the motivational models of knowledge-sharing behavior, the influence of goal orientations as intrinsic motivational determinants of individuals' knowledge-sharing behaviors has been largely unexplored with the exception of Matzler and Mueller's (2011) empirical research for a sample of employees of an internationally engineering company. Knowledge sharing refers to the provision of task information and know-how to help others and to collaborate with others to solve problems, develop new ideas, or implement policies or procedures (Cummings, 2004). Knowledge sharing also can be defined as "a social interaction culture, involving the exchange of employee knowledge, experiences, and skills through the whole department or organization" (Lucas, 2004).

Training and development programs are broadly categorized into five types:

'Induction Training' (IT)

It comprises adequate importance is given to training, it is well planned, it is of sufficient duration, to enable gain self-confidence and perform better, it protects from costly mistakes; understand general objectives, scope, Programmes, problems, policies and structure of the organization. The second factor 'On- the -job Training'(OJT):

It includes to acquire technical knowledge and skills through training, participate in determining the training

needs, the quality of in-company Programmes in your organization is excellent, senior line managers are eager to help their juniors develop through training, improved availability& quality of staff, training takes place either on or off-the-job, satisfaction with performance reviews, line managers provide the right kind of climate to implement new ideas and methods acquired by their juniors during training. The third factor Off-the Job training (OTJT):

It comprises of enhanced confidence, commitment & motivation, recognition, greater responsibility & pay improvements ,availability of training for problem-solving ability, understanding of the skills and knowledge they are expected to acquire from the training., employees returning from training are given adequate free time to reflect and plan improvements in the organization, external training Programmes are carefully chosen their quality and suitability, to change behavior, attitudes or opinions and off the job training is more preferred by the employees. The fourth factor. 'Cross cultural Training' (CCT):

It comprises. cross-cultural training is given high importance in your company, there is no discrimination between any staff member in regard to his/her culture, cross-cultural training improves team work, your organization is not messed up with cross-cultural conflicts, feedback is collected about the effectiveness of every T&D programme from each employee. Finally, the fifth factor 'Spiritual Training' (ST) comprises your organization participates in spiritual trainings, adequacy of continuing training, it enhances self-confidence and it decreases tension /stress as compared any other form of training

Objectives of the study

Objectives will be:

1. To assess the internal environment of training and development within hotels.
2. To investigate the practices adopted for the training of employees of hotel industry.
3. To know the employee behavioral aspect in collecting and implementing knowledge gained through T&D in hotel industry and provide recommendations.

Hypothesis

There is no significant difference on the importance of various training and development practices in Nepalese five star hotels.

There is no significant relation between T &D practices and its influencing factors.

Research methodology

Data were collected using questionnaire and interview. The questionnaire was addressed to 100 Training Managers/HR Managers of 4 different five star hotels out of 6 five star hotels. Out of 100, 65 (65%) respondents returned back the filled questionnaire. 4 Senior Human Resource Managers and 3 Training and leadership development Managers were interviewed. The questionnaire was tested for reliability test using Cronbach Alpha. This test help in determining the set of variables with high reliability with Alpha coefficient 0.78.

Descriptive analysis

Table 1: profile of respondents

Age	Number	Percentage
Less than 5	15	2.3
6-10	21	32.3
11-15	18	27.7
16-20	8	12.3
21 and above	3	4.6
Capital (in million Rs.)		
Less than 10	43	66.1
11-20	17	36.1
21-30	4	6.1
31-40	1	1.5
40 and above	0	0
Employees		
Male	28	43.1
Female	37	56.9
Education		
High school	2	3.1
Bachelors	34	52.3
Masters	26	40
Doctorate	3	4.6
Hotels		
Hotel Radisson	27	41.5
Annapurna Hotel	7	10.7
Yak and Yeti Hotel	13	20.0
Hyatt Residency	18	27.6

Figure 1: Pictorial display of profile

Table and pie chart presents the distribution of the sample organizations. The majority of the respondents were female (56.9%) and male (37%). Most of the employee were working for 6 to 10 years in the organization and least number of employee were working for 21 years and

above. Around 52 percent of the employees had completed their Bachelor's degree, 40 percent had completed Master's degree and 4.6 percent were Doctorate and 3 percent were only high school pass out. Around 66.1 percent respondent indicates that most of the organization has very less investment on training and development with less than 10 million. Only 1 percent organization have invested the capital of more than 30 to 40 million rupees. Out of 65 respondents around 42 percent were from Hotel Radisson, 27 percent from Hyatt Residency, 20 percent from Yak and Yeti and 10.7 percent were from Hotel Annapurna.

Result and discussion

Table 2: training and development practices

	Mean	SD
Induction training	4.71	0.62
On-the-job training	4.42	0.71
Off-the-job training	4.38	0.66
Cross cultural training	3.92	0.78
Spiritual training	4.12	1.70

Analyzing the five practices of training and development, it has been identified that Nepalese five star hotels are mostly practicing on-the job training methods for the newly recruited staff in the hotel. Ranking these practices in terms of their importance and adoption, quality workforce is ranked first for the effective training and development. It has been found that hotels are using training and development practices to attract talents and to improve quality of staff. Importance of induction in the hotel is ranked 2nd where as cross cultural and Off-the-job training ranked 3rd and 4th respectively. Due to of the international exposure and interaction with foreigners having different cultural background, cross cultural training has been given more importance after on-the-job and induction training. Thus, the analysis indicates that there is significantly difference on importance of training and development practices in Nepalese five star hotels.

In order to test the second hypothesis, one-way ANOVA is done. The dimensions used in the test are age, size, number of employees, education, Hotels and Gender.

Table 3: One-way ANOVA test

T & D Practices	Hotels	Age	Size	Employee Number	Gender	Education
Induction training	3.54**	2.4	2.6	3.5	2.5	2.5
On-the-job training	3.7*	2.8	2.9	3.3	2.1	3.6*
Off-the-job training	3.1	2.7	2.3	1.1	1.1	3.3*
Cross cultural training	2.2	2.3	1.8	1.2	1.0	2.7
Spiritual training	2.3	2.4	0.5	1.7	0.8	2.3

Significant at level * $p < 0.1$, ** $p < 0.05$

Based on the F-values, it can be concluded that there is a positive relationship between T & D practices and hotel chain and education level, and there is no relationship between T & D practices and hotel age, size and number of employees. It means that T&D practices varies with the hotel chain and employee education level also determines the need of training and development in hotels.

Conclusions and recommendations

The study focused on training and development practices in five star hotels in Nepal. It provides insights on the adoption of different practices of training and development in five star hotel category. This study found the forms of training and development and indicates the positive relationship between training and development practices variables and hotel chain and education level, however it was different in the case of age, size and number of employees.

The research has suggested that training and development play prominent role in the skill enhancement of human resource in short run and long run. The size of capital and age factor do not influence the training and development practices. Educational level of employees and the chain of hotel that is connected internationally may affect the level of training and development practices. It is recommended that on-the job training and induction training are most suitable training methods that hotels should follow. Freshers with Bachelor degree can be the best fit in the organization if they are given with on-the job training and induction trainings.

This research has not incorporated all the items affecting the T&D practices and should be considered in future research as well such as management philosophy, employee attitude, need of T&D, perception and problems implementation.

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Challenges and Opportunities of Nepalese Women Politicians

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Abstract

The empowerment and secured participation of women at all levels in each sector of the society has been far from being fully addressed. Majority of people in Nepal, hold a number of misconceptions about women's potential, be it in economical, political, or social areas. Their belief and actions try to place women as weaker sex meant to work at home, not realizing that they are equally capable just like men are. This paper analyzes based on the content analysis and depending on secondary data in the form of documents and other evidences. The study has revealed that when one talk about empowering women, the first things that comes to minds are seminars, workshops and conferences. The real impact of these events in actually strengthening women's decision-making power is highly questionable. What empowering women actually means, especially in the case of developing countries like Nepal, is making them capable of handling their own issues. It is the ability to realize that they are entitled to and have equal rights to an opinion, the desire and power to voice that opinion, and finally generate action for its fulfillment. Participation of women, most importantly a meaningful one, is taken as a prerequisite of their empowerment and has been a matter of constant global concern and debate for decades.

Keywords

Participation, women, politics, decision making

Introduction

Nepal is a society characterized by a strong patriarchal culture, where women traditionally have been marginalized from participating in public life. Women's social status and relative equality with men varies among Nepal's various ethnic groups, regions and castes. Their position is normally determined by patriarchal traditions, in which the predominant view is that women are subordinate to men and their role should be confined to the domestic sphere, where their main duties involve child-raising and household chores.⁸³ In combination, discriminatory cultural practices and laws pose major hurdles for achieving gender equality in Nepal, and women are falling behind men in areas such as education, economic empowerment and political participation.

Although women have had the right to vote and to stand for election since 1951 and the government in 1991 ratified the CEDAW without any reservations, women's voices have long been silenced in Nepal. Women have traditionally had little opportunity to participate actively in political life, with few or no women represented in the legislative, judiciary and executive bodies. Some concrete

efforts to ensure women's representation in local and national politics were made prior to the peace process.⁸⁶ However, women had never comprised more than 6% of Nepal's parliamentarians before 2007, and the few women in political positions were mostly limited to the upper caste or were close relatives of male politicians, and largely subordinate to male members and leaders.

Objectives of the study

The general objective of the study was to explore the status of Nepalese women in politics. The specific objectives of the study were:

- To assess existing knowledge on Nepalese women in politics in the context of socio cultural aspects,
- To assess challenges of participating in Nepalese politics by women in general,
- To assess the opportunities of Nepalese women in political activities for effective leadership.

Methodology

This study was conducted on secondary data published and unpublished in different research documents. The content analysis was the method of analyzing data based on checklist and different knowledge and issues were

generated based on the literature reviews as well. The major areas of the study were focused on the review of sociological and economic impact of Terai movement in Nepal.

Towards increased representation

In spite of the above-mentioned transformation of gender roles during the conflict and women's active involvement, in people's movement of 2006, women were not included as mediators, participants, observers or signatories in the peace negotiations between the Maoists and the government. As noted by the head of the UN Mission to Nepal (UNMIN) at the time,

At all the political negotiating tables I have seen in Nepal during the peace process, not once have I seen a woman at the table.

To the frustration of the women's movement, neither the Maoists nor the political parties representing the government included any female representatives in their delegations to the talks. The peace negotiations were a male-dominated and exclusive process,⁹⁰ and the resulting comprehensive peace agreement (CPA) did not include more than one paragraph that specifically mentioned women.

After the signing of the CPA, the parties formed various committees that would be responsible for developing the main issues in the agreement. Among these were the National Monitoring Committee, in which 2 out of a total of 31 members were women, and a committee set up to develop a new Interim Constitution, which at the time of formation was completely devoid of women. After considerable pressure from female politicians and women's organizations, however, the six-member all-male Interim Constitution Drafting Committee was eventually expanded to include four women and one representative from Dalit community. During the drafting of the Interim Constitution, women in political parties and civil society continued to lobby for guaranteed women's representation in the new political institutions that were to be established. Their voices were finally heard, and at the last minute a clause calling for affirmative action for women's political representation was incorporated into the new Interim Constitution, which was adopted in January 2007.

The Interim Constitution made provisions for a mixed electoral system for the planned elections to the Constituent Assembly. By combining methods of 'first past the post' (FPTP) and proportional representation (PR),

it aimed to give all traditionally excluded groups (such as women, Dalits, oppressed communities/indigenous groups, backward regions and Madhesis) a greater voice in the legislature. The Interim Constitution stipulated that a minimum of one-third of the total number of candidates to the Constituent Assembly should be women (Article 63(5)), and this provision was also included in the new electoral law that was passed by the Interim Parliament in June 2007.

Participation in post-conflict

In view of the traditional marginalization of women from public and political life, the elections to a new Constituent Assembly, which were organized in April 2008, represented a milestone and an important victory for Nepali women. While none of the political parties entirely fulfilled the required percentage of women enlisted as candidates, all of the major political parties followed the provisions to some extent.⁹⁵ Altogether, nearly 3,500 women contested in the elections, comprising around 35% of all candidates, and on Election Day women outnumbered men as voters.⁹⁶ As a result of the elections, women obtained 30 seats through the FPTP elections (12.5% of the available 240 seats), and 161 seats in the PR elections (close to 48% of the 335 seats available). In addition, six women were nominated by the three major political parties to comply with the quota, which meant that women held 197, or around one-third, of the total of 601 seats in the new Constituent Assembly. In the new coalition government that was formed shortly after the elections, however, women were appointed to only 4 out of a total of 24 ministerial positions (16.67%), with responsibility for the Ministry of General Administration, the Ministry of Tourism and Civil Aviation, the Ministry of Industry and the Ministry of Education.

Political participation through civil society

The tradition for women's organizations in Nepal goes back to 1948, when the Nepal Women's Association was formed to raise political and social awareness among women and to protest against the government's refusal to give women voting rights. Subsequently, however, the king's subversion of the democratic system to an autocratic regime suspended all civil society organizations and their activities between 1960 and 1990. In the early 1990s, a number of socially and politically oriented women's organizations were created, but during Nepal's armed conflict (1996 -2006) civil society activity was again virtually curtailed and organizations were obliged

to have prior consent from the Chief District Office before organizing programmes. However, as mentioned earlier, Nepal saw a new wave of women's political engagement during the People's Movement in April 2006, when women from civil society took to the streets to demand peace and democracy. Since then, a myriad of active women's organizations have been operating in Nepal, with a variety of priorities, activities and target groups. Some of the women's organizations are associated with political parties, while others represent specific ethnic, caste and religious groups or geographic regions. Many of the organizations work across the whole country, but most of them have their base and operate in Kathmandu, and are generally headed and staffed by women.

Promoting women's participation and rights

As in Nepal, the demand for increased women's participation in political decision-making has been a key topic on women's organizations' agendas throughout the post-conflict period in Nepal. While their lobbying for female representation in the 2006 peace negotiations brought few results, women's organizations have made various efforts to promote women's political participation during and after the signing of the CPA. For instance, as a response to political leaders' argument that there were no women capable of taking part in the peace process, the women's network published *Who Is Who of Nepali Women* in 2006.

Since the 2008 elections, the activities of Nepal's women's organizations have been more fragmented, but some endeavors to further promote the participation of women in politics have been made. For instance, in 2009 WAPPDCA and the Inter-Party Women's Alliance launched a campaign called 'Mission 50-50,' aimed at ensuring equal representation and more meaningful participation of women at all levels of the state, and the Forum for Women, Law and Development (FWLD) has lobbied the government to adopt legal provisions obliging political parties to have a minimum of 33% women's representation at all levels of their organizations. Along with international organizations, such as the NDI and the International Institute for Democratic and Electoral Assistance (IDEA), some women's organizations and networks have also engaged in capacity-building and leadership training programmes for current and potential female political candidates. Different organizations have targeted diverse constituencies of women in their training programmes. For instance, prior to elections, women's

network was active in educating voters and preparing women for political positions, and now provides training in computer skills and English to women in the Constituent Assembly, while the NDI is working with female members of the Constituent Assembly through a Women's Leadership Academy, aiming to enhance their political skills and their ability to deliver services.

Since 2008, many of the efforts to promote women's rights and protection have been directed towards the constitution-drafting committees. A number of women's organizations and networks have developed charters with specific recommendations about what needs to be included in the new constitution in order to prohibit discrimination on the basis of sex, gender, age or marital status, and these have been submitted to various committees of the Constituent Assembly. In 2009, an umbrella organization for local women's groups, Women Acting Together for Change (WATCH), also organized a procession with participation of over ten thousand rural women in the Kathmandu Valley, where they presented 120 demands for the constitution-drafting process to members of the Constituent Assembly's committees.

While the draft constitution has not yet been finalized, there are indications that some of these recommendations will be incorporated, along with more general provisions for gender equality. For instance, some political parties have already adopted gender-equality agendas and have endorsed women's role in decision-making and efforts to end violence against women.

Outcomes and challenges

All of the individuals interviewed for this study – from women activists to male politicians – agreed that women's organizations have played a central role in promoting awareness on gender equality, and in transforming what earlier were regarded as women's private concerns into wider public issues in Nepal. While the efforts of women's organizations have often been scattered and their interests diverse, they have been successful in drawing policymakers' attention to gender-discriminatory laws and practices. During the past four years, they have also been a driving force behind the adoption of laws and regulations that protect women's rights, including a law ensuring the right of women to confer citizenship on their children (Nepal Citizenship Act, 2006),¹¹⁵ a gender-equality law calling for an end to all discriminatory laws and regulations against women (Gender Equality Act, 2006), regulations providing protection for victims and

sanctions for perpetrators of human trafficking (Human Trafficking Control and Regulation Acts, 2007/08), and a law punishing perpetrators of domestic violence (Domestic Violence Act, 2009). Owing to pressure from the organization Women for Human Rights, a legal proposal that would offer financial support to men who marry widows was also put on hold, and in 2009 advocacy by women's organizations also led the government to mandate 33% women's representation in Local Peace Committees, which are responsible for monitoring the CPA at the local level.

Women's organizations have been most successful in drawing policymakers' attention to their initiatives when they have joined forces in networks and lobbied for a joint agenda. Yet, since the signing of the CPA, the Nepali women's movement has fragmented, with different interests resulting in different approaches and agendas. As a respondent from an international organization argued,

Tension between women in political parties and women's organizations has also weakened the women's agenda since the 2008 elections, with women's organizations accusing women in political parties of only prioritizing issues according to their parties' agendas and forgetting about women's issues, and female politicians blaming women's organizations for prioritizing working areas according to the possibilities for obtaining international funding.

Patriarchy and gender inequality

In Nepal, as in many other developing countries, deeply entrenched patriarchal norms and practices continue to subjugate women to men, leaving them with a feeling of inferiority, which places them at a disadvantage vis-à-vis their male counterparts in the political sphere. While political parties for the most part have complied with required minimum levels for female candidates, women's representation in decision making committees inside the political parties is almost negligible. Women appear as subordinate to the male-dominated political leadership, and a persistent patriarchal political culture, which to a large extent is also internalized by women, makes it difficult for women to demand space and bring forward initiatives related to women's particular interests and needs. Furthermore, there is a clear tendency for political party leaders to curb women's voices, and women MPs assert that political parties are characterized by negative attitudes towards women members, who receive little support from their male colleagues. In Nepal, several

female Constituent Assembly members related that they often felt intimidated by their male colleagues. Women's leadership energies are thus to a large extent isolated in parties' women's wings and interparty women's caucuses, whose secondary status prevents them from effectively provoking the leadership into committing to expressed gender-equality goals.

Furthermore, many of the women who entered political institutions after the first post conflict elections in Nepal is relatively or completely new to politics, and limited education, along with lack of the political knowledge and experience required to make a substantial contribution to policymaking, constitute great obstacles for their political advancement.

Women's organizations: participation and rights

Nepali women's organizations and networks also stand out for the work that they have done to promote a variety of other issues related to Resolution 1325. Through organization of meetings, workshops and discussions, these organizations have generated awareness among women about their political situation, and have informed women of their political and social rights. Moreover, they have played a vital role in influencing decision makers at the national level to uphold agreements on women's rights. Several organizations have lobbied political institutions for policies and reforms designed to increase women's representation in decision-making, to eliminate all forms of gender-based discrimination, and to protect women and girls from gender-based violence. Through this work, they have politicized a number of issues that traditionally have been deemed beyond the remit of public decision-making (such as domestic violence, marital rape, social welfare needs, and reproductive health and rights) in Nepal. Accordingly, they have contributed to broadening the political debate, and made it more legitimate to speak up about the rights and particular needs of women.

Women's platforms have political leverage

Most respondents interviewed for this study agreed that women's organizations have been most successful when they have fostered a joint political platform for which they have sought political influence. During the peace negotiations in Nepal, women united across ethnic, political and class backgrounds, and developed clear agendas with joint recommendations. Throughout the peace processes, women's networks also made it easier to influence public opinion in favour of women's rights

and women's participation in decision-making. Hence, although women did not participate directly in the peace negotiations in either country, several of their gender-specific recommendations were subsequently incorporated in the peace agreement in the Interim Constitution in Nepal. Since the end of their respective conflicts, however, the women's movements of both countries have fragmented, and owing to diverse affiliations and interests they have faced difficulties in synchronizing their strategies for political advocacy, which has weakened their influence on political decision-making.

Furthermore, links and interaction between women's organizations and women in political office is crucial for advancing women's issues and for creating a common women's agenda. Collaboration between women MPs and women from civil society has been a strategic asset in negotiations over improved rights for women on several occasions. Yet, the links between them have become weaker since the first post-conflict elections in Nepal. A breakdown of trust between women in political office and women in civil society has developed, where women's organizations accuse female politicians of not doing enough to advance a women's agenda, while women politicians blame women's organizations for listening more to their international donors than to women at the grassroots level.

Potentials and perils of international support

With growing international consensus around the importance of women's participation in peace and post-conflict processes, increasing donor resources have been made available for women's organizations in Nepal, as in many other conflict-affected countries. External funds have undoubtedly been an important source of support for women's organizations, and instrumental for the development of their operational capacity, ideas and activities. Experience in Nepal also shows that women's organizations were strongest when they were receiving considerable support from the international community.

However, respondents from women's organizations express concern over how the prevalence of short-term and project-based funding leads to insecurity regarding the sustainability of their activities and makes it difficult to engage in long-term planning. Moreover, representatives from women's organizations stressed that, because women's organizations are heavily dependent on external support, a funding environment characterized by hard competition and narrowly defined calls for funding

means that international donors often gain excessive influence on the work and agendas of those organizations. In Nepal, several respondents also argued that women's organizations' dependency on external funding has reduced the legitimacy of their work, as political leaders tend to regard them as representing the interests of the international donor community, rather than Nepali women. Another expressed concern is that international funding opportunities tend to favour well established women's organizations that operate in the capital cities, undermining smaller women's organizations operating at the grassroots level. As a representative of a Nepali umbrella organization for local women's groups asserted, 'International donors are mainly interested in "show off projects". And since grassroots-based projects are not so visible at the national level, it is extremely hard to get funding for our local projects.'

While the sustainability of women's organizations in Nepal is of paramount importance for increasing and upholding women's political participation, the current system for financing makes their sustainability uncertain. Most organizations continue to depend largely on international assistance, and the inability of external donors to make long-term commitments is a persistent problem for many women's organizations. These organizations need international support and encouragement, but they should not be deprived of their initiatives, which is often what happens when international actors seek rapid results.

Conclusion

Nepal offer important examples when it comes to achievements and challenges related to increasing women's participation in post-conflict political decision-making. In line with Resolution 1325 and other international policies, both countries have made significant efforts to involve women in formal decision-making since the end of conflict. Women have attained a higher level of political representation in national political institutions than ever before, and now hold important positions of political responsibility. Women's organizations have also offered an important and complementary strategy for enhancing women's engagement in public and political life, and for bringing up issues of relevance for the implementation of Resolution 1325 on the national political agenda. These positive steps notwithstanding, the foregoing has made clear that a host of (surprisingly similar) challenges still need to be addressed if women are to be able to participate on equal footing with men in decision-making processes

in Nepal. Several more general lessons can be drawn from this, regarding both women's formal political participation and their political activity outside of the conventional political arena.

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Teaching Critical Thinking and Problem Solving Skills

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Abstract

Critical thinking is a learned skill that requires instruction and practice. Business education instructors at both the secondary and post-secondary levels can enhance students' critical thinking skills by (1) using instructional strategies that actively engage students in the learning process rather than relying on lecture and rote memorization, (2) focusing instruction on the process of learning rather than solely on the content, and (3) using assessment techniques that provide students with an intellectual challenge rather than memory recall. Several barriers can obstruct critical thinking instruction. Lack of training, limited resources, biased preconceptions, and time constraints plan to negate learning environments that promote critical thinking. However, actively engaging students in project-based or collaborative activities can encourage students' critical thinking development if instructors model the thinking process, use effective questioning techniques, and guide students' critical thinking processes. The examples provided challenge instructors to think of students as users of information rather than receivers of information.

Keywords

Critical thinking, business education, rote memorization, preconception, metacognition,

Introduction

What is critical thinking, and why is it so important? The Critical thinking Community defined critical thinking as “the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action” (Scriven & Paul, 2007, p. 1). Critical thinking has also been referred to as metacognition (Tempelaar, 2006) or the process of “thinking about thinking” as defined and originally purposed by Flavell (1979). Critical thinking skills are important because they enable students “to deal effectively with social, scientific, and practical problems” (Shakirova, 2007, p. 42). *Simply put, students who are able to think critically are able to solve problems effectively.* Merely having knowledge or information is not enough. To be effective in the workplace (and in their personal lives), students must be able to solve problems to make effective decisions; they must be able to think critically.

Critical thinking is not a new concept. “Throughout nearly 300 years of policy making in the United States, educators have promoted eight broad goals of schooling: basic academic skills, critical thinking and problem solving, social skills and work ethic, citizenship, physical health,

emotional health, the Teaching Critical Thinking and Problem Solving Skills arts and literature, and preparation for skilled employment” (Rothstein, Wilder, & Jacobsen, 2007, p. 8). Business education directly addresses work ethic and the preparation for skilled employment as well as critical thinking and problem solving. Yet many teachers continually struggle to engage students in critical thinking activities (Tempelaar, 2006), and students seldom use critical thinking skills to solve complex, real-world problems (Bartlett, 2002; Rippin, Booth, Bowie, & Jordan, 2002). Why?

The answer may be in our instructional methods. Two quotes that are often cited together reflect this supposition (as cited by Schaefersman, 1991). First, Clement (1979) stated that “we should be teaching students how to think. Instead, we are teaching them what to think (p. 1). Second, Norman (1981) noted that “it is strange that we expect students to learn, yet seldom teach them anything about learning” (p. 1). Although content is important, the process of how students learn the material is equally important. Therefore, the purpose of this article is to analyze and synthesize secondary research to provide best practices for incorporating critical thinking instructional methods into business education classrooms at both the secondary and Higher-secondary levels. First, critical

thinking is described as it relates to instructional design. Then barriers to critical thinking are outlined. Finally, instructional strategies for enhancing students' critical thinking skills are provided as well as examples of critical thinking in business education.

Objective

The objective of this article is to develop insight on critical thinking skills about how it can be developed and what could be its hindrances.

Method

Methods used in this paper is to review of related literature and integrate literatures so that some generalization can be made.

Discussion

How critical thinking relates to instructional design

Those who have the ability to hear, do not always actively listen. Similarly, those who have the ability to know, do not always critically think.

The premise that critical thinking is to knowing as listening is to hearing implies that critical thinking is a learned skill that must be developed, practiced, and continually integrated into the curriculum to engage students in active learning. To support this premise, focused attention needs to be placed on the application of content, the process of learning, and methods of assessment.

In terms of the application of content, teaching techniques that promote memorization (often temporary knowledge) do not support critical thinking. Although some content, such as vocabulary definitions, do require memory, it is the application of the content that stimulates thinking. Instruction that supports critical thinking uses questioning techniques that require students to analyze, synthesize, and evaluate information to solve problems and make decisions (think) rather than merely to repeat information (memorize). Because critical thinking is a mental habit that requires students to think about their thinking and about improving the process, it requires students to use higher-order thinking skills not memorize data or accept what they read or are told without critically thinking about it (Scriven & Paul, 2008; Schafersman, 1991; Templear, 2006). Therefore, critical thinking is a product of education, training, and practice.

To link critical thinking skills to content, the instructional focus should be on the process of learning. How will the students *get* the information? Research supports the premise that lecture and memorization do not lead to long-

term knowledge or the ability to apply that knowledge to new situations (Kang & Howren, 2004). Traditional instructional methods use too many facts and not enough conceptualization; too much memorizing and not enough thinking. Therefore, lecture and rote memorization do not promote critical thinking. Instructional strategies that employ students' higher-order thinking skills lead to improved critical thinking skills (Hemming, 2000; Wong, 2007).

Additionally, assessments should emphasize thinking rather than facts (Ennis, 1993). Graded assignments, quizzes, or tests should become intellectual challenges rather than memory recall (Schafersman, 1991). Subjective tools such as essay questions and case studies require students to apply their knowledge to new situations and are better indicators of understanding than objective true/false or standardized multiple-choice assessments. However, instructors can create multiple-choice questions that require critical thinking. For example, a question that asks students to identify the example that best applies a specific concept requires more critical thinking and analysis than a question that asks students to identify the correct term for a given definition. Ennis stated that although they are more labor intensive to create than equally effective open-ended critical thinking assessments, multiple-choice tests are easier to grade. To enhance students' processing skills, it is important to review test questions and explain correct answers by modeling the critical thinking process (Brown & Kelly, 1986; Duplass & Ziedler, 2002; Schafersman, 1991).

Barriers to critical thinking

Several researchers (Landsman & Gorski, 2007; Sandholtz, Ogawa, & Scribner, 2004; Sheldon & Biddle, 1998; Wong, 2007) suggest that the current educational trend to standardize curricula and focus on test scores undermines instructors' ability to address critical thinking in the classroom. The emphasis on "teaching to the test" distracts the learning process from student-centered instruction and places the emphasis on the content. If the focus is on learning, students should be given the freedom (and responsibility) to explore content, analyze resources, and apply information.

Unfortunately, students are not typically taught to think or learn independently, and they rarely "pick up" these skills on their own (Landsman & Gorski, 2007; Lundquist, 1999; Rippen, Booth, Bowie, & Jordan, 2002). Critical thinking is not an innate ability. Although some students

may be naturally inquisitive, they require training to become systematically analytical, fair, and open-minded in their pursuit of knowledge. With these skills, students can become confident in their reasoning and apply their critical thinking ability to any content area or discipline (Lundquist, 1999). Critical thinking is often compared to the scientific method; it is a systematic and procedural approach to the process of thinking (Scriven&Paul, 2007). Just as students learn the process of the scientific method, they must also learn the process of critically thinking.

Four barriers often impede the integration of critical thinking in education: (1) lack of training, (2) lack of information, (3) preconceptions, and (4) time constraints. First, teachers often are not trained in critical thinking methodology (Broadbear, 2003). Elementary and secondary teachers know their content and receive training in the methods of instruction, but little if any of their training is devoted specifically to how to teach critical thinking skills. Higher-secondary instructors pursue additional content-based instruction during graduate school, but often have no formal methodological training, much less skill-based instruction. Second, few instructional materials provide critical thinking resources. Some textbooks provide chapter-based critical thinking discussion questions, but instructional materials often lack additional critical thinking resources.

Third, both teachers and students have preconceptions about the content that blocks their ability to think critically about the material. Preconceptions such as personal bias partiality prohibit critical thinking because they obviate analytical skills such as being fair, open-minded, and inquisitive about a topic (Kang &Howren, 2004). For example, many business educators still continue using two spaces after ending punctuation even though typeface experts have documented that today's proportional fonts are designed for one space (American Psychological Association, 2001, pp. 290–291; Chicago Manual of Style Online, 2007). A critical analysis of the information provided on this typesetting topic would support the use of a single space; however, strong biases for two spaces preclude many business teachers (predominantly typing teachers) from changing their opinion and adopting the acceptable procedure.

Finally, time constraints are barriers to integrating critical thinking skills in the classroom. Instructors often have a great deal of content to cover within a short time period. When the focus is on content rather than student learning,

shortcuts such as lectures and objective tests become the norm. Lecturing is faster and easier than integrating project-based learning opportunities. Objective tests are faster to take (and grade) than subjective assessments. However, research indicates that lecturing is not the best method of instruction, and objective tests are not the best method of assessment.

Instructional strategies for integrating critical thinking skills

Even when the typical barriers are overcome, critical thinking requires more than simple engagement. It involves students' personal discovery of information. In a study investigating students' learning (Nokes, Dole, & Hacker, 2007), students who used heuristic techniques to solve problems consistently scored higher on content-based assessments than students who learned by traditional textbook and lecture methods. Heuristic teaching methods encourage students to "learn, discover, understand, or solve problems on [their] own, as by experimenting, evaluating possible answers or solutions, or by trial and error" (Dictionary.com, 2007, p. 1). A similar study suggested that problem-based learning activities promoted "critical thinking and problem-solving skills; active participation in the learning process including self-direction, identification of own learning needs, teamwork, creative discussion, and learning from peers; and the integration and synthesis of a variety of knowledge" (Gurses, Acikyildiz, Dogar, &Sozbilir, 2007, p. 1). Kumar and Natarajan (2007) also found problem-based learning environments to increase students' thinking skills and knowledge acquisition. A comparable concept is work-based learning. As noted by Brodie and Irving (2007), work based learning (WBL) "is based on the inter-relationship and inter-dependency between understanding learning, critical reflection and the identification and development of capability within a WBL context "(p. 11). Many business education researchers have addressed critical thinking. Rippinet al. (2002) investigated the use of case study methods in undergraduate business education courses. Braun (2004) focused on improving critical thinking methods in business education curriculum development. Celuck and Slama (1999) identified methods of integrating critical thinking skills into business courses. Other researchers (Catanach, Croll, &Grinaker, 2000) studied hands-on activities that required students to think criticallyand apply their knowledge to specific tasks. In nearly all studies that suggested methods

for integrating critical thinking skills, the elements of modeling, questioning, and guiding student practice were emphasized.

Modeling critical thinking skills

Although business education students perceive critical thinking as an important skill, they typically do not know *how* to think critically. Students are not born with the ability to think *critically*, and their prior learning experiences often do not require them to think critically. Therefore, instructors who wish to integrate this skill in their classroom experiences must first model the behavior (Hemming, 2000). Students must learn how to think critically before they can apply the skill to content scenarios. Modeling can be demonstrated in a discussion setting by asking a question and “walking students through” the process of critically thinking.

Further, critical thinking activities should be based on a structure that includes four elements: “ill-structured problems, criteria for assessing thinking, student assessment of thinking, and improvement of thinking” (Broadbear, 2003, p. 7). Ill-structured problems are questions, case studies, or scenarios that do not have a definite right or wrong answer; they include debatable issues that require “reflective judgment”.

Providing students with individualized feedback based on their responses allows them to address specific criteria upon which they can assess their thinking. If instructors model the criteria for assessing thinking and provide a framework, students will eventually apply these techniques on their own. Finally, the process concludes with improvement of thinking. By creating a culture of inquiry where students can think about their thinking processes and practice logical constructs, students will become more willing to reconsider and revise their thinking.

Questioning techniques

In their research, Haynes and Bailey (2003) emphasized the importance of asking the right questions to stimulate students’ critical thinking skills. Other researchers (Brown & Kelley, 1986; Hemming, 2000) also focused on integrating questioning techniques into class discussions to support an educational environment where students can demonstrate and practice critical thinking skills. Critical thinking is best supported when instructors use critical questioning techniques to engage students actively in the learning process. Sample questions from all these studies include the following:

- ☐ What do you think about this?
- ☐ Why do you think that?
- ☐ What is your knowledge based upon?
- ☐ What does it imply and presuppose?
- ☐ What explains it, connects to it, leads from it?
- ☐ How are you viewing it?
- ☐ Should it be viewed differently?

These questions require students to evaluate the clarity and accuracy of their thinking as well as the depth and breadth of their thinking. Have they considered all the alternatives? Do they know why they think the way they do? Students need to determine whether the content they are using is relevant and if their thinking process is logical. By questioning their thought process, students can begin thinking about their thinking.

Research on questioning methodology also suggests that instructors should wait for student responses (Brown & Kelley, 1986; Hemming, 2000). Too often, the students’ silence is filled by the instructor re-wording the question or asking a different student for a response. However, most students need at least 8 to 12 seconds to process and formulate their response, especially in critical thinking situations (Schafersman, 1991). If a question is based on rote memory recall, speed may be relevant; however, thinking requires time and patience. Give students the time they need to think critically.

Research also provides strategies for using questioning methods in online learning environments (Astleitner, 2002; MacKnight, 2000). Discussion boards, virtual chat rooms, and instant messages provide forums for questioning and critical thinking. In synchronous environments, instructors can question students as they construct their responses. Although this is not possible with asynchronous communication, instructors can model the critical thinking process and assign activities that utilize questioning techniques and critical thinking responses. In all learning environments, it is important to guide students through the critical thinking process.

Guiding students’ critical thinking

When students are accustomed to being passive learners by merely memorizing and recalling information, it may be difficult at first to engage them in active learning situations that require critical thinking skills. Instructors should be aware of students’ initial resistance and guide them through the process to create a learning environment where students feel comfortable thinking through an

answer rather than simply having an answer. For example, peer coaching techniques can engage students in active learning and critical thinking opportunities. Assign students to two-person teams; one student is the problem-solver, and the other is the peer coach. Using the *Six Steps to Effective Thinking and Problem Solving*, or “IDEALS” (Facione, 2007), the problem-solver works through a case study or activity by responding to questions from the peer coach. The IDEALS are to Identify, Define, Enumerate, Analyze, List, and Self-Correct:

Identify the Problem: *What is the real question we are facing?*

Define the Context: *What are the facts that frame this problem?*

Enumerate the Choices: *What are plausible options?*

Analyze Options: *What is the best course of action?*

List Reasons Explicitly: *Why is this the best course of action?*

Self-Correct: *Look at it again ... What did we miss?*

This problem-solving technique guides students through the critical thinking process and utilizes learner collaboration. Similar strategies include integrating project-based learning activities that require students to apply their a real-knowledge by constructing world product. As a final guide to student practice, use peer assessments to facilitate students’ critical thinking and meta-cognitive skills.

Examples of critical thinking in business education

Many critical thinking strategies have been used successfully in business education courses at all levels. At the secondary level, Bartlett (2002) found that high school business students ranked critical thinking as the highest cognitive strategy. Shakirova (2007) analyzed the use of technology to support upper-grade students’ critical thinking skills.

At the university level, Tempelaar (2006) investigated the role of critical thinking in business education programs and found a positive correlation between critical thinking (identified as a subset of metacognition skills) and course performance. Hannon, McBride, and Burns (2004) developed a critical thinking module in an undergraduate business studies program that used experiential exercises to enhance students’ decision-making and conflict resolution skills.

Most research focused on collaborative learning activities to develop students’ critical thinking skills (Yazici, 2004). For example, Ngai (2007) documented using a project-based team approach for an undergraduate e-commerce activity. Results from both student surveys and assessments indicated that students gained critical thinking skills based on the practical application of “learning-by-doing” and the collaborative effort required by the project. Use of critical thinking skills when accounting students completed a group project involving the hypothetical creation of stock portfolios. A similar result was found when Whatley and Dyck (2000) applied International Monetary Fund development scenarios to international business topics with MBA students. The case method was also used by Rippen, et al. (2002) to provide students with the experience of practicing intervention skills and solving complex problems. With a little investigation and creativity, instructors can find resources that facilitate the integration of critical thinking activities into their courses.

Conclusion

The goal for business educators who want to instill critical thinking skills in their classrooms is to think of their students not as receivers of information, but as users of information. Learning environments that actively engage students in the investigation of information and the application of knowledge will promote students’ critical thinking skills. However, as with any skill, critical thinking requires training, practice, and patience. Students may initially resist instructional questioning techniques if they previously have been required only to remember information and not think about what they know. They may struggle with assessment questions that are not taken verbatim from the book. However, by encouraging students throughout the process and modeling thinking behaviors, students’ critical thinking skills can improve. The effort is worth the reward: students who can critically think for themselves and solve real-world problems.

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Tourism and IT Connection in Trekking Business of Nepal

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Abstract

Tourism is the backbone of an economy in Nepal. It is the only one country in the world where we have Kechana Kabel 70meter to highest Mt. Everest 8848meter. The International Mountaineering and Climbing Federation or UIAA recognize 14 mountains those are 8,000 meters height above sea level in the world but in Nepal have 8 mountains above 800meters as well as Himalaya's country Nepal have 126 ethnicities with different languages and their own culture and festival every part of Nepal which is a mixed flavor for tourist. Tourism and IT are deeply interrelated in tourism business of 21st century whole globe. So that, those people are working in the tourism industry they should know information technology to utilize tourism industry to grow trekking business.

The government has to bring effective new IT system. Research designed has been used as a qualitative method. The tools were primary and secondary data from references and data collected structure and nanostructure tourism and IT connection in trekking business in Nepal.

Key Terms

Tourism and IT connection, IT development, trekking business, information center, easy access

Introduction

The country is nestled among the world's highest mountains, ancient cultures set against the most spectacular scenery, the Himalayas, and the world's highest summit, Mt. Everest. The people, the diverse cultures, the majestic grandeur of the sacred Himalayas and the "Shangri-la" mysticism have lured visitors from all corners of the globe. A majority of the international tourists come to Nepal for holiday, trekking and mountaineering, predominantly during the tourist season ranging mainly two seasons first season is September to November and second season is March to May, these seasons are categories as a weather condition as well as volume of the visitor arrival. Till these days tourist travel occurs within the Kathmandu valley because only one international airport entry point and departure point for them. Tourism has grown as an industry worldwide in the last two and half decades and has outshined traditional industries to become one of the world's largest and fastest growing economic activities. Tourism as an Industry has attracted many scholars around the world to conduct studies and research in tourism and to find out growth, impact and trends occurring. Many scholars have found that there is a huge transition in the current times due to penetration of Information Technology in this industry. The development of Information Technology in terms of faster broadband, Web 2.0, intelligent applications, Mobile systems, GPRS, Geo

Informatics, WAP, Social Networks and Integration of almost every system through internet has created tremendous scope for the growth of this industry. There are new ways of communicating, planning a trekking, booking a flight, exploring a new destination, reserve a room in a hotel and others of similar nature. This is not only useful to a tourist but even to the players of this business who find a massive use of this technology in marketing, operations and successful implementations of their tourism business.

Governments find IT as vital tool to collect data and information about tourist, plan strategies to promote and expand tourism as an industry. IT plays a vital role as a information carrier in case of emergency situations, changing climatic conditions and other sensitive aspects. The application of IT is the most important aspect for a successful tourism economy as the whole industry relies on correct and timely information. A tourist starts its planning by looking into information about a destination, he then makes a contact with a tour operator or collects as much information as possible to make contact with local tour operator of the visiting destination and arranges for his/her visit. If the itinerary is taken by a visitor, then organizer will use a lot of IT and technology to arrange for his group and individual clients. Thus IT serves as a backbone for tourism industry integrating the beneficiaries, the service providers

and product sectors making a solid and prominent contribution and then must be studied closely to find better use of this technology. My study is an approach to explore vital aspects of IT that are prominent for Tourism industry of Nepal. In this study I bring IT connection and trekking business of Nepal in tourism. We identify the need of data and data centers and the vital role that information can play to boom the Nepalese tourism industry. The study is divided into four important parts which include the literature review, survey design and analysis, construction of an IT model for tourism and the final part discusses the prospect and challenges associated with the implementation of proposed model.

Literature review

Tourism is the main economic resources in the world so it is enter related to promotions through IT, using information technology we can promote very quick and easily all over glob wherever we are. In 21th century many researchers are broadly with regard to application of IT in tourism industry. The adoption of Computer Reservation System (CRS) in airlines in 1950s and the transformation to Global Distribution Systems (GDSs) in the 1980's, Hotel property management systems and hotel CRS systems later, are some on the oldest application of IT in tourism. The birth of Internet brought a drastically change to the structure of this industry.

In the same way, there are many researcher in Nepal who have studied on tourism and its different aspects that include tourism as an economy, impact of climatic changes on tourism destinations, tourism as source of economic and social change, Himalayan expeditions, Trekking, natural life and biodiversity, role of government in promoting tourism economy in Nepal, but there are not research specific to the role of tourism and IT connection in trekking business of Nepal industry.

Tourism and IT are the one coin of two parts so it boosts up to promote trekking business those is involving in tourism industry of Himalaya's country. Now day's internet and social link are the main part of tourism business promotion. The generic term to cover both demand and supply that has been adopted in various forms and used throughout the World. Tourism is defined as the activities of persons identified as visitors. A visitor is someone who is making a visit to a main destination outside his/her usual environment for less than a year for any main purpose holidays, leisure and recreation, business, health, education or other purpose. This scope is much wider than the traditional perception of tourists, which included only those travelling for leisure mostly they know about that's

trip through internet, social links, new paper article and recommendation from friends and family members.

Methodology

The methodology is based on primary and secondary sources. Primary sources gathered from the focus group discussion consisting of key personal of Trekking agency's' association of Nepal (TAAN), Nepal Mountaineering association (NMA) and Department of information technology. Secondary sources are collected from research articles, news papers and books.

(1) Tourism and IT connection (2) IT development (3) Trekking business (4) information center (5) easy access

Component and IT connection on trekking business

Focus group discussion among key personals of department of information technology, Trekking agencies association of Nepal (TAAN) and Nepal Mountaineering Association (NMA) and group of trekking company's holder gave their feedback to the different issues related to IT connection to Tourism business.

Table 1: Components and IT Connections

Component	IT connection
Tourism and IT connection	Tourist is known as mostly international citizen, if there is not information technology, it is very difficult to connect.
IT development	When information technology is developed then we can contact wherever we are in the world with others.
Trekking business	Trekking is a form of walking, undertaken with the specific purpose of exploring and enjoying the scenery and as this purpose when trekkers connect then it become trekking business.
Information collection	Due to the information technology it helps to collect information data of tourist in Nepal every month and every year.
Easy access	Tourism business people can easily contact with their clients all over the globe.

Discussion

1. Tourism and IT connection

Tourist is known as mostly international citizen, if there is not information technology, it is very difficult to connect. Tourism is one kind of pleasant business in the world. There is all over the people go for holiday celebration as their time. Only one country where is highest mountain in the world. Naturally beauty, many caste systems and their own languages, culture. Tourism is a main economic backbone of the country so we should connect information technology and bring new system to how we can deliver our product and natural beauty to there mind and country.

Only one information technology can make possible in the world in very short time on their devices.

2. IT development

1971 BS introduction computer in Nepal, same ways distribution personal computer in 1985 AD, established computer association, minister of science and technology in 1996 AD, information technology policy in 2000AD and announce in same year. Such a way many other electronic telecommunications developed and finally announcement of IT policy in 2010AD. Microsoft's new email system was announced on November 1, 2005, Outlook.com was first introduced on July 31, 2012, Microsoft announced May 2015, especially google user growth 2003 to 2006 then many people involving is information technology. About social we had used many and still we use many others but when facebook is launched in February 4, 2004 then facebook user drastically boom and now days many tourism business people they can promote their business for social forum too.

3. Trekking business

Trekking is a form of walking, undertaken with the specific purpose of exploring and enjoying the scenery and as this purpose when trekkers connect then it become trekking business. Trekking business is that kind of business when after registered the company they can run their company and if she/he has knowledge about trekking and information technology they can grab their opportunity very quick but if company director does not have that kind of knowledge then it will be difficult to run company. Trekking business has one positive part that mean we do need less regular staff but do not need monthly salary basis staff, I mean project basis staff if you have trip we should pay them.

4. Information collection

Due to the information technology it helps to collect information data of tourist in Nepal every month and every year. And which trekking company selling how many trekkers in the month, years as well as we will get all record of trekkers which country guest going to which trekking region so it help if they are in problem then we can rescue them collecting information from permit center.

5. Easy access

Tourism business people can easily contact with their clients all over the globe. Information technology is that using any device we can communicate, promote tourism business through any social media, website, and blog. So that trekking business people easily promoting their business staying their office and carrying any devices from anywhere through Internet.

Conclusion

Nepal has biggest possible as a tourism destination. Economic GPD of Nepal is growing from tourism so Nepal government should invest more and more and promotion in every country to bring tourist in Nepal. And Government should priority public and private partnership model. Then all Nepali people get job guest arrival to departure to their home. My research finds that IT is a main requirement and direct need of the tourism industry in Nepal. And to bring more tourism for visit Nepal 2020 and further, then Government should bring specific policies of advance information technology.

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Challenges and Opportunities of Practicing Federalism in Nepal

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Abstract

Federal restructuring of the state has emerged as a major demand of ethnic and regional activists in Nepal. The debate about it is extremely politicized. Federalism is not simply the decentralization of political power; it has become a powerful symbol for a wider agenda of inclusion, which encompasses other institutional reforms to guarantee ethnic proportional representation and a redefinition of Nepali nationalism to recognize the country's ethnic and cultural diversity. This paper has tried to analyze the information to draw the way out for the settlement of problems and get more benefits from the opportunities in federal practice. The method applied here was documentary review and content analysis of secondary data available in the form of published and unpublished theses, reports and journals. The study has revealed that there are dissatisfactions based on gender discriminations, regional disparities and religious sentiments. All these need to be managed through new constitution. This requires intensive and honest dialogue between community leaders and this is not happening as expected.

Keywords

Federalism, decentralization, inclusion, nationalism, discrimination

Introduction

The social and cultural autonomy and freedom of different communities continued even after unification for a long time but in the political front Nepal slowly and consistently came under centralized administration. Over a period of time the local systems were slowly annihilated or replaced by centralized and personalized governance system. Local identity, local aspirations and cultural and social diversity were systematically suppressed. It was followed by a state sponsored campaign for consolidation of Nepal as a one nation through imposition and promotion of one language, one culture and one religion (Hindu Religion). Nepal's diversity and indigenous community identity never got priority in state policy. Nepal since then has been under a strong center despite of division and re-division of country into various administrative districts, zones and regions from time to time. All these restructuring of administrative units were basically for strengthening central government's control, effective revenue collection and development planning purpose. Boundaries were drawn from Kathmandu for the convenience of government and bureaucrats – not for addressing local community aspirations and right to self determination. Nepal's judicial system had been constituted and reconstituted from time to time through legal indictments. However, the basic concept of law and

justice were guided by Hindu religious scriptures and customary practices of the ancient and medieval history of the Kingdom. Justice system had been administered under the religious, social, cultural and moral rules and traditional values. Most of the local disputes continued to be settled by people based local institutions (panchayats). However major crimes and state offenses were looked into by centrally controlled courts. Most of the time these courts remained a part of feudal and executive hierarchy and the concept of judicial independence did not find place in Nepal.

The western influence on Nepalese legal system started way back in the early 18th century when the first codified law (Muluki Ain) was adopted in 1853 AD. It was inspired by Napoleon Code. Nevertheless the real impact was felt after 1950s when Nepal went through a series of political upheavals. Inspired by freedom movement of India, the social elite started a peoples' movement for establishment of democracy. As an appeasement to contend growing discontentment of the people, the rulers then adopted first written constitution in 1948. It marked the beginning of constitutionalism. Under this constitution an element of separation of power and west-minister model of governance was introduced for the first time. Nepal has had six constitutions so far. The first in 1948, second in 1951, third in 1959, fourth in 1962 and fifth in 1990 and

sixth in 1963. The present constitution is basically meant to manage the constitutional transition from a unitary state to federal state. National commitment to federalism has been incorporated in the interim constitution. Constituent Assembly of Nepal is presently struggling hard to come up with an acceptable federal, democratic and republic draft constitution. The challenges are not easy and solutions are not free from controversies.

Objectives of the study

The major objective of the study was to explore and analyze the situation of the country under the philosophy of state restructuring based on the federalism and its prospects and challenges. The aim of the study was also to provide the readers about the different aspects of federalism based on Nepalese context.

Methodology

The study was carried out based on the secondary data including the unpublished and published reports and documents. The framework was generated to analyze the contents and different knowledge were generated based on the secondary data available mainly in the literatures. The reliability and validity was ensured based on the authenticity and representative data from the selected documents.

International models of federalism and nepal's choice

Nepal has studied different models of federalism that exist in different parts of the world. Perhaps the most referred federal systems in constitution making process of Nepal are American Model, Canadian Model, Indian Model, Swiss Model, German Model, and of course South Africa and Ethiopia also dominate the discussion time and again. Nepalese thinking seems to be divided in two camps (mainstream community⁶ camp and excluded community⁷ camp) and each camp has its own selfish interest to stick to their view. The main stream camp (mostly led by ruling elites) advocate for creation of Indian model quasi federal state where in central government would be superior and states would be subsidiary to national interest. This camp would advocate for restructuring of state on considerations of economy, geography, resource management, unity and territorial integrity. Local aspirations, community identity and diversity are not the priority. This view however is challenged by other camp of excluded community as a systematic design of main stream community to continue old hegemony of ruling elites. This camp has been advocating for American model federalism where

center would enjoy its power on defense, foreign affairs, currency and other national subjects and rest would be left to undefined domain of provinces. They would even advocate for restructuring of state based on ethnicity and community identity. Unity in diversity is the priority and end of monopoly in power of ruling elites through restructuring of state is their main goal. The tug of war between these two camps continues even today. Perhaps this will come to an end only when the constitution will ensure equal access to state power through new constitution and is finally voted for promulgation.

State restructuring: a major challenge in federalization of Nepal

Nepal remained a unitary state since the time of unification of Nepal by King Prithvi Narayan Shah in late 18th Century. Nepal is now trying to become a federal state. This obviously means Nepal will need to unwind itself and restructure the state to create federal units. Restructuring of state often become a hot controversial issue when a country is going federal on the basis of desegregation. The thematic committee on state restructuring has recommended for creation of fourteen provinces based on ethnicity, region, history and other considerations. The matter however remains highly disputed and controversy continue to plague state restructuring debate. Madhesi community want entire Terai belt to be declared as Madhes Pradesh while Congress party oppose ethnicity as a basis for creation of states. Congress party has been arguing for creation of five to seven big states on the basis of north south divide with a view to make them economically sustainable and viable. Maoist on the other hand officially support carving out states on ethnic lines for ethnic self rule. They proposed creation of fourteen states.

Federalism and language policy

Language has always been a contested issue in Nepal. Nepal is basically a multi-lingual state. There are around 100 languages spoken in Nepal. Out of these ten languages, Nepali (Khas), Maitheli, Bhojpuri, Tharu, Tamang, Newari, Magar, Awadhi, Bantawa, Gurung and Limbu are the major languages. They constitute almost 90% of population and out of these Nepali (Khas) constitute almost 50% population. In fact Nepali language is spoken by more than 80 percent of population and mother tongue for almost 50% in Nepal and is a lingua franca for different linguistic groups of Nepal. Interestingly in Nepal more than 90 % speak less than 10% of total languages and less than 10% speak more than 90% of languages

spoken in Nepal. Those who do not have Nepali language as a mother tongue remains highly disadvantaged in comparative sense in different fields of national life. So the new constitution has proposed to start with multi-language policy at least at the province level.

Federalism and division of power

One of the basic criticisms against the past regime was that it never had sincerity and political will in real decentralization and empowerment of people. There was no meaningful sharing of power and opportunity with excluded communities (Janajati, Madhesi, Dalit and Mahila community). Demand for federalism partly emerged as a reaction to total failure of decentralization policy in meeting local aspiration of Nepalese people for self rule and all round development. One of the major parts of federalism is division of power at different levels of government. Nepal did not go for US model of division of power. It rather preferred to go for Indian model of division of power. There is federal list, provincial list and concurrent list. Residuary power has been vested to federal government. Perhaps the unique feature of proposed concept paper on division of power is that it has listed powers for local government and special areas as well. As expected, major items of defense, foreign affairs, communication, along with national agendas and residuary power are expected to be in the federal list where as matters which immediately concern day to day life of a citizen is likely to find place in provincial list. Items such as education, industry, agriculture, health, forestry and law and order are listed in provincial list. Concurrent list include matters of common concern. The division of power has been criticized as complicated and mainly focused on Central Government. There are altogether five lists and conflicts and confusions in the initial ten years period of time is very much expected. A strong and visionary constitutional court alone may resolve these challenges in future Nepal.

Division of power has always been the soul and heart of federal polity. State restructuring committee has proposed to establish federal list, provincial list, concurrent list, special area list and local government list. Residuary power has been proposed as a federal subject. Because Nepal is transforming in to federal state through centre fugal process and disaggregation process, it is quite natural for Center to retain the major sources of income and power. This tendency of leaders of major political parties have been criticized by excluded communities as a

continuity of past tradition of denying power to the people. Madhshi and Janajati would always advocate for residuary power to provinces. The psychology of the constitution makers and communities in politics is totally misguided by a misconception that the center would remain under the control of the mainstream community and provinces would go to other communities. Federalism is not going to work that way. It is a self rule at province and shared rule at Center. Even at provinces, the government will always be multiracial and multi ethnic due to very composition of the population.

Forms of government and federal Nepal

Form of government at federal level is one area in which the major parties could not reach a consensus so far. In fact three models of government were proposed and non of them received majority support. Presidential model proposed by Maoist received 18 votes, parliamentary model proposed by Congress party received 16 votes and Mix model proposed by small parties received 3 votes. There were also individual proposal for form of government where in Prime minister would be directly elected. This proposal was moved by Mr. Narhari Acharya¹⁶. The Form of government is one issue where in the political parties have taken undue interest. Each has tried to see their hidden interest in the proposal they made. This way the matter can never be resolved. It may also be pointed out that the presidential system proposed by Maoist is theoretically contradictory. It has proposed for a directly elected executive president but cabinet appointed from parliament based on each party strength after election. Their proposal violates separation of power and check and balance which form the bedrock of presidential system. Proposal for parliament as final interpreter of constitution and provision for constitution of cabinet from among the parties in parliament does not get along with presidential system. Dispute on form of government is centered on federal level government alone. At the provincial level, the parties have agreed for parliamentary level and at the local level presidential model is agreed.

Structure of Judiciary in Federal Nepal Thematic committee of Judicial System proposed to establish three tier integrated judiciary where in there would be Supreme Court, State High Courts and Local Court. In addition there would also be local dispute settlement mechanisms and alternative dispute resolution systems. They have even proposed to recognize the traditional dispute settlement

mechanisms if they exist and ensure minimum standards of justice delivery mechanisms. The proposed integrated system is inspired by Canadian and Indian model. Perhaps the most disputed part of the report (which does not conform with Canadian or Indian Model) was entrusting of judicial function to parliament and subjugating judges and judiciary to legislature. The report proposes to establish parliament as a final interpreter of constitution, judicial review of legislation, final arbiter of interstate dispute and disputes related to major political posts of the state. This proposal has been objected by community of judges, Nepal Bar and many other political parties. The proposal is against the concept of independence of judiciary, separation of power and rule of law. Maoist who initially advocated this model has backed out their previous stand and has proposed constitutional court as compromise alternative. Outside the constituent assembly, Madhesi community and Adiwasi Janajati community have advocated for dual judiciary based on American model. Election Process for Legislatures in Province and Center Election process for constitution of Legislature has also been a contended issue. The excluded communities have been demanding double proportional representation. Proportional representation of parties based on votes caste by each party and proportional representation of different communities based on latest census. But by majority decision thematic committee has proposed to go for dual election system for the legislature. 50% would be elected by direct constituency based election in first past the post system and rest half would be elected (nominated) on the basis of proportional representation system. Each party would nominate the candidates based on proportionate representation of different ethnic communities and women. The concept paper approved mandatory one third representation of women (33.33% in the Legislature). There is also emerging demand for representation of non territorial communities such as Dalits and Muslims for purely based on their separate electorate and principle of non territorial federalism. This idea seems to be inspired by system of representation of Mauri community (aborigin people) in New Zealand Parliament.

Conclusion

Nepal is a highly divided society. In the past unity was secured through monarchy. Guardianship of monarchy backed by force of Nepal army and respect for command of King backed by divine right theory played a vital role in suppressing the inherent as well as artificially

created differences. The Kings of Nepal however could not understand the middle class desire for democracy, ambition of elite community to lead the nation and aspiration of common man for economic transformation. The Kings instead of facilitating the peoples' aspiration of democracy always preferred to regain the control and power over the people. Their unwarranted interference and divide and rule politics led most of the major political parties to conclude that the monarchy should be abolished once and for all. With the abolition of monarchy, this very bonding element was lost and people with diverse culture and interest have found freedom to ventilate their own grievances and ambitions beyond comprehension for political leadership in Nepal. Political parties, instead of managing these extremisms through sharing of vision for new Nepal based on justice and equal opportunity, unity in diversity, live and let live principles, have preferred to cash in these sentiments for their short term political ends at the cost of long term national interest. This is rapidly complicating Nepali politics and constitution making process. If the leaders fail to rise above their narrow party interest and the communities they represent, the entire social fabric will tear apart and society may plunge into multi-polar unorganized, spontaneous and violent social conflict based on hatred and animosity. The igniting point for such social conflict could be disagreement within constituent assembly for enactment of federal constitution based on self rule and shared rule. The blame game that will follow for failure of constitution making process or possible dissolution of constituent assembly may turn into nasty social conflict. Madhesi vis a vis Pahadi, Bahun Chhetri vis a vis Adiwasi Janjati, Dalit vis a vis Non Dalits, Rich vis a vis Poor, Maoist vis a vis Non Maoist are the dimensions of social and political conflict. In addition there are also dissatisfactions based on gender discriminations, regional disparities and religious sentiments. All these need to be managed through new constitution. This requires intensive and honest dialogue between community leaders and this is not happening as expected. Everything has been left to political leaders for resolving disputed issues and this may not work if it is not based on existing reality.

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Factors Affecting Choice of Data Analysis Software Use by the Students and Practitioner While Doing Quantitative Research

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Abstract

A large number of statistical data analysis software available in the market. All are not equally popular. So this article attempts to identify the factors that make the software most popular. Sources of information will be both primary and secondary. About 100 Kathmandu based organization researchers and scholars were inquired for the reason to choose the particular software. And in the paper attempt is done to find the reason of data analysis software to be popular.

Keywords

Knowledge creation, popularity of software, data analysis software

Background

Analysis leads from unknown stage to known stage. The word comes from the Ancient Greek ἀνάλυσις (analysis, "a breaking up", from ana- "up, throughout" and lysis "a loosening"[1]. It is a process of breaking a serious of events into meaningful units so that some conclusion can be drawn and problems can be solved in the organization. An analysis is an integral part of research which helps to get reality or truth. The word analysis is used in every field because all fields require knowledge which never completes, which means the work of analysis goes continuously. Bloom's taxonomy of education has stated "analysis" as cognitive process to come to evaluation of the objects being learned [2]. Analyzing is a process of disintegrating material or concepts into small readable component parts so that its organizational structure may be understood and some meaning to them can be generated. It distinguishes between facts and inferences. There seem many words to indicate analysis, the examples are analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates, etc

Bloom in his taxonomy of education has identified 5 levels of knowledge beginning from simple to complex in 50s: knowledge, comprehension, application, analysis, synthesis, and evaluation. This sequence was changed in 90s as remembering, understanding, application, analysis, evaluating and creating[6].

The application of analysis has intentions to evaluate something and create a new thing [3]. This can be observed from the Table 1

Table 1: knowledge dimension, analyze, evaluate and create

The Knowledge Dimension	Analyze	Evaluate	Create
Facts	Outline	Rank	Categorize
Concepts	Contrast	Criticize	Modify
Processes	Diagram	Defend	Design
Procedures	Identify	Critique	Plan
Principles	Different-Iates	Conclude	Revise
Meta-cognitive	Infer	Predict	Actualize

Source: Clark, Chopeta, 2004; Clark, Mayer, 2007

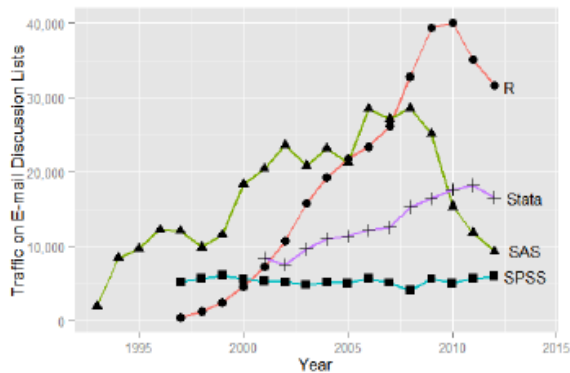
Business needs rigorous analysis before decisions. McKinsey Global Institute found that decision made by businesses differ and some make better decisions by analyzing entire datasets from customers, employees, or even sensors embedded in products[6].

Review of literature

Muenchen (2013) analyzed different data analysis software based on a number of issues like: (1) Does it run natively on your computer? (2) Does the software provide all the methods you use? (3) If not, how extensible is it? (4) Does that extensibility use its own language, or an external one (e.g. Python, R, SQL) that is commonly accessible from many packages? (5) Does it fully support

the style (programming vs. point-and-click) that you like? (6) Are its visualization options (e.g. static vs. interactive) adequate for your problems? (7) Does it provide output the form you prefer (e.g. cut & paste vs. LaTeX integration)? Does it handle large enough data sets? (8) Do your colleagues use it so you can easily share data and programs? (9) Can you afford it?

Based on the aforementioned criteria he presented popularity in a figure.



Source: Figure 1a. Sum of monthly email traffic on each software's main listserv discussion list.

Statements of the problems

What makes analytical software popular in particular are like Kathmandu, or what is popular in the world is popular too in Kathmandu. Data analysis software collects data, classify the data, records them, analyze them as demanded by user and supply them to the interested parties.

Knowledge of the individuals flow from operating of the knowledge (simple remembering the facts, understanding them, and applying them), to creating new knowledge and things(analyzing the existing knowledge, evaluating them and adding new knowledge often termed as creating). Human beings have potentials to bring knowledge of their fields to the creation level. Multiple intelligence theory advises that people differing intelligences have abilities to create something in their respective fields of intelligences [4]. But fact and mind of the individuals are not connected automatically; they need some tools and techniques. Techniques refer to different analysis as displayed in Table 2 and different software as displayed in Table 3. The problem here is to choose right software for right analysis to generate optimum level of creation that human beings can perform. Every creation of the society is the creation of the human mind. Individuals need some techniques of analysis instruments, like statistical analysis software to bridge mind and facts for the creation

of objects. The main problem of the research is to come to the right answer for which many tools are developed to analyze statistically. Does the software which has ability to handle large number of data is popular, or what else make the software popular, etc. are the problems

Cycle of creation /process of creation

The figure 1 displays the cycle of creation. When human minds encounter with some facts, then according to its capacity it tries to analyze the facts. If a statistical tools of analysis supports then their analysis will take a track and give something new, this way mind creates something.

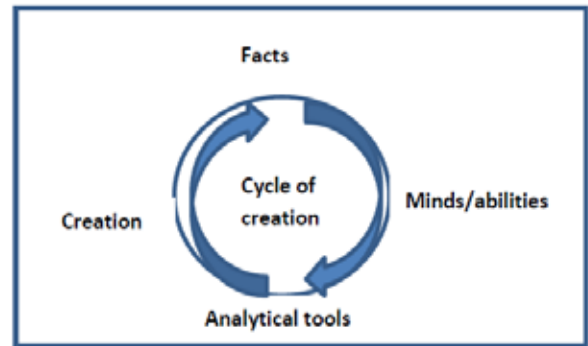


Figure 1: Relation of existing facts with new creation

Conceptual framework

The framework describes relation of independent variables like knowledge of the software, cost, ease of use, time to learn, and functions will affect the demand of the software (popularity) if intervening variables like of education, requirement of analysis, and learning need are supportive. The framework is presented in Figure 2.

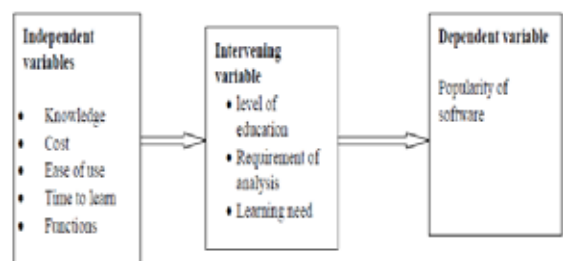


Figure 2: Relation of independent intervening and dependent variable

This article focuses on statistical analysis; they are in many forms for meeting differing objectives.

Objectives

The objectives of this article are:

- to analyze the statistical analysis software mostly used by researchers, lecturers, and practitioners in Kathmandu.

- to compare them based on the easiness of use, function, time to learn and costs and identify the popularity

Hypothesis

Here hypothesis was created to avoid the biases to start study on them, though knowledge of some of these software were with the author.

1. There is no significant differences among statistical software from the point view of analytical utility they can be useful
2. There is no significant differences in the opinions of professionals using these different software (shown in Table 3)
3. There is no differences in price of these software
4. There is no differences in easiness in using these software
5. there is no differences in time taken by each of these software to learn
6. All software are equally popular

Methodology

The research design is qualitative research design, however quantitative data were used in limited extent. Both primary and secondary data were collected. The primary data were mainly collected from Master level and Ph.D level class room, with some experts and practitioners.

Primary data: (1) Each software was used in the classroom of master classes for teaching research methodology. (2) Some major software were demonstrated in the training class of lecturer of Tribhuvan University . Such list includes: Excel Analytical tool park, Mega stat, XIStat, SPSS, PSPP, JASP, PSPP, R, Python, SAS, Stata, Statistica, Minitab, and Matlab,(3) enquiries were made with university colleges running graduate and undergraduate college on what they use to teach (4) Authors observation on these software (5) enquiries with professional about the software in regard to knowledge requirement of the software, cost, ease of use, time to learn, and functions

Secondary data: secondary were collected from literatures related to these software to reveal their use by different professionals.

Result and discussion

Some common statistical analyses done by the researchers in most of the quantitative researches are listed with their functions in Table 2.

Table 2: Different statistical analysis used in research

Analyses tools	Functions
Analysis of variance	• (ANOVA) – a collection of statistical models and their associated procedures which compare means by splitting the overall observed variance into different parts
Boolean analysis	• a method to find deterministic dependencies between variables in a sample, mostly used in exploratory data analysis
Cluster analysis	• Techniques for grouping objects into a collection of groups (called clusters), based on some measure of proximity or similarity
Factor analysis	• a method to construct models describing a data set of observed variables in terms of a smaller set of unobserved variables (called factors)
Meta-analysis	• Combines the results of several studies that address a set of related research hypotheses
Multivariate analysis	• Analysis of data involving several variables, such as by factor analysis, regression analysis, or principal component analysis
Principal component analysis –	• Transformation of a sample of correlated variables into uncorrelated variables (called principal components), mostly used in exploratory data analysis
Regression analysis	• Techniques for analyzing the relationships between several variables in the data
Scale analysis (statistics)	• Methods to analyze survey data by scoring responses on a numeric scale
Sensitivity analysis	• The study of how the variation in the output of a model depends on variations in the inputs
Sequential analysis	• Evaluation of sampled data as it is collected, until the criterion of a stopping rule is met
Spatial analysis	• The study of entities using geometric or geographic properties
Time-series analysis	• Methods that attempt to understand a sequence of data points spaced apart at uniform time intervals

What researches say about the capability of data analyses software?

Relative benefits of using different analytical software

The experience of author from the teaching and learning practices of software like these at master and Ph.D. classes, are summarized in Table 3. R and Python are totally command driven so these take time while others like SPSS and Excel are icons click types so are easier. Regarding costs factors SPSS with AMOS and SAS are expensive but Crack version of these are available free from the Torrent download and available in many countries of the world. Some limited capacity versions in the name of students version of SAS and Smart PLS (used in structural equation modeling) are free. If piracy is totally controlled then R and Python can be even more popular amidst the students and practitioners.

Table 3: Different Statistical Software for analysis (Ease of using analytical software)

	Easiness	Functions	Time to learn***	Cost
SPSS	SPSS is very popular among the practitioners because it does not require almost any training. It does calculation with button.	Quite narrow in its capabilities and allows you to do only about half of the mainstream statistics.	In a week	Highly Expensive
Excel	Very easy and does calculation with button	Limited main stream calculation**	In a week	Medium expensive
Python	Medium level easiness	All the main stream calculation	In 4 weeks	Free
R	Medium level easiness	All the main stream calculation	In 4 weeks	Free
SAS	Medium level easiness	Most of the main stream calculation	In 3 weeks	Highly Expensive
STATA	Very easy and does calculation with button	Limited main stream calculation	In 2 weeks	Medium Expensive

*For detail see annex1 Table, ** with addon of megastat, realstat and XLstat, *** assuming knowledge of basic and multivariate analysis is pre-requisite

Universities and colleges of Kathmandu valley

Table 4: Enquiries about data analysis software

Organization	Inquired	Software	Nature of works
Universities and colleges	50	82% SPSS 16% Excel 2% Python	Teaching (descriptive and analytical)
Free-lance researchers	20	40% SPSS 40% Excel 20% R	Analysis (descriptive and analytical)
Government departments	10	20% Python 80% Excel	Analysis(descriptive and analytical)
Others (Private forms)	10	100% Excel	(Descriptive and analytical)

Source: field work

About 100 organization enquired includes 50 % from school colleges. The reasons for choosing more from school colleges were to see how trained graduates are produced in the country.

Demonstration of analytical software

In a session of 30 lecturers of different faculties consisting business management, mathematics and statistics, Excel Analytical tool park, Mega stat, XIStat, SPSS, PSPP, JASP, PSPP, R, Python, SAS, Stata, Statistica, Minitab, and Matlab were demonstrated where they were to choose so that their training on statistical analysis were to start. This was a beginning session of their training. The trainer demonstrated each statistical software in the three hours session and requested to choose one, unanimously they said” if excel can do all functions which they have in their laptop installed why they should try other” .

In another instance in a class of Executive MBA the students were asked what they want to learn. All these graduates were from different departments. These students said their interest to learn Python.

In another college there were in the pressure to complete MBA research methodology course, they were asked they took interest to learn ‘R’ but due to limited time they learned Excel.

Cost of the analytical software

R and Python are free software. They are open source software. In place of these two if any other software to be used it becomes expensive. So, the users of R and Python need not to be worried if new versions are developed. Different packages for these are developed and distributed free.

Calculation of many iterative processes

Many problems related to many analyses like Stochastic Optimization, Deterministic Optimization, Wavelet Analysis, Signal Processing, Support Vector Machines, Random Forests, Boosting, Classification & Regression Trees, Neural Networks, Cluster Analysis, Markov Chains, Diffusions, Stochastic Volatility Models, Continuous Case, Variance Stabilization, Extreme Value Theory. etc are such a complex analysis can not be performed by all softwares as these can done by R and python only. However, limited researches use these analytic tools, so SPSS and Excel are popular. Only some software is capable of handling all analysis of complex nature. R comes on the top and is followed by python and SAS.

Some researches on data analysis

In the researches of last three years it can be seen that R is becoming popular due to its analytical power. R has been taken as perfect software designed to run statistical analyses and output graphics. Ooi (2016) has appreciated R stating that it is extraordinary in the sense of its ability to perform. R has beat one of the its competitors SAS by developing one code in place of three programming language of the SAS. R has strong support from authors, for instance, Ooi, (2016) has stated R can handle big data sets, and even be more popular in the coming days ahead. R’s analytics-side of the equation is very strong.

Next popular software after R is Python which is also free. Libraries like numpy, matplotlib, and pandas has made Python popular though it is known as general programming language. It also can run analysis of data and keep the data integrity. Schools, now, are found interested to teach their students Python in junior grades because Python can be learnt without details like types, compilers, and writing boilerplate code, and other algorithms.

Python has been gaining popularity as being the programming language for new users. Many highly ranked universities and their departments have chosen Python as their first language to teach their students[9]. Many popular open online courses like edX, Coursera, and Udacity provide have started Python as their beginning programming courses. Many professors and students are taking interest in learning Python as they observed the jobs available in the market.

Result of hypothesis test

The Table 5 displays the result of the hypothesis made in this research.

Table 5: conclusion over hypothesis made to start research

Hypothesis	Accepted / rejected
1. There is no significant differences among statistical software from the point view of analytical utility they can be useful	Rejected
2. There is no significant differences in the opinions of professionals using these different software (shown in Table 3)	Rejected
3. There is no differences in price of these software	Rejected

4. There is no differences in easiness in using	Rejected
5. There is no differences in time taken by each of these software to learn	Rejected
6. All software are equally popular	Rejected

Findings

These days' data analysis without computer and statistical software is almost impossible. The task of multivariate analysis has gaining popularity due to the availability different software. In every types of quantitative research irrespective of the subject demands for statistical data analysis software is increasing. The demand for free and open source has been increasing, so software like R and python has greater future use prospects. In Kathmandu the increased use, at present, for Excel and SPSS is due to availability of them in crack version (piracy).

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Annex 1

Table 6 Table showing analyses capacity of some frequently used software in Kathmandu by students, and practitioners.

Type of Statistical Analysis	R	Python	SAS	STATA	SPSS	Excel
Nonparametric Tests	Yes	Yes	Yes	Yes	Yes	Yes
T-test	Yes	Yes	Yes	Yes	Yes	Yes
ANOVA & MANOVA	Yes	Yes	Yes	Yes	Yes	Yes
ANCOVA & MANCOVA	Yes	Yes	Yes	Yes	Yes	Yes
Linear Regression	Yes	Yes	Yes	Yes	Yes	Yes
Generalized Least Squares	Yes	Yes	Yes	Yes	Yes	Yes
Ridge Regression	Yes	Yes	Yes	Limited	Limited	
Lasso	Yes	Yes	Yes	Limited		
Generalized Linear Models	Yes	Yes	Yes	Yes	Yes	Yes
Logistic Regression	Yes	Yes	Yes	Yes	Yes	Yes
Mixed Effects Models	Yes	Yes	Yes	Yes	Yes	Yes
Nonlinear Regression	Yes	Yes	Yes	Limited	Limited	Limited
Discriminant Analysis	Yes	Yes	Yes	Yes	Yes	Yes
Nearest Neighbor	Yes	Yes	Yes		Yes	Yes
Naive Bayes	Yes	Yes			Limited	Limited
Factor & Principal Components Analysis	Yes	Yes	Yes	Yes	Yes	Yes
Canonical Correlation Analysis	Yes	Yes	Yes	Yes	Yes	Yes
Copula Models	Yes	Yes	Limited			
Path Analysis	Yes	Yes	Yes	Yes	Yes	Yes
Structural Equation Modeling (Latent Factors)	Yes	10+ code	Yes	Yes	AMOS	
Extreme Value Theory	Yes	Yes				
Variance Stabilization	Yes	Yes				
Bayesian Statistics	Yes	Yes	Limited			
Monte Carlo, Classic Methods	Yes	Yes	Yes	Yes	Limited	Limited
Markov Chain Monte Carlo	10+ code	10+ code	10+ code			
EM Algorithm	10+ code	10+ code	10+ code			
Missing Data Imputation	Yes	Yes	Yes	Yes	Yes	Yes
Bootstrap & Jackknife	Yes	Yes	Yes	Yes	Yes	
Outlier Diagnostics	Yes	Yes	Yes	Yes	Yes	
Robust Estimation	Yes	Yes	Yes	Yes		
Cross-Validation	Yes	Yes	Yes	Yes		
Longitudinal (Panel) Data	Yes	Yes	Yes	Yes	Limited	
Survival Analysis	Yes	Yes	Yes	Yes	Yes	
Propensity Score Matching	Yes	Yes	Limited	Yes		
Stratified Samples (Survey Data)	Yes	Yes	Yes	Yes	Yes	Yes
Experimental Design	Yes	Yes	Limited			
Quality Control	Yes	Yes	Yes	Yes	Yes	Yes
Reliability Theory	Yes	Yes	Yes	Yes	Yes	
Univariate Time Series	Yes	Yes	Yes	Yes	Limited	Limited
Multivariate Time Series	Yes	Yes	Yes	Yes		
Stochastic Volatility Models, Discrete Case	Yes	Yes	Yes	Yes	Limited	

Stochastic Volatility Models, Continuous Case	Yes	Yes	Limited	Limited		
Diffusions*	10+ code	10+ code				
Markov Chains	10+ code	10+ code				
Hidden Markov Models	Yes	Yes		Yes		
Counting Processes	Yes	Yes	Yes			
Filtering	Yes	Yes	Limited	Limited		
Instrumental Variables	Yes	Yes	Yes	Yes	Yes	
Simultaneous Equations	Yes	Yes	Yes	Yes	AMOS	
Splines	Yes	Yes	Yes	Yes		
Nonparametric Smoothing Methods	Yes	Yes	Yes	Yes		
Spatial Statistics	Yes	10+ code	Limited		Limited	
Cluster Analysis	Yes	Yes	Yes	Yes	Yes	Yes
Neural Networks	Yes	Yes	Yes		Limited	Limited
Classification & Regression Trees	Yes	Yes	Yes		Limited	Limited
Boosting	Yes	Yes	Limited			
Random Forests	Yes	Yes	Limited			
Support Vector Machines	Yes	Yes	Yes			
Signal Processing	Yes	Yes	Limited			
Wavelet Analysis	Yes	Yes	Yes			
Bagging	Yes	Yes	Yes	Yes		
Meta-analysis	Yes	10+ code	Limited	Yes		
ROC Curves	Yes	Yes	Yes	Yes	Yes	Yes
Deterministic Optimization	Yes	Yes	Yes	Limited		yes
Stochastic Optimization	Yes	Yes	Limited			yes

*I use label "10+ code" if the required programming is more than 10 lines of code in more than 30% of typical projects.

Source : Statistical & Financial Consulting by Stanford PhD, retrieved from http://stanfordphd.com/Statistical_Software.html with inquiry of excel

Annex 2

Interview/questionnaire

Some queries made undertake this research

1. What researches say about the capability of data analyses software?
2. Which data analysis software you prefer, please rank them in the order of 1,2,3,4 for first preference to last preference
3. Your profession?

Software	Rank
Excel Analytical tool park, Mega stat, XIStat,	
JASP,	
Matlab	
Minitab,	
PSPP,	
Python,	
R,	
SAS,	
SPSS,	
Stata,	
Statistica,	

