

24th International Conference on IT Applications and Management

THEME: TECHNOLOGY-BASED DISTANT COLLABORATION

FEBRUARY 19, 2021

INTERNATIONAL ITAM SOCIETY, KOREA DATA STRATEGY SOCIETY



5. Keynote speech



Keynote Speech 1: "Learning from Samsung's technology strategy"
Dr. Yeong Duk Cho
 •Former Samsung vice president in Technology planning
 •Author, "Technology Strategy"



Keynote Speech 2: "Back to campus: Sharpen your mind in time of crisis"
Dr. Yanki Hartijasti
 •University of Indonesia



Keynote Speech 3: "Leadership and the new abnormal for UK-Asia after Brexit and Covid"
Dr. Kanes Rajah
 •Chairman, Center for Executive and Professional development, London
 •Advisor to the Prime Minister, Malaysia

24th International Conference on IT Applications and Management

Theme: Technology-based Distant Collaboration

February 18, 2021



Supported by:
Korea Database Strategy Society (KDSS)

24th International Conference on IT Applications and Management

THEME: TECHNOLOGY-BASED DISTANT COLLABORATION

On-line Conference February 18, 2021

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Topics for the submission include but are not limited to:

- e-Tourism, e-Health, e-Education and Technological Evolution
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- Data Management Strategies and Technologies
- Data Analytics and Business Informatics
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Submissions:

Prospective authors should submit 6-10 pages of manuscript electronically.
Submitted papers should follow ITAM paper format consistent to APA standard.
Submission : njcho@hanyang.ac.kr, kdbs@kdbs.or.kr
Submission guidelines are at: <http://www.kdbs.or.kr>

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Important Dates:

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24TH INTERNATIONAL CONFERENCE ON IT APPLICATIONS AND MANAGEMENT

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Conference Plenary Session (February 18, THURSDAY)

Zoom Topic: ITAM-24 On-line Plenary Session

Zoom access: <https://zoom.us/j/91332666103?pwd=K2ZyUmhPb3B5TGxzTGxBdXhPMmxqUT09>

Meeting ID: 913 3266 6103 P Code:8dd0ft

Time	Plenary Session Program
16:00 ~18:00 (East Asia time)	Session Chair: HeeSun Kim(Yonsei Univ., Korea) Opening Announcement - Jung Seung Lee (Chair of Org. Committee, Hoseo Univ., Korea) Online on-the-spot greetings among participants. Congratulatory Remarks - Parag Mankeekar (Founder and CEO, RealLive) - Upinder Dhar (Vice Chancellor, SVVV, India) Inauguration Greeting - Myeong Gil Choi (President of KDSS, Chung Ang U., Korea) - Sateesh Kumar Ojha (Publication Chair, Lincoln Univ. Nepal) - Santosh Rangnekar (Advisory Board of the Conference, IIT Roorkee, India)
07:00 ~ 09:00 GMT	Keynote Speech 1: Yong Duk Cho (Former Samsung v.p. Technology Planning) Theme: Learning from Samsung's Technology Strategy Keynote Speech 2: Yanki Hartijasti (Univ. of Indonesia) Theme: Back to Campus: Sharpen Your Mind in time of Crisis Keynote Speech 3: Kanes Rajah (Chairman, CEPD London) Theme: Leadership and the New Abnormal for UK-Asia after Brexit and Covid Valedictory Remark - Namjae Cho (Chairman, International ITAM Society, Hanyang U. Korea)

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Technical Sessions (Access by session by track, <http://www.itamsociety.org/>)

Time	Track A	Track B	Track C
Session 1	Session A1 Entrepreneurship and Family Business	Session B1 Digital-based Innovation	Session C1 Work Environment
	How Top Management Team Diversity Affects Innovation and Company Performance? Anthony S.C. Tsui (Zhuhai Bright Ocean Edu.), Bernard Lee (The U. of Oxford, UK), Oliver H.M. Yau (Open U. of Hong Kong) Analysis of Factors that Affect Successor's Willingness in a Family Business: Using the Relationship of Trust as Mediating Variable Giseob Yu, Namjae Cho (Hanyang U., Korea) A Case study on Building Trust on Succession in a Family Business: Using Eisenhardt Case Study Method Giseob Yu, Namjae Cho (Hanyang U., Korea) The Role of Youth Entrepreneurship for Economic Development in Nepal Gopal Bahadur Bhandari (Lincoln U. College, Malaysia)	The Success of Smart Factory Adoption: Firm's Dynamic Capability Perspective Gyeong-min Kim, Mi-Jeong Nam (Ewha Womans U., Korea) Analysis of Indonesia's Digital Industry and the Case of Gojek Namjae Cho, Firti January Anindya (Hanyang U., Korea) Exploring the effect of overload on the discontinuous intention of SNS: the moderating effect of gender Yu Xiang Xia, Seong Wook Chae (Hoseo U., Korea) Misinformation detection and rectification based on QA system and text similarity with COVID-19 Insup Lim, Namjae Cho (Hanyang U., Korea) The present and future of the electric vehicle battery market Jung Seung Lee, Hye Jin Kim (Hoseo U., Korea)	Organizational humor, work space and time HeeSun Kim (Yonsei U., Wonju, Korea) Attaining Self-Transcendence through Self-Kindness: The mediating role of Humanity Rahul Khurana and Santosh Rangnekar (IIT, Roorkee, India) Employees' intention to leave job – The case of Micro finance institution Rabin Subedi, Surendra Neupane, Raju Ram Adhikari (Lincoln U. College, Malaysia, Tribhuvan U., Nepal) Co-Worker Support and Communities of Practice: Examining the mediating role of employees' Personal Interaction Anjali Dutta, Santosh Rangnekar (IIT, Roorkee, India)
Session 2	Session A2: Work Practices	Session B2 Innovation in Public Services	Session C2: Social Transformation
	Packaging and Promotion of Consumer Products in Nepalese Organization Dr Dwarika Upreti (Nepal Mega College, Tribhuvan U., Nepal) Impact of Employee Participation in Decision-making and Organizational Performance: a Review of Literature and Implications for Future Research Nilesh Kumar Tiwari, Santosh Rangnekar (IIT, Roorkee, India) A Systematic Review of Learning from Reflection literature: 2000-2020 Mohit Pahwa, Santosh Rangnekar (IIT, Roorkee, India)	Smart, sustainable and resilient (SSR) healthcare supply chain: A Fuzzy-AHP Approach Kamal Hossain, Vikas Thakur (National Institute of Technology, Rourkela, India) Can e-learning enhance the maximum access to education and quality in a developing country: with special reference to Nepal Sateesh Kumar Ojha, Jagadish Chandra Wagle (Lincoln U. College, Malaysia) The Impact of Knowledge Sharing on the Organizational Innovation among Private Universities in Malaysia Ali Ameen, Pradeep Bastola, Dhoha Younis, Neupane Chanda, Osama Isaac (Lincoln U. College, Malaysia)	Quality Assurance in Engineering Education: Provision and Practices in Nepal Basanta Chandra Marahatta (Lincoln U. College, Malaysia) Effectiveness of School Dropout Prevention Practices in Nepal Jayaram Wagley (Lincoln U. College, Malaysia) Integrating Values in Education: Managing Learning Crisis for Sustainable and Holistic Achievement Romkanta Pokhrel (Lincoln U. College, Malaysia) The pricing is a tool of controlling the alcohol consumption Yeak Narayan Sharma (Tribhuvan U., Nepal)

How Top Management Team Diversity Affects Innovation and Company Performance?

Anthony S.C. Tsui

Zhuhai Bright Ocean Education Consulting Co., Ltd

Bernard Lee**

The University of Oxford, UK

Oliver H.M. Yau

Lee Shau Kee School of Business and Administration, The Open University of Hong Kong, Homantin, Hong Kong, SAR

**All three authors make equal contributions to the journal paper.*

***Corresponding Author: Bernard Lee, University of Oxford*

Tel: +44(0)7922 163036

Email address: bernardlee2007@gmail.com

Abstract

There has been an increasing devotion to the gender balance on executive boards in China. There has been an assumption that increasing the proportion of women in the highest jobs will improve company performance and corporate governance. This research paper tests this assumption by studying a sample of 305 publicly listed healthcare companies in China in the period 2016-2019. We find that the choice of gender for board chair and CEO has a more impact on company performance than merely increasing the proportion of women on boards. Assessing the impact on company performance of different gender composition of board chairs and CEOs, we use an innovative approach to measure the relationship, using a proxy measurement in R&D, sales, and marketing expenses.

Keywords: gender, board chair, CEO, R&D investment, sales performance, marketing expenses

1. Introduction

Widening gender diversity and visible minority representation in publicly listed companies' top jobs continues to be a hot issue for executive committees. Women growing concerns about gender equality have led to regulations (Chiericato, 2020), such as gender quotas, to increase women's representation on corporate boards. Institutional investors have also used the board gender diversity policy as one of the criteria for investment in a firm (Adams & Ferreira, 2009). They proposed increasing the proportion of women directors based on

the assumption that this will be good for company performance and corporate governance.

A complication with these proposals is that a single focus on proportionality may not reflect women directors' actual performance (Adam et al., 2010; Christiansen et al., 2016; Guo & Masulis, 2015). Green & Homroy (2018) found that increasing the proportion of women directors had no statistically significant association with company performance in the U.K. Moreover, the Gender Diversity and Board Quotas Bill in California (SB 826) received criticism because it considered the result rather than the means of achieving such an outcome. In other words, appointing women directors may have become a regulatory requirement rather than reflect a sound economic decision-making process (Greene, Intintoli, & Kahle, 2020).

The relationship between company performance and board gender diversity has been studied. We have found little focus on the interaction effects of a male and women board chair and CEO (Guo & Masulis, 2015). It is assumed that the integration of women directors in corporate governance will positively affect company performance. Further, gender diversity seems to bring fresh ideas, perspectives, and different skill sets into the board room. The imagined ideal is that men and women directors can synergize their differences working towards a paradigm shift for a company. However, little

2. Model and Hypotheses Development

empirical research evidence has backed up these claims.

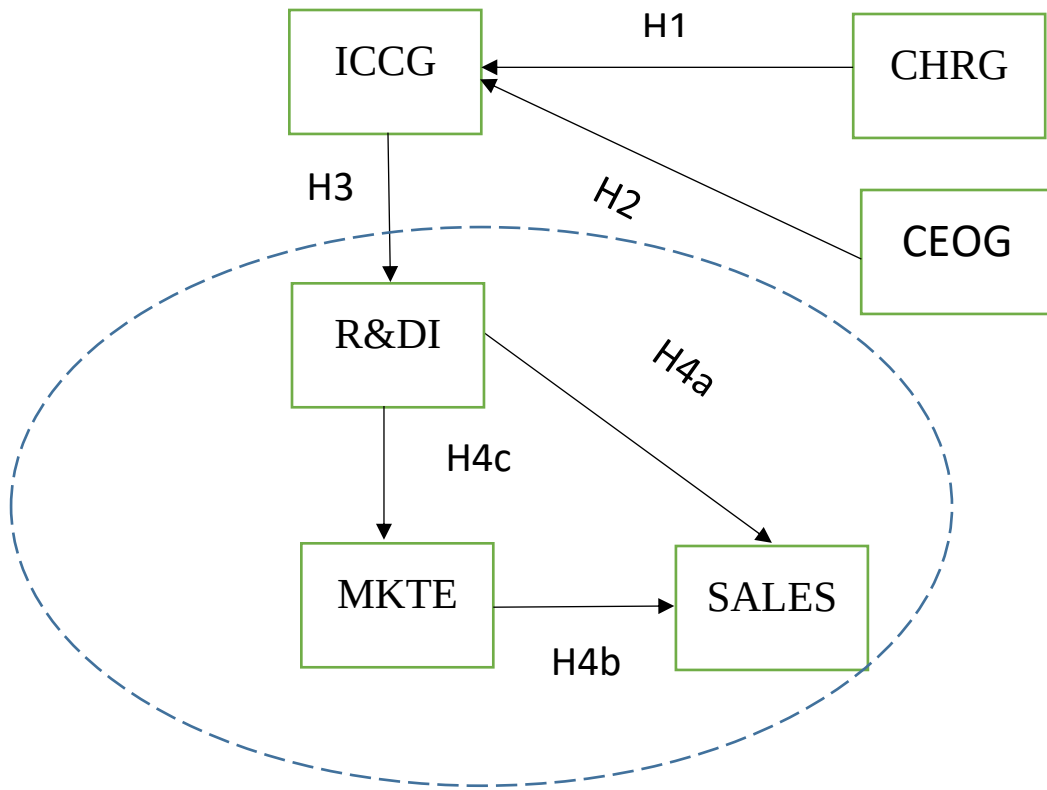
This paper aims to explore three objectives about these claims. First, we provide new data correlating the choice of gender in the Chair and CEO positions to sales performance. Our study uses data from public listed China healthcare companies, with less than 10% of our sample companies having women directors holding board chair or CEO positions

The second objective is to examine the impact on women directors' performance when interacting with male directors. While studying the performance impacts of the Gender of a board chair and the Gender of CEO, we seek to identify how various gender compositions exert control over R&D investment.

The third objective is to use a proxy for performance data on marketing expenses as a mediator of R&D investment and sales. It seems that both R&D investment and marketing expenses are in a line-relationship position rather than a staff-relationship role within an organizational structure.

We organize this paper as follows: Section 2 devotes itself to developing the model and hypotheses. Section 3 explains the research methodology. Section 4 explains the results, and the following section presents the conclusions and limitations.

Figure 1: The Conceptual Model



2.1 The Model

Figure 1 depicts the proposed model with six variables: Gender of board chair (CHRG) and CEO (CEOG), the interaction of Gender of board chair and CEO (ICCG), R&D investment (R&DI), marketing expenses (MKTE), and sales performance (SALES). Taking the associations among these variables into consideration, we develop seven hypotheses: Hypotheses 1, 2, 3, 4, 4a, 4b, and 4c. The last three hypotheses pertain to the examination of the mediating effect. The two exogenous variables are CHRG and CEOG, while the four endogenous variables in this model are ICCG, R&DI, MKTE, and SALES. In the upper part of Figure 1, both CHRG and CEOG have an impact on ICCG. The lower part of Figure 1 is more complicated as it indicates the mediating effect of marketing expenses between R&DI and SALES. The relationship between ICCG and R&DI links the two parts of the model.

2.2. Hypotheses Development

This section describes how we developed our hypotheses in the model. We first introduce brief literature on the key variables and then offer arguments for the relationship between variables, which form a hypothesis. It is essentially a three-step approach. For example, we first introduce the exogenous variable, the gender of the board chair, then the endogenous variable, the interaction of Gender of the board chair and CEO, and finally discuss their relationships.

2.2.1. gender of board chair

Seeking clarity on the theory around the gender of board chairs is fragmented. We see recent studies developed in several directions.

The first is about the ethical issue of gender balance (Bøhren & Staubo, 2014; Sun, Zhu & Ye, 2015; Oliver et al., 2018). The second examines the performance of gender orientation and performance (Dobbin & Jung, 2010). Valls Martinez, Cruz Rambaud, & Parra Oller (2019) and Ye et al. (2019) refer it to either a male Chairperson or a female Chairperson in an organization. In this study, we adopt the same definition for the gender of the board chair in the listed healthcare companies.

2.2.2. Gender of CEO

The theory around the Gender of the CEO is complex. The first theme is concerned with ethical issues. Wu et al. (2019) examined women executives and corporate social responsibility, while Wolfers, J. (2006) explored gender discrimination in hiring CEOs. The second theme scrutinizes the effect on innovation. Gomez-Mejia et al. (2019), Ullah, Fang, & Jebran (2019), and Liao, Zhang, and Wang (2019) examined how women directors influence firms' environmental innovation. Third, Faccio, Marchica & Mura (2016) and Khan & Vieito (2013) looked into how CEO's Gender affects company performance.

All the above studies have one thing in common; they intrinsically defined gender. The Gender of the CEO refers to either a male CEO or a female CEO in an organization. In our study, we apply the same definition to the listed healthcare company.

2.2.3. Interaction of the Gender of board chair and CEO

It refers to mixing the gender of male and female board chairs with the Gender of male and female CEOs in listed healthcare companies. There are four combinations:

Gender of Board Chair + CEO
Interaction Variable

1. a female board chair with a female CEO (F + F) homogenous coded as 1
2. a female board chair with a male CEO (F + M) heterogenous coded as 2
3. a male board chair with a male CEO (M + M) homogenous coded as 1
4. a male board chair with a female CEO (M + F) heterogenous coded as 2

We further divide these combinations into two groups: homogenous gender group coded as 1(one) and heterogeneous gender group coded as two (2). We call this process "interaction."

The interaction of the gender of the board chair and CEO is a new variable that we developed for this study. We are not aware of other studies adopting this approach.

2.2.4. Relationship between Interaction of Gender of Board Chair and CEO and Gender of

Board Chair

Hence, we propose the following hypothesis.

Hypothesis 1: Gender of board chair has a positive impact on the interaction of the

Gender of Board chair and the
Gender of the CEO. That is, male
board

chair tends to influence the
choice of male CEO, whereas female
board

chair tends to influence the choice of
male CEO.

3.2.5. Relationship between Interaction of Gender of Chairperson and CEO and Gender of CEO

Similarly, according to a study of the listed companies in Vietnam, Tran, Phung, Yang, and Wang (2020) find that women CEO reduces systemic and individual risks. However, there is little study about the Gender of the CEO has a significant positive impact on gender diversity.

Therefore, the following hypothesis emerges.

Hypothesis 2: Gender of CEO has a positive impact on the interaction of the gender of

the board chair and the
Gender of the CEO. A male CEO
prefers to work

with a male board chair,
whereas a female CEO prefers to
work with a

male board chair.

2.2.6. R&D investment

The literature on R&D investment gives various definitions. The most commonly accepted one is from Hsu & Cohen (2020) and Diéguez-Soto et al. (2019). They define R&D investment as all the costs related to the development of new offerings. These costs include products and services, comprising software investments, amortization of software investments, and company-sponsored R&D. One practical way to select the appropriate definition is to consider if there is accurate data available (Lu, Sheng, & Wang, 2020). This definition is the one we use in our model.

It is worth noting that R&D investment should not include government or customer sponsored R&D investment.

3.2.7. Relationship between Interaction of Gender of Chairperson and CEO & R&D investment

Previous studies show that gender diversity in the board can bring a significant positive impact on organization performance as women CEO and board chair are less risk-averse than male directors (Poletti-Hughes, & Briano-Turrent, 2019; Nadeem, Suleman, & Ahmed, 2019; Budi, 2019; Appelman, 2019; AlHares et al., 2020). A study of 155 non-financial companies was retrieved from the Datastream database from 2004 to 2014 using the two-stage least squares method, Poletti-Hughes, & Briano-Turrent (2019) find that board gender diversity can increase risk-averseness and, in turn, reduce R&D investment.

Hence, the following hypothesis emerges.

Hypothesis 3: The interaction of the gender of the board chair and the Gender of the CEO positively impacts R&D investment. The same genders of Board chair and CEO tend to increase the R&D expenses, whereas opposite genders of Board chair and CEO tend to reduce the R&D expenses.

2.2.8. Company performance

The literature on company performance is enormous. There are at least three key themes. The first theme assesses the company performance from a marketing approach, using a single indicator as an endogenous variable, such as sales and competitive

advantage. Zhu, Zhao, & Abbas (2020) adopted sales as a single indicator of performance in examining its triangular relationship with R&D investment and marketing expenses.

The second theme is related to utilizing a single financial indicator, such as cash flow (Sun, & Ding, 2020), total assets (Ma, 2019; Zhang & Jia, 2020), gross profit (Negru & Buzgurescu, 2019), and P.E. ratio (Yung, Lin, & Gan, 2019). A final theme is a performance using a latent variable or constructs instead of a single indicator in the former two streams. The construct is mostly built by grouping psychological variables using exploratory factor analysis (Tse et al., 2003; Yau et al., 2007). As our study adopts an available public dataset, we will not be considering using any psychological data or scales in the third stream. Further, as we deal with marketing expenses and R&D investment in the proposed model, sales as a performance indicator seem most appropriate. As such, consistent with prior studies (Spyropoulou, Katsikeas, Skarmas, & Morgan, 2018; Gregory, Ngo, and Karavdic, 2019), we define company performance as the total sales yielded by listed healthcare companies.

2.2.9. Relationship between R&D investment and Company performance

Since there is a trend for the CEO or the board chair of large organizations or listed companies to spend a substantial amount of money in R&D, it is worth noting the importance of the effectiveness of the R&D investment to the company performance. Previous studies have ascertained that R&D investment can enhance the market value of

the company (Hall & Oriani, 2006; Lantz, & Sahut, 2005; Schwartz, Miller, Plummer, & Fushfeld, 2011; Špacek, & Vacík, 2016; Lee, 2019; Ravselj, & Aristovnik, 2019; Wang, Du, Koong, & Fan, 2017; Sharma, Davcik, & Pillai, 2016).

Over the past few decades, top I.T. companies such as Apple, Microsoft, Tesla, Alibaba, and Tencent have tended to increase the percentage of their investment in R&D in the hope that they can generally enhance their companies' performance (Hsu, & Cohen, 2020; Diéguez-Soto et al., 2019). As we mentioned in the last section, company performance's common indicators are ROI, ROE and ROA, market competitiveness, stock price, sales, and higher operation value (Wang, Du, Koong, & Fan, 2017). However, the results of the above studies are mixed. The money spent on R&D investment in I.T. companies has increased because they believe that R&D investment can augment their market competitiveness and increase their chance of competing in the patent race.

Results of the impact of R&D investment on company performance are mixed. First, we have found positive impacts of R&D investment on company performance. Second, R&D investment seldom negatively influences company performance. Its failures may be due to uncertainty, risk factors, and time factors (Xiong, Wang, & Zhao, 2020; Ravselj, & Aristovnik, 2020; Yoo, Lee, & Park, 2019). Third, R&D investment and company performance may have a non-linear relationship (Ho, Keh, and Omg, 2005). In a study conducted by Xiong, Wang, & Zhao (2020), the moderators of financial

development and government intervention positively and negatively affect the relationship between R&D investment and company performance in the PRC. Ravselj & Aristovnik (2020) found that tax incentives and government subsidies can enhance R&D investment in company performance in high-risk environments.

An exciting study serves as an example of revealing the diverse nature of the relationship between R&D investment and company performance. Ho, Keh, and Omg (2005) found that R&D investment does not affect the nonmanufacturing company's stock value, whereas it positively impacts the manufacturing company's stock value.

As the results are mixed, we propose to reconfirm the following hypothesis:

Hypothesis 4a: Increased R&D expenses yields increasing sales.

2.2.10. Marketing Expenses

Marketing expenses are an essential expenditure for businesses needed to attract customers.

We can summarize the literature in four areas. The first area relates to marketing expenses with company performance (Memarista, & Gestanti, 2018; Tudose & Alexa, 2017; Konak, 2015; Sharma & Husain, 2015; Van Triest et al., 2009, and O'Neill, Hanson & Mattila, 2008). We defer discussion of this area to Section 3.2.1.2, which pertains to its relationship with company performance.

The second area looks into the efficiency of marketing expenses. Papadimitriou & Prachalias (2009) examined global telecom companies' capability to maximize the input

factors' efficiency, including marketing expenses. Treating marketing expenses as a marketing strategy forms the third area. Luo, X. (2008) argued that prudent investors might be better to pick 'star' IPO if they can track pre-IPO marketing expenses. Parida's (2018) study investigating the impact of market competition on mutual fund marketing expenses represents the fourth area. We regard this as one of the rare studies which treat marketing expenses as a dependent variable.

Most of the studies in the above four areas do not explicitly define marketing expenses. To be consistent, we follow and adopt the definition suggested by Ptok, Jindal, & Reinartz (2018), Traina (2018), and Mishra & Ewing (2020). In this study, marketing expenses are the total expenses spent on advertising and promotion and related marketing activities, including selling, general, and administrative expenses (SGA) in marketing in listed healthcare companies.

2.2.11. Relationship between R&D investment and Marketing expenses

Previous studies have revealed that both R&D investment and marketing expenses work together to produce significant positive company performance (Zhu, Zhao, & Abbas, 2020; Akyüz, & Berberoğlu, 2016). However, the result is mixed. According to Akyüz and Berberoğlu (2016), an increase in R&D investment reduces advertising expenses. Similarly, a decrease in R&D investment results in more considerable advertising expenses. According to a longitudinal study in the PRC, where marketing was considered part of the absorptive capacity, this direct absorptive capacity serves as a significant

moderating variable between R&D investment and its performance (Zhu et al., 2020). Lee (2013) has reported that increasing R&D investment yields a higher brand value for market-driven companies. Since the results are mixing, we need to reexamine the relationship between R&D investment and marketing expenses. Hence, the following hypothesis emerges:

Hypothesis 4b: Increased R&D Investment (R&DI) yields increasing Marketing Expenses (MKTE).

2.2.12. Relationship between Marketing expenses and Sales performance

Long term customer relationship or customer relationship management has received recognition as a cost-effective marketing tool in the last two decades (Trif, Duțu & Tuleu, 2019; Rashwan, Mansi & Hassan, 2019; Yan et al., 2019; Meesala & Paul, 2018). There is strong evidence that the healthcare industry's service environment is beneficial to the marketing of services and product awareness, resulting in potential company growth (Yan et al., 2019). A research study also found that the health care service provider's good service can produce better company performance (Meesala & Paul, 2018). Listed companies who increased their advertising expenses after shareholder complaints were able to fend off hostile takeovers (Wies, Hoffmann, Aspara, & Pennings, 2019).

Despite negative evidence, the relationship between marketing expenses and company

performance is positive in most cases. Hence, we propose the following hypothesis:

Hypothesis 4c: Increased Marketing Expenses (MKTE) yield increasing Sales Performance (SALES).

2.2.13. Mediating effect of Marketing expenses between R&D investment and Sales performance

Since quite a few factors enhance sales in different industries. In our sample of 305 publicly listed companies in the health care industry, we saw that CEOs and their Boards encountered dilemmas when seeking to allocate expenses to R&D and marketing to achieve economic success, such as sales performance. Some companies found that it was a trade-off between R&D and marketing (Ganguli, 2009). We argue that R&D and marketing is not a trade-off but a synergetic relationship. The healthcare industry is greatly R&D-driven (Zucchi, 2019), and marketing plays a significant role (Anning-Dorson, Tackie, & Boadi, 2019).

We expect there is a full mediation among R&D investment, Marketing expenses, and Sales performance. However, if we reject H4a, a partial mediation will be identified. Often, CEOs need to make a tough decision when allocating the company resources or budget for the R&D department through the marketing department.

Previous studies have found that the joint influence of R&D investment and marketing expenses strongly impact company sales when they are employed simultaneously (Krishnan, Tadepalli, & Park, 2009; Ganguli, 2009). We posit that the relationship between R&D investment and marketing expenses

will give a synergetic result rather than a company's competing relationship. Even though the health care industry is R&D driven, R&D efforts are likely to increase its marketing expenses. Hence, we propose the following hypothesis.

Hypothesis 4: Marketing Expenses (MKTE) mediate the relationship between R&D Investment (R&DI) and Sales Performance (SALES).

3. Research Methods

3.1 Sample and data source

We collected the PRC's healthcare industry information from the China Stock Market & Accounting Research Database (CSMARD) for 2016-2019. CSMARD has been a reliable source of public information about the listed company's profiles and performance. Renowned universities such as Hong Kong Polytechnic University, Chicago University, University of Hong Kong, and Tsinghua University have adopted their databases for academic endeavors during the past ten years.

According to Global Industrial Classification Standard (GICS), companies that we selected fell in Sector 35 (Health Care) and industry groups 3510 (Health Care Equipment & Services) and 3520 (Pharmaceuticals, Biotechnology & Life Sciences). The database in this sector comprises 305 listed companies, which we all included for this study. As such, the sample represents the population of the healthcare industry in the PRC.

The healthcare industry provides an ideal setting for testing our model and hypotheses for several reasons. First, R&D is considered an essential investment in the healthcare industry, as it has tremendous effects on company performance. Second, board chair and CEO duality are likely crucial decisions for the healthcare industry because of the PRC's enormous population. Last, the healthcare industry integrates sectors within the economic system that provides goods and services to treat patients with curative, preventive, rehabilitative, and palliative care (Wikipedia, 2020).

Third, we note that the industry represents an enormous consumer market of almost 15 billion consumers in the PRC. As its products and services are necessary for day-to-day life, we cannot overlook its importance.

3.2 Operationalization of Variables

As discussed in Section 2, there are two exogenous variables and four endogenous variables in the proposed model. The following section describes how we operationalize these variables.

4.2.1 Endogenous Variables

The four endogenous variables are ICCG, R&DI, SALES, and MKTE, as shown in Figure 1. We coded ICCG 1 when the board chair and CEO were similar in Gender and ICCG 2 when the board chair and CEO were heterogeneous.

R&DI was operationalized as the amount of investment in R&D, representing the amount of know-how (Hennart & Larimo, 1998) and private expropriation hazards (Delios &

Henisz, 2000). SALES was the revenue generated by selling a company's products and services, whereas MKTE is the amount of money spent on promotion and other marketing activities.

4.2.2 Exogenous Variables

We have two exogenous variables in the Model, CHRG, and CEOG, as shown in Figure 2.

CHRG represents the gender Gender of the board chair, while CEOG defines the gender Gender of the CEO. Both of them are dummy variables in which we coded men as one and women as 2.

3.3 Analysis Methods

The literature on the two streams: the choices of gender in the executive board and R&D & marketing expenses with sales indicates that the regression method and two-stage least square methods are the two most frequently employed techniques in data analysis. However, in this study, we adopt SmartPls 3.3.1, a structural equation modeling software, to test whether the data fit the model and its hypotheses while controlling for the year's fixed effect. Missing values were first replaced by linear interpolation before we standardized all variables to reduce multicollinearity among variables.

3.4 Results

We present descriptive statistics and correlation coefficients in Table 2. The mean of ICCG is -1.65 (S.D. 0.497). On the one hand, the average CHRG is 1.08 (S.D. 0.275), indicating that board chairs are mostly men. On the other hand, CEOG is 1.22 (S.D. 1.045), which shows more men

than women. The correlation matrix in Table 2 indicates that ICCG is significantly correlated with CHRG and CEOG at $p=0.05$, respectively. However, its relationship with CHRG is higher than that of CEOG. R&DI has a significant correlation with SALES and MKTE at $p<0.001$, whereas MKTE is highly and positively correlated with SALES at $p<0.001$. All these relationships are consistent with what we have discussed in Section 2.

Table 1. Descriptive Statistics and Correlation Coefficient Matrix (N=305)

	M	Std.	CE	CH	IC	Ln	LnM
	ea	Deviat	OG	RG	CG	RD	KTE
	n	ion					
CEO	1.	1.045	1				
G*	22						

CH	1.	0.275	0.0	1			
RG	08		07				
ICC	1.	0.479	0.1	0.1	1		
G	65		27*	21*			
			*	*			
LnR	17	1.76	-	-	-	1	
D	.6		0.0	0.0	0.0		
	8		61	89	08		
LnM	19	0.946	0.0	0.0	0.0	0.2	1
KTE	.7		4	05	49	3*	
	1					*	
LSA	21	1.287	-	0.1	0.2	0.0	0.11
LES	.0		0.0	06*	09*	08	1**
	2		28	*	*		

*Variables before standardization

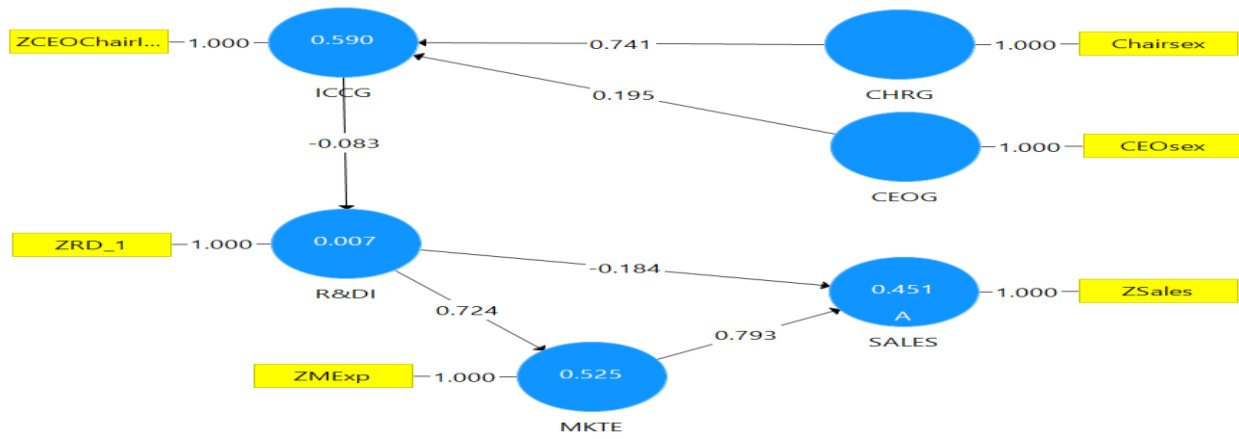
** $p<0.05$

4.5 Assessing the Model

Testing the model and its hypotheses, we followed the procedures suggested by Hair et al. (2016). we start with evaluating the model's structural nature,

Step 1. Assess the structural model for collinearity issues and model fitting

Figure 2. Estimated Path Coefficients of the Conceptual Model
Model Fit Summary
SMRM = 0.044 d_ULS = 0.053 d_G = 0.006 NFI = 0.986



To assess collinearity, we need to examine each predictor separately for each subpart of the structural model. However, since we have standardized all variables before data analysis, the VIF values become 1. Hence, we do not have multicollinearity with VIF higher than 5, and the next thing to do was examine the model fit measures (Figure 3).

The standardized-root-mean-square-residual (SRMR) was a model fit measure suggested by Henseler et al. (2014). It is the root mean square discrepancy between the observed correlations and the model-implied correlations. When applying Covariance – Structural Equation Modeling (CB-SEM), the threshold for SRMR was set as 0.08. Hair et al. commented that this value would be too low for Partial Least Square - Structural Equation Modeling (PLS-SEM) as the purpose of PLS-SEM is to maximize the explained variance of the endogenous variables or constructs. In assessing the model, we found SRMR 0.055 and NFI 0.999. The former is smaller than the threshold of 0.08, while the latter is larger than the threshold of 0.9.

We found that the d ULS, a model fit index for PLS-SEM, is 0.055. As such, we may conclude that the data fit the model well with a small amount of residual.

Step 2. Assess the significance and relevance of the structural model relationships

Submitting the structural model (Figure 1) to SmartPls, we set the algorithm iteration equal to 500 and bootstrapping samples 5500. Figure 2 shows that the analysis outputs with all paths significant at $p < 0,001$, except R&DI

→ SALES. As indicated in Table 2, six hypotheses that we postulated were supported. Only H4a that R&DI → SALES was rejected at 0.05 but accepted at 0.100. As such, we conclude that H4a was weakly supported, and further examination of this link seems necessary in future research.

Table 2. Results of Hypotheses Testing

Hypothesis	Path Coefficient	R-Square	Supported/ Rejected
1. CHR → ICC G	0.741 ($p < 0.001$)	0.590	Supported
2. CE OG → ICCG	0.195 ($p < 0.001$)	N.A.	Supported
3. ICC G → R & DI	-0.083 ($p < 0.001$)	0.007	Supported
4. R&DI → SALE S	0.184 ($p < 0.147$)	0.451	Rejected
5. R&DI → MKT E	0.739 ($p < 0.001$)	0.534	Supported

6. MK TE→ SALE S	0.793 (p<0. 001)	0.4 51	Supported

The short path running from ICCG -> R&DI -> SALES, which is not significant at $p < 0.100$, indicates that the R&DI is not a good mediator.

Of significant indirect effects, the path R&DI → MKTE → SALES is most relevant to Hypotheses 4a and 4b. This effect evidences that MKTE is a mediator between R&DI and SALES. As R&DI does not directly impact SALES, the only way that R&DI can influence SALES is through MKTE (mediation – partial mediation accepted). The next exciting and significant indirect paths are:

CEOG → ICCG → R&DI → MKTE → SALES and

CHRG → ICCG → R&DI → MKTE → SALES.

We can break the model into two parts: the upper part is related to CHRG, CEOG, and ICCG, and the lower part consists of MKTE and SALES. The endogenous variable, R&DI, connects these two parts. If ICCG does not have an impact on R&DI, the model will fall apart.

Overall, all indirect paths are relevant and meaningful, indicating that the model is well-connected among exogenous and endogenous variables.

Table 3. Two-sample Cross-validation

Path	Coefficients- diff (S1 - S2)	p-Value original (S1 vs. S2)	p-Value new (S1 vs. 2)
R&DI → SALES	-0.077	0.595	0.810
R&DI → MKTE	- 0.054	0.687	0.627
MKTE → SALES	- 0.198	0.811	0.377
ICCG → R&DI	0.028	0.218	0.437
CHRG → ICCG	-0.003	0.520	0.961
CEOG → ICCG	0.097	0.486	0.972

The next thing to do is to assess the cross-validation of the model. By dividing the dataset into two groups, we coded odd-numbered companies as one (1) and even-numbered companies as two (2). The multigroup procedure of the SmartPls Program was employed to compare whether path coefficients in the model are significantly different across the two groups. Table 6 shows the results of the cross-validation analysis. Column 4 provides p-values for assessing differences across two

groups for all paths in the model. S1 in the header of the column represents the first group, while S2 represents the second group. As the p-values are above 0.377, all path coefficients are not significantly different across the two groups. These indicate that the two samples are statistically insignificant in terms of all path coefficients. Hence, we have successfully cross-validated the model.

Step 3. Assess the level of R^2

We examine the R^2 values of the endogenous variables. As indicated in Table 2, the R^2 values of ICCG (0.590), MKTE (0.534), SALES (0.453) can be considered moderate. In contrast, the R^2 value for R&DI (0.007) is relatively weak.

3.6 Section Summary

We employed SmartPLS to assess our model and test the seven hypotheses that we postulated in Section 3. There are several findings worth noting. First, the indicators SRMR and NFI suggest that the data fit the model well. Second, all hypotheses were accepted except Hypothesis 4a at $p < 0.05$. Concerning Hypothesis 4, by bringing together the results of testing Hypotheses 4a, 4b, and 4c, we conclude that MKTE is a partial mediator between R&DI and SALES.

4. Conclusion

This study examines the effects of board gender composition on China's healthcare companies' sales performance. Using the China Stock Market & Accounting Research Database (CSMARD) for 2016-2019, we have shown that board gender composition significantly affects sales performance through R&D investment decision-making.

The results seem to provide evidence that a board chair and CEO of the same Gender increase R&D investment while if they are of different genders, they appear to reduce R&D investments. Besides, marketing expenses play a mediating role between R&D investment and sales performance. Marketing is not only sales but also for the R&D team to guide future demand. Our study appears to demonstrate that board gender composition itself has little impact on marketing efforts. The mediating effect of marketing efforts means that combined marketing and R&D efforts are outperforming individual effort. Overall, the findings suggest that any board's gender composition synergy has a more beneficial impact rather than merely the critical mass of women appointed as directors across the industry.

4.1. Contributions

This study has contributed to the literature on gender diversity management in healthcare companies in three ways. First, existing research has focused on the effect of female board representation on executive boards. While this may sometimes be a requirement for better company performance, appointing women directors does not guarantee it. However, men and women's interaction effects holding the board chair and CEO positions directly impact essential operations, such as R&D investment and marketing activity.

Second, the board gender pairing strategies have different impacts on operations, eventually affecting company profitability. Yang and Triana (2017) found that women-led ventures are more likely to fail than men-

led ventures in the Asia business environment. In contrast, our study finds that combined men and women-led ventures are outperforming a single-gendered board.

Third, the gender mix compositions affect operation in two ways: the homogeneous 'gender of board chair and CEO' increases R&D investment due to group thinking and group pressure. On the contrary, the heterogeneous 'gender of board chair and CEO' reduces R&D investment because of their synergy effect.

4.2. Management Implications

There appear to be several real-world applications of these findings to governance, management, and marketing activities.

First, CEO/Chair duality has been an issue for many years and shows no abating sign (Krause, Semedeni, Cannella, 2013). CEO duality is the self-conflicting leadership structure hindering the boards from undertaking their duties and managing the corporate effectively and efficiently as board members are restricted in the information they receive. We look beyond duality and argue that implementing the gender mix composition policy could end the long debate of CEO duality. Implementing this policy in a more open, continual, and reciprocal manner than the current rule-based environment can quickly respond to corporate needs. Therefore, Chair–CEO relationships should be dynamic, and this 'group dynamic' can create unlimited synergy options for a company's success (Arena & Braga-Alves, 2013). In short, we propose that

human resources policy should be encouraging a heterogeneous gender mix for board chair and CEO positions rather than just meeting quotas on boards. (Wearing & Wearing, 2004).

Second, most research agrees that we gain a sustainable competitive advantage when investing in both marketing and R&D. A successful company should be producing a leading technology and turning it into a product with attributes better or different than those offered by their competitors (Krishnan & Tadepalli, 2009). We agree with their findings that combined marketing and R&D efforts outperform individual efforts.

Third, from our sample data from PRC publicly listed companies, the marketing effort mediates the link between R&D investment and sales financial performance (Galbreath, 2018), implying that marketing should take the lead on the combined R&D and marketing interaction. In other words, the traditional structure of marketing and R&D as two separate departments, each with its budgets, is inefficient. The R&D unit would be a sub-section in the marketing department to enhance the synergy effect of the R&D and marketing functions (Krishnan et al., 2009; Monteleone, 1976; Chauvin & Hirschey, 1993; Wilson & Ghingold, 1987).

Fourth, in the PRC business environment, women CEOs have more human capital than men directors. However, women CEOs receive less favorable personal career success outcomes, and their

companies had worse market-based performance than their counterparts but better accounting-based performance (Wang et al., 2018). The value of women on-board-company performance remains an issue. We find a positive link with company profitability when male and women directors work together at the executive board level. It is unlikely that companies will reach the gender-balance leadership of males and females soon (Halliday Enyiukwu, 2020). However, PRC companies tend to be in the right direction of improving the gender balance of the board of directors. We suggest that women directors shoulder the profitability of listed companies.

4.3. Limitations and Directions for Future Research

Our study has several limitations. First, we based our analysis to a large extent on a listed company dataset. Some critical variables, such as board size and women board chair and CEO attributes, were not consistently available.

Second, our study is limited to the healthcare industry in the PRC. We should extend our efforts to other sectors or other countries, i.e., the Fast-moving consumer goods industry, I.T., and service industries in other Asian countries. We can compare our model across various sectors and countries.

Third, a different research area would be a longitudinal analysis, exploring the model's stability that we have developed so as to capture the changes in CHRG and CEOG on ICCG and R&DI on SALES over time.

Nonetheless, we should consider examining the impact of the length of tenure on the utilization of R&DI, MKTE, and SALES and possibly determine the optimal length of tenure for CEOs in the industry to maximize the company's performance and the benefits of the stakeholders.

References (Available upon request)

Analysis of Factors that Affect Successor's Willingness in a Family Business : Using the Relationship of Trust as Mediating Variable

Giseob Yu^a, and Namjae Cho^b

^a Adjunct Professor, School of Business, Hanyang University

17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea

Tel: +82-2-2220-4142, E-mail: yugs@hanyang.ac.kr

^b Corresponding Author, Professor, School of Business, Hanyang University

17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea

Tel: +82-2-2220-1058, Fax: +82-2-2292-3195, E-mail: njcho@hanyang.ac.kr

Abstract

This study focuses on trust between an incumbent CEO and a successor in a family business. We use the relationship of trust between an incumbent CEO and a successor as mediating variable. A successor's conversational ability, home environment and the involvement of family members are used as independent variables. A successor's willingness is used as a dependent variable. The relationship of trust has a significant effect on successor's willingness. The relationship of trust has partially mediating effect among successor's conversational ability, home environment and successor's willingness. However, the involvement of family members is not to affect the relationship of trust nor mediating effect.

Keywords:

Family Business, Succession, Trust, a Successor, Mediation Effect

1. Introduction

Recently, research and interest in a family business has increased significantly in many academic institutions and societies, and as a result, research on a family business has been published in many academic journals (Short et al., 2016). Recent trends in a family business research have studied that how family members influence such as Company Identity and are involved to business (Anglin et al., 2017). These studies of involvement of family members are naturally linked to succession of a family business. In such a family business, succession can be defined as an important event and time to the extent, and succession is a criterion for classifying a family business and a non-family business (Christman, Chua & Litz, 2004; Laura et al., 2017). In particular, succession cannot take place and complete in a short period of time, also succession requires preparation, execution over a long period of time, and the efforts of many stakeholders around a family business (Yu, 2020). Indeed, the fact that succession is one of the

most difficult processes faced by a family business (Yan et al., 2006; Handler, 1994) is readily apparent through various previous studies.

There are various reasons why succession is difficult to complete successfully, because there are many stakeholders in the succession process and emotional problems of stakeholders should be managed well (Matthews et al., 1999). Occasionally, a family business has a dilemma in which a successor does not want to succeed (Lee et al., 2019). In fact, for a family business that fail to succeed, there is a possibility that the succession would remain a major trauma in the business life cycle (Berns & Klarner, 2017), and be perceived as a negative event.

Nevertheless, succession is significant in a family business, because successful succession means survival and permanency of a family business (Giovanna et al., 2020). Succession is an crucial key event in a family business, there are various factors influencing succession such as an incumbent CEO' willingness to succeed (Barach & Ganitsky, 1995; Venter et al., 2005), an incumbent CEO' willingness to retire (Sharma et al., 2001), conflicts of among family members (Bruce & Picard, 2006), and relationship between an incumbent CEO and a successor (De Massis et al., 2008; Venter et al., 2005). In particular, the trust relationship, one of the characteristics that define the relationship between an incumbent CEO and a successor (Harvey et al., 1995), has been addressed in various previous studies (Lansberg & Astrachan, 1994; Christman et al., 1998; Carter et al., 2009), and have been shown as essential factors that should exist for successful succession.

The purpose of this study is to analyze the influence of trust during the succession process, and to identify the influence and mediating effect of trust of the relationship between an incumbent CEO and a successor in succession process, which is considered an important factor for successful succession. In this study, we focused on the perspective of a successor, a key player in the succession process.

We strived to find that how the trust between an incumbent CEO and a successor affects a successor' willingness to succession as a mediate variable. Additionally, we set a successor' conversational

ability, home environment and family involvement as independent variables for analyzing effect on the trust. This research model is based on the proposed model in Yu' (2020) study.

2. Literature Review

2.1 Succession for a Family Business

Succession has explained the leadership transfer process of a business from previous family members to the next generation of family members (Sharma et al., 2001). Succession is significant for a family business in various means. This is because business could grow through successful succession (Dibrell et al., 2019) and family members could continue and develop their knowledge and vision (Bjugren & Sund, 2001).

According to Industrial Bank of Korea (IBK) Economic Research Institute, a family business in South Korea, which had successfully completed their succession, they were increasing various management outcomes such as business profit rate from 1.9% to 5%, return on asset from 3.9% to 4.8% and return of equity from 5.1% to 6.8% (Kim, 2017). By achieving a successful succession, it is likely to maintain stability not only management performance in the business but also social and economic sectors. Successful succession means that tangible and intangible assets in a company are maintained without dissolution and that the employment of non-family members as well as family members is retained (Kim, 2017; Yu, 2020).

Previous research on succession, various studies defined and described succession in many stages. A typical definition of succession is the four-step succession process claimed by Churchill & Hatten (1987). In the first step, a founder is the only person who participates in the business. The second is the intensive educational training and ability development stage, focusing on a successor as a stage of training and development. The third is the stage in which an incumbent CEO and a successor form partnerships to jointly manage the business. The final step is the transfer of management control to the successor, which concludes the succession process. However, in recent studies on succession, those were emphasized that the previous step before succession to select a

successor was also significant (Cabrera-Suarez et al., 2018; Giovanna et al., 2020).

The definition of succession used in this study was defined as four succession stages suggested by Churchill & Hatten and including the stage of before beginning of succession.

2.2 Definition of Used Variables

2.2.1 Trust between an Incumbent CEO and a Successor

Trust has been studied not only in business but also in various research fields such as sociology and psychology, even economics (Colquitt et al., 2007; Oh et al., 2016). While trust is used in a slightly different meaning, trust eventually arises as a result of the interaction between people, which can be defined as the process of trusting the other as a result of the experience (Blomqvist, 1997; Oh et al., 2016).

During succession in a family business, there are a total of six relationships in which trust should occur: 1) a family business and stakeholders, 2) an incumbent CEO and a family business, 3) a successor and a family business, 4) an incumbent CEO and a successor, 5) a successor and key stakeholders, 6) an incumbent CEO and key stakeholders (Fox et al., 1996). Considering an incumbent CEO and a successor who act as key players in the succession process, 4) the relationship of trust between an incumbent CEO and a successor is very significant and essential (Sharma et al., 2003). In particular, previous studies identify the high level of trust between an incumbent CEO and a successor as the most fundamental and necessary factor for successful succession (Lansberg & Astrachan, 1994; Chrisman et al., 1998; Carter et al., 2009). Such trust could reduce conflicts between family members and various costs, and enable efficient organizational operations.

The trust used in a family business could be analyzed and studied in a multidimensional manner (Schoorman et al., 2007). The trust also approaches and analyzes the upper category of relational trust, and the relational trust could be divided concept of three sub-categories: mutual trust, competency trust, and system trust (Dyer, 2012; Sundaramurthy, 2008; Kalen, 2014). In this study, we focused on the trust

relationship between 4) an incumbent CEO and a successor, and the trust was defined by relational trust including sub-categories.

2.2.2 A Successor' Conversational Ability

Conversational ability is defined in a variety of ways, from various perspectives, including behavioral, propensity, interpersonal, cognitive and linguistic views. Argyris (1965) defined conversational ability as the ability to maintain and grow, to interact with the environment that could thrive, or to fit into the environment. Weinstein (1969) defined conversational ability was to perform interpersonal tasks and to manipulate the others in order to achieve their goals. We could understand the importance of conversational ability from the perspective of human development. Some scholars have found in the conversation why human development and civilization could continue (Lee, 2006). There is also research within business research fields that conversational ability affects job satisfaction and adaptation (An, 2013).

To review previous studies, it can be stressed that conversational ability between stakeholders is essential in the succession process. Besides, the ability of stakeholders could affect communication to complete successfully or not.

In this study, the conversational ability of a successor was measured and the measurement tool was selected to measure individual communication skills (Lee, 1991).

2.2.3 A Home Environment

Home environment, a variable not primarily addressed in business research field, has generally been studied in home economics. In previous studies of home environment, a healthy home environment instructs family's culture and values to family members, improves group consciousness so that family members could act responsibly as members of society, and also greatly affects individuals' growth and development (Yang, 2015). Research on these assumptions began in the United States in the 1960s, with representative scholars including Otto, Detrain, and Olson.

According to these scholars, all families have strengths and challenges, and the ability to develop and strengthen the positive aspects of each family, and those things enhance and improve home environment by discovering each families' strengths and potential. Additionally, a healthy family was defined as a place where family members were physically, mentally, socially, psychologically, and morally healthy, and had a sense of community solidarity with the group consciousness and a stable mind.

In business research field, Yu (2020) argued that home environment is one of the crucial factors influencing the formation of trust relationships between an incumbent CEO and a successor. The researcher deduced conclusions by interviewing and textual analysis of incumbent CEOs and successors, especially the researcher explained the importance of the home environment by the participating successors emphasized the significance.

In this study, a total of eight questions were used as a tool to measure parental attitude and attachment level of parents to analyze the relationship between an incumbent CEO and a successor each four questions in order to measure the home environment mainly used in the field of home economics.

2.2.4 Involvement of Family Members

Family members could be explained as the most important group of internal stakeholders in a family business, which has various effects on the operation and succession in the family business. This is because family relationships and conflicts affect the success and survival of business compared to non-family companies rather than external factors of business (Choo, 2018).

For successful succession, a successor has many complicated relationships in various family members, financial and social relationships. If the relationship with other family members is not well, a lot of effort, time, and economic costs can be incurred, and if the relationship continues to deteriorate, it can be difficult to succeed (Sharma et al., 2001).

In this process, the influential involvement of family members represented by the successor's mother (or father) or an incumbent CEO's spouse can lead to a

smooth conversation and resolution of conflict. In addition, when conflicts arise between an incumbent CEO and a successor, the family members can create solutions by inducing them to close or avoid conflicts through mutual advice and listening with objective and future-oriented perspectives (Barnes et al., 1994). A total of six questions were organized to measure the involvement of family members.

2.2.5 Successor' Willingness to Succession

The willingness of a successor to succeed the family business is a crucial factor, such as the willingness of an incumbent CEO to voluntarily retire from a family business, and it is important for a successor to try and care about the succession (Sharma et al., 2001).

About a successor's willingness to succession, Mayer et al (1995) argued that succession and leadership transfer would require a successor from among family members, who should have abilities and willingness. The voluntarily willingness of a successor to succeed was not only the satisfaction of the stakeholders in the succession process, but also the most significant factor affecting the continuous profits of the business (Venter et al., 2005).

As such, we measured a successor's willingness as the dependent variable which is an important factor affecting various parts of the succession process. The measurement questions were conducted consisting of a total of seven questions.

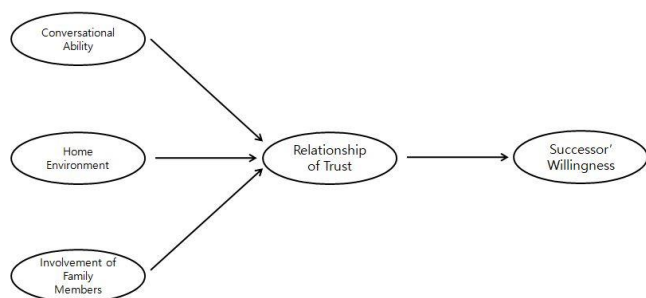
3. Research Method

3.1 Research Model & Hypothesis

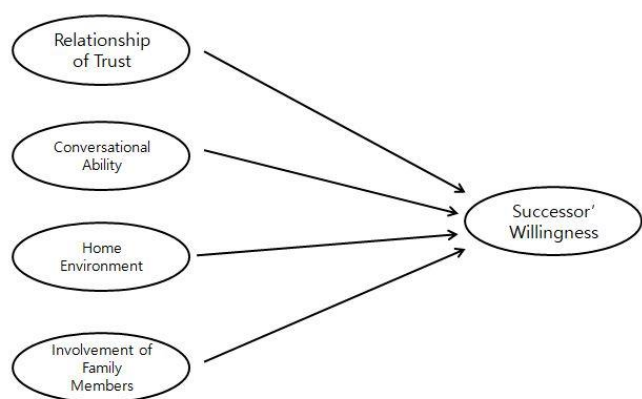
The model of this study is tailored to the purpose of the study based on the variables mentioned earlier. The research model is shown in <Figure 1>, and before analyzing the research model, we analyzed the model in <Figure 2> to understand the influence of trust.

A total of two analytical programs were used in this study. SPSS version 21 was used for correlation analysis, exploratory factor analysis, regression and multiple regression analysis, among variables. Additionally, Jamovi version 1.2.17 was used for confirmatory factor analysis and mediated effect analysis.

The reason for the confirmatory factor analysis is to re-verify the factor model set by the researcher. For regression and mediated effect analysis, the analysis was conducted by deriving the mean of each variable after terminating the factor analysis.



<Figure 1. Research Mode I>



<Figure 2. Research Model 2>

The research hypotheses established based on the research model are as follows.

Hypothesis 1-1: A successor's conversational ability is associated to the trust relationship.

Hypothesis 1-2: Home environment is associated to the trust relationship.

Hypothesis 1-3: The involvement of family members is associated to the trust relationship.

Hypothesis 2-1: The trust would mediate a successor's conversational ability and a successor's willingness.

Hypothesis 2-2: The trust would mediate home environment and a successor's willingness.

Hypothesis 2-3: The trust would mediate the involvement of family members and a successor's willingness.

Questionnaires were produced in this research, distributed and retrieved online and offline. The survey was conducted for 92 family companies, and we used 82 samples for analysis excluding unfaithful respondents or missing data collected. When the initial questionnaire was distributed, respondents who are currently a successor of a family business or parents run a family business therefore a respondent likely become a successors in the future were selected. In addition, the items used for the survey was table 1 and the items were modified and distributed in accordance with this study.

<Table 1. Summary of Used Questions>

Variables		Questions summary (Items)	Name of variable	The quarry of questions
Independent Variables	Successor's Conversational Ability	I try to understand the problem from the other person's perspective.	CO1	Lee (1991)
		I adapt to change and act in an appropriate way.	CO3	
		I pay attention to the other person's arguments and actions.	CO4	

		I use several effective methods to coordinate opposing opinions and solve problems well.	CO7	
	Home Environment	When I am depressed, my parents read my mind and comfort me.	PR3	Yang (2015)
		I enjoy talking with my parents.	PR4	
		My parents and I have had a close relationship since I was young.	PR5	
		My parents and I are on the same wavelength.	PR7	
	Involvement of Family Members	Family members influence me and my incumbent CEO' communication.	FI1	Choo (2018)
		Family members coordinate our opinions when there is a conflict between me and my incumbent CEO.	FI2	
		Family members influence the establishment of trust between me and my incumbent CEO.	FI3	
		Family members influence my development of management ability	FI4	
		Family members influence on succession by controlling conflicts within family members.	FI5	
Mediating Variable	Relationship Between an Incumbent CEO and a Successor	An incumbent CEO shall be determined in consultation with me on important issues.	TR2	Handler (1989)
		I have good communication with an incumbent CEO.	TR3	
		I can coordinate opinions when there is a disagreement with an incumbent CEO.	TR4	
		I try to cooperate with an incumbent CEO.	TR5	
Dependent Variable	Successor's	I strongly hope to succeed the family business.	WI1	Venter et al (2005)

	Willingness	I'm happy to work for my family business	WI3	
		I am proud to tell people around me that I succeed in the family business.	WI4	
		I'm interested in my family business.	WI6	

4. Analysis Result

The result of demographic analysis is as follows: In the case of a successor's gender, 70.7% were male and 29.3% were female. An incumbent CEO's gender, 92.7 percent of men were overwhelming, while 7.3 percent of women were women. By age of a successor, the percentage of 20 to 25 was 2.4 percent, 26 to 30 was 22.0 percent, 31 to 35 was 43.9 percent, 36 to 40 was 24.2 percent, and 41 or older was 7.3 percent.

In the case of succession status, 18.3% of the respondents were preparing to succeed a family business, 52.4% of the respondents were currently in the succession process, 11.0% of the respondents completed the succession process, and 18.3% of the respondents answered to be not applicable. 18.3% of the respondents were not applicable, but we did not

exclude them because, as mentioned, the initial questionnaire distributed to family members who potential and possible to become a successor within the family business in the pre-succession phase.

In the case of the respondents' industry, manufacturing accounted for 43.9% of the respondents, 6.1% in the construction industry, 17.1% in the distribution industry, 22.0% in the service industry, 3.7% in agriculture, and 7.3%. In the case of the position, the respondents answered 12.2% of the CEO, 23.2% of the board of a director, 7.3% of the general managers, 11.0% of the managers, 17.1% of the assistant managers, and 29.3% of the other positions. The period of working in a family business was 19.5% under a year, 24.4% in 2 to 3 years, 15.9% in 3 to 5 years, 12.2% in 5 to 7 years, 17.1% in 7 to 10 years, and 11.0% in more than 10 years (Table 2).

<Table 2. The Characteristic of Samples>

Classification	Category	Frequency	Rate (%)	Total Responses
Successor's Gender	Male	58	70.7	82
	Female	24	29.3	
Incumbent CEO's Gender	Male	76	92.7	82
	Female	6	7.3	
Age	20~25 age	2	2.4	82
	26~30 age	18	22.0	
	31~35 age	36	43.9	
	36~40 age	20	24.4	

	40 or older	6	7.3	
Succession Status	Preparing Succession	15	18.3	82
	In Succession	43	52.4	
	Completed Succession	9	11.0	
	Not Applicable	15	18.3	
Industry	Manufacturing	36	43.9	82
	Construction	5	6.1	
	Distribution	14	17.1	
	Service	18	22.0	
	Finance	0	0	
	Agriculture	3	3.7	
	Others	6	7.3	
Position	CEO	10	12.2	82
	Board Member	19	23.2	
	General Manager	6	7.3	
	Manager	9	11.0	
	Assistant Manager	14	17.1	
	The Other	24	29.3	
Working Period	Under a year	16	19.5	82
	2~3 year	20	24.4	
	3~5 year	13	15.9	
	5~7 year	10	12.2	
	7~10 year	14	17.1	
	More than 10 year	9	11.0	

The results of the correlation analysis between variables are as follows (Table 3): Although the correlation between a successor' conversational ability and the involvement of family members were

not significant. There was a relationship between variables with slightly higher correlations, but we conducted next step, because the problem was not seriously to proceed with this study.

<Table 3. Means, Standard deviation and Coefficient of correlations>

	Means	Standard Deviation	Conversational Ability	Home Environment	Successor's Willingness	Relationship of Trust	Involvement of Family Members
Conversational Ability	3.9085	.68439	1				
Home Environment	3.4970	1.09114	.221*	1			
Successor's Willingness	3.5488	.92583	.340**	.395**	1		
Relationship of Trust	3.4543	.96715	.351**	.625**	.530**	1	
Involvement of Family Members	3.6585	.84063	.131	.537**	.326**	.375**	1

*p < 0.05, **p < 0.01

After analyzing the correlation analysis between variables, an exploratory factor analysis was conducted to ensure the validity and reliability of the measurement items. The measurement items for the initial questionnaire consisted of nine questions about a successor's conversational ability, eight questions about home environment, six questions about the involvement of family members, six questions about the relationship of trust between an incumbent CEO and a successor, and seven questions about a successor's willingness.

According to the exploratory factor analysis, a total of 19 questions satisfied the factor loadings and we conducted to reflect these results. The detailed result was follows: a successor's conversational ability was 4 questions, home environment was 4 questions, the involvement of family members was 5 questions, the relationship of trust between an incumbent CEO and a successor was 4 questions, and a successor's willingness was 4 questions. The results of the exploratory factor analysis are as follows (Table 4).

<Table 4. Result of Exploratory Factor Analysis>

Name of Variables		Items	Factor Loading	Cronbach's alpha	Total Explained Variance (%)
Independent Variables	Conversational Ability	CO1	.824	.799	73.958
		CO3	.739		
		CO4	.755		
		CO7	.761		

Home Environment	PR3	.751	.909	
	PR4	.783		
	PR5	.810		
	PR7	.842		
Involvement of Family Member	FI1	.734	.854	
	FI2	.826		
	FI3	.795		
	FI4	.729		
	FI5	.817		

Mediating Variable	Relationship of Trust	TR2	.743	.890	
		TR3	.858		
		TR4	.795		
		TR5	.560		
Dependent Variable	Successor's Willingness	WI1	.838	.877	
		WI3	.771		
		WI4	.783		
		WI6	.684		

Kaiser-Mayer-Olkin : .824

Bartlett's chi-squared : 1187.241, the degree of freedom : 201, Sig : .000

The Cronbach's alpha value, which means the reliability of each variable, is a successor's conversational ability .799, home environment variable .909, a successor's willingness variable .854, the relationship of trust between an incumbent CEO and a successor was .890, and the involvement of family members was .877, which resulted in sufficient

value for the next progress of the study. The result of total explained variance was 73.958%, and the result KMO value was .824, which is sufficiently explained by the correlation between the variables. Bartlett result was also shown to be significant at the 0.01 level.

For factor loadings, an appropriate value of at least 0.7 was derived. However, an item No. 6 of a successor's willingness and an item No. 5 of the relationship of trust between an incumbent CEO and a successor were less than 0.7, but we did not exclude the items because those items were significant items for this study.

Based on the results of the exploratory factor analysis, a confirmatory factor analysis was conducted. The model was divided into three models for the confirmatory factor analysis. Model 1 included all variables, and for Model 3, variables were distinguished based on independent variables, a mediation variable, and a dependent variable, and Model 5 performed the analysis by separating each variable (Table 5). The results of the confirmatory factor analysis for each model were as follows (Table 6).

<Table 5. Model of Confirmatory Factor Analysis>

Model	Measurement Variables				
Model 1	CO / PR / FI / TR / WI				
Model 3	CO / PR / FI			TR	WI
Model 5	CO	PR	FI	TR	WI

<Table 6. Result of Confirmatory Factor Analysis Model>

Model	x ²	df	p	CFI	TLI	RMSEA	RMSEA 90% CI	
							Lower	Upper
Model 1	736	189	< .001	0.512	0.458	0.188	0.174	0.202
Model 3	544	186	< .001	0.681	0.640	0.153	0.138	0.168
Model 5	322	179	< .001	0.872	0.850	0.098	0.081	0.116

According to Bassellier et al. (2003) and Gefen & Straub(2000), CFI, an indicator that complements the shortcomings of the Standard Fit Index, argued that the complexity impact of the model and the size of the sample are less affected, and that, in general, over 0.9 could be judged to be a favorable fit and also above 0.8 to 0.9 could be deemed a find fit. In addition, the TLI, called the Non-Standard Fit Index, was claimed to be affordable at 0.8 to 0.9. RMSEA, a model goodness-of-fit index that is frequently used as an advantage less affected by sample size, could be evaluated as a good fit if it is less than 0.5 and a normal fit if it is less than 0.10 (Browne & Cudeck, 1992). Considering the

fact that the causal relationship and variables used in this study had not been studied generally, the results of Model 5 showed that the result had not a significant problem with the progress of this study.

Prior to analyzing the main research model based on trust, we explored how much trust affects a successor's willingness set as a dependent variable. Multiple regression analysis was conducted with four independent variables including the relationship of trust. The result of the multiple regression analysis is as follows (Table 7).

<Table 7. Result of Multiple Regression Analysis>

Model	Non-Standardized Coefficient		Standardized Coefficient	t-value	Sig.	VIF	Durbin-Watson
	β	S.E.	β				
1	Constant Value	.662	.593	1.116	.268		2.128
	Relationship of Trust	.378	.120	3.157	.002***	1.141	
	Conversational Ability	.237	.135	1.753	.084*	1.990	
	Home Environment	.031	.112	.280	.780	1.787	
	Involvement of Family Member	.150	.122	1.223	.225	1.411	

R	.572
R square	.327
Adjusted R square	.292
F	9.367

a. Dependent Variable: WI

* < 0.1, ** < 0.05, *** < 0.01

The R-square value, which represents the explanatory research model, obtained the result value of .327, and the adjusted R-square value was .292. In addition, the Durbin-Watson value showed the resulting value of 2.128.

Multiple regression analysis showed that the relationship of trust between an incumbent CEO and a successor, and a successor's conversational ability significantly affected a dependent variable (a successor's willingness). Among them, the relationship of trust was shown to have a greater influence on a successor's willingness to succeed than other variables.

The Jamovi program was used to analyze the main research model of this study, and the result of analysis is as follows (Table 8 and Table 9)

<Table 8. Result Using Trust as the Dependent Variable>

Name	Estimate	SE	95% C.I.		β	df	t	p
			Lower	Upper				
Conversational Ability	0.3163	0.1227	0.0719	0.561	0.2238	78	2.577	0.012
Home Environment	0.4860	0.0905	0.03059	0.666	0.5483	78	5.371	<.001
Involvement of Family Member	0.0584	0.1156	-0.1716	0.288	0.0508	78	0.506	0.615

In the model of the relationship of trust as a dependent variable, a successor's conversational ability was shown to have a significant impact (0.3163) at 95% levels and, for home environments at 99%

levels (0.4860). However, the involvement of family members (0.0584) was not significant. Thus, the variable that had the most impact on the relationship of trust was home environments.

<Table 9. Result of Mediating Effect Analysis>

Type	Effect	Estimate	SE	95% C.I. (a)		β	z	p
				Lower	Upper			
Direct	Conversational Ability → Willingness	0.2368	0.1496	-0.0704	0.508	0.1751	1.583	0.113
	Home Environment → Willingness	0.0313	0.1120	-0.1673	0.272	0.0369	0.280	0.780
	Involvement of FMs → Willingness	0.1495	0.1343	-0.1490	0.414	0.1358	1.114	0.265
Indirect	Conversational Ability → Trust → Willingness	0.1194	0.0576	0.0350	0.278	0.0883	2.074	0.038
	Home Environment → Trust → Willingness	0.1835	0.0754	0.0679	0.389	0.2163	2.435	0.015
	Involvement of FMs → Trust → Willingness	0.0221	0.0479	-0.0604	0.132	0.0200	0.460	0.645

The result was shown that independent variables, as a successor's conversational ability, home environment, and the involvement of family members, did not directly affect successor's willingness to succeed as a dependent variable. However, a successor's conversational ability exhibited an indirect mediating effect of 0.1194 through the relationship of Trust, and the home environment showed an indirect mediating effect of 0.1835. The involvement of family members was shown to be insignificant.

Consequently, the relationship of trust had an indirect mediation effect between a successor's conversational ability, home environment, and successor's willingness, which was a dependent variable. Based on the results above, the verification results of the hypothesis established in this study were as follows (Table 10).

<Table 10. Result of Hypothesis>

Hypothesis		Result
H 1-1	A successor's conversational ability is associated to the trust relationship.	Accepted
H 1-2	Home environment is associated to the trust relationship.	Accepted
H 1-3	The involvement of family members is associated to the trust relationship.	Rejected
H 2-1	The trust would mediate a successor's conversational ability and a successor's willingness.	Partially Accepted
H 2-2	The trust would mediate home environment and a successor's willingness	Partially Accepted
H 2-3	The trust would mediate the involvement of family members and a successor's willingness.	Rejected

5. Conclusion

The conclusions of this study are as follows: First, it has been shown that trust has a much greater effect directly on a successor's willingness than other variables. For successful succession, the relationship of trust between an incumbent CEO and a successor is an essential factor, which means that an incumbent CEO and a successor should strive to improve their relationship of trust. In other words, it can be emphasized that the establishment of the relationship of trust between an incumbent CEO and a successor is the first factor to be met in the preparation and progression of succession.

Second, the respondents answered that a successor's conversational ability and home environment affect the relationship of trust with an incumbent CEO. In particular, in a previous study of Yu (2020), the researcher argued through qualitative research that home environment affects the relationship of trust

between an incumbent CEO and a successor. The results of this study statistically validated that the variable, home environment, which has been mainly defined and studied in home economics, affects the relationship of trust. This result can be interpreted that implies the importance of the preparation stage for succession, which can be defined as the pre-succession stage. In other words, it can be explained that preparation for succession should be made before, not at the moment when a successor joins a family business and works.

Third, the relationship of trust has been shown to have an indirect mediating effect between a successor's conversational ability, home environment and a successor's willingness. As previous studies have shown, conversations between an incumbent CEO and a successor are important, especially, those who participated in this study determined that their ability to communicate influences the formation of trust with an incumbent CEO and their willingness to succeed. It

is also worth noting the home environment variable that has not been addressed in a traditional business research field. A successor who participated in the survey judged that home environment they had experienced influenced the relationship of trust with an incumbent CEO, which could be explained that the efforts of the family members, including an incumbent CEO, were important from the pre-succession stage. This means that an incumbent CEO and family members should create an atmosphere for smooth trust-building from the pre-succession stage.

Finally, it was shown that the involvement of family members did not directly affect successor's willingness to succeed, nor did it have a mediating effect through the relationship of trust with an incumbent CEO. These results also contradict the influence or importance of family members, including an incumbent CEO's spouses, identified in previous studies. Previous studies have shown that the involvement of family members in the succession process is a significant factor and influence, but the involvement of family members in the formation of trust relationships with an incumbent CEO from the perspective of a successor did not affect. These results are likely that a successor would have perceived the relationship with an incumbent CEO as a special and unique relationship that does not want family members to intervene or is not affected by others.

This view, however, is likely to fail to intervene in crucial issues such as improving a successor's willingness to succeed and resolving conflicts, despite the need for the existence of family members to coordinate this relationship if the relationship between an incumbent CEO and a successor is not high. Therefore, it is believed that a successor should consider the recognition of the special relationship with an incumbent CEO, as well as the possibility for intervention of family members to improve the relationship and successful succession.

The limitations of this study and future studies are as follows. First, some of the items for measuring variables have been shown to slightly lower than the appropriate values. In this study, it was considered essential items and we proceeded without excluding

those, but in future studies, there is a need to consider this limitation.

Second, this research was conducted without the characteristics of the industry. Although a demographic frequency analysis was conducted for the industry to which the respondents' family businesses belong, we did not conduct, such as cross-industry comparisons. However, the results of the previous qualitative studies indicated that there would be some differences between industries. Therefore, research considering the characteristics of the industry will be needed in the future.

Third, a re-study on the involvement of family members is expected study. Various previous studies have drawn conclusions that are expected to have a significant impact on the involvement of family members, but the result of this study have shown that there is no significant influence between each other. Therefore, it is expected that a detailed study will be needed on how the involvement of family members can affect it.

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A Case study on Building Trust on Succession in a Family Business

: Using Eisenhardt Case Study Method

Giseob Yu^a, and Namjae Cho^b

^a Adjunct Professor, School of Business, Hanyang University

17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea

Tel: +82-2-2220-4142, E-mail: yugs@hanyang.ac.kr

^b Corresponding Author, Professor, School of Business, Hanyang University

17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea

Tel: +82-2-2220-1058, Fax: +82-2-2292-3195, E-mail: njcho@hanyang.ac.kr

Abstract

This study strives to find out building trust between an incumbent CEO and a successor during succession in a family business. We use Eisenhardt's case study method and conduct interviews, five incumbent CEOs and six successors. The trust is formed from emotional trust to managerial trust and trust of these formations is not disappeared at both ends, not usual formation from calculative trust to relational trust. Besides, successors are not conscious to build the trust. Then, they feel difficult to distinguish an incumbent CEO's role during succession. This situation could be a possibility to make conflicts. This means that they need to communicate each other about those problems and perspectives.

Keywords:

Family Business, Succession, Trust, Trust Formation, Case Study

1. Introduction

A family business plays an important social and economic role in each country around the world, and family members are found to have an impact in various business fields such as management stability and productivity (Kim, 1998). In particular, identity of

a family business evolves and changes, because of the influence of family members (Anglin et al., 2017). For this reason, many researchers have recently conducted various studies on how to define and approach the influence of family members (Zellweger et al., 2013, Sharma et al., 2012).

The study of involvement and influence of family members inevitably leads to the succession in a family business. Despite one of the important parts of family business research and much research on succession, various theories did not develop much (Sharma, Chrisman, and Chua, 1996). This is due to the fact that the succession process is intertwined with a wide variety of stakeholders, is quite complex, and has to manage highly emotional processes (Matthews et al., 1999). In addition, previous studies related to succession mainly focused on variables, and such variable-oriented research has had a positive impact on academic development. However there is a limit to the inability to analyze interactions by various variables (Stanley et al., 2017).

Nevertheless, succession is the most significant event in a family business and can be described as one of the most critical field to be studied. Succession improves the competitive advantage, management ability, etc. of a family business by a successor through

the movement of power and leadership between generations (Dibrell et al., 2019). As a result, it can guarantee the survival of a family business. It can be interpreted that successful succession to the next generation means the survival of a family business.

Research on succession, a critical event in a family business, has been conducted on a variety of topics such as 1) environmental and psychological factors affecting succession (McMullen and Warnick, 2015), 2) harmony among family members in the succession process (Michael-Tsabari and Weiss, 2015), and 3) conflict among family members (Paskewitz and Beck, 2017). In addition, study of succession has been investigated using various variables such as Socioemotional Wealth (SEW) (Zellweger et al., 2012; Carney, 2005).

In this study, we endeavored to focus on relationship between an incumbent CEO and a successor during succession process. The reason why we focus on the relationship, the level of mutual trust has been shown to affect significantly succession through previous research (Chrisman et al., 1998; Carter et al., 2009).

The purpose of this study is as follows. First, the process of building trust between an incumbent CEO and a successor is analyzed in the process of succession in a family business. By analyzing what processes and how forming trust, we suggest guidelines for developing trust in them. Second, we analyze the differences and similarities in the views of an incumbent CEO and a successor's trust, and propose the first step toward for successful succession. To achieve the purpose of this study, Eisenhardt's case study method was used in this study. Five incumbent CEO and six successors were interviewed and data from them were analyzed.

2. Literature Review

2.1 Trust in a Family Business

Trust has been studied and discussed in various fields of study, including sociology, psychology, economics and business (Rousseau et al., 1998; Colquitt et al., 2007; Oh et al., 2016). Trust can be defined as the basic factor that humans interact with in life (Gambetta, 1988), and this definition can be said that

human relationships in a society or organization are fundamentally based on trust.

Early in the study, Trust was defined by Mellinger (1965) as either explicitly convinced of another person's motives and intentions, or as a pure acceptance of another person's words and actions. Sociology has typically defined Luhmann (1979) as including one's willingness to use knowledge based on his or her beliefs and actions against others.

In addition, there are definitions of economic perspective defined in anticipation of other people's behavior choices that may affect their behavior choices, and psychological views focused on the individual's internal perceptions, cognitive processes and emotions (Dasgupta, 2000; Mayer & Davis, 1999). Finally, the definition of trust can be explained as a result of the interaction between a person and others, which can be summarized as the result of the experience that the person trusts the others (Blomqvist, 1997).

In general, general trust could develop that by changing the form of trust from a Calculative Trust to a Relational Trust by continuing and repetitively performing (Hauswald, 2012). In other words, the repetitive behavior of a person and the flow of time can be explained as significant factors in building trust. Trust also plays a crucial role in a family business. The higher level of trust among family members could reduce conflicts and various cost, enable efficient organizational operations, and affect a positive impact on job security and productivity improvement (Fukuyama, 1995; Rousseau et al., 1998; Sharma, 2004).

There are a total of six trust relationships that be formed during succession in a family business (Fox et al., 1996), 1) a family business and stakeholders, 2) an incumbent CEO and a family business, 3) a Successor and a family business, 4) an incumbent CEO and a successor, 5) a Successor and key stakeholders, and 6) an incumbent CEO and key stakeholders. Among the relationships of trust, 4) relationship between an incumbent CEO and a Successor is a very important relationship for successful succession (Lansberg, 1988; Sharma et al., 2003). In this context, the higher level of trust between an incumbent CEO and a successor in

a family business serves as a critical role and variable for successful succession.

Trust can be studied and analyzed in multi-dimensional (Schoorman, Mayer & Davis, 2007). Relational trust, which is widely used in family business research, is analyzed in three sub-concepts: mutual trust, competency trust, and system trust. Mutual trust refers to trust between specific people, competency trust is based on experience in skills and abilities, and system trust means that organizational rules and guidelines work fairly and worthily (Dyer, 2012). Such multidimensional explanations of trust means interconnected concepts (Lane, 2000; Rousseau et al., 1998) and can be defined, studied, and analyzed based on personal perspectives (Hauswald, 2012).

In this study, trust is defined as 'psychological state including attitude of accepting various risks based on positive expectations or behaviors' (Eddleston et al., 2012; Dyer, 2012; Mayer et al., 1995). We also focused research on the relationship between an incumbent CEO and a successor among the relational trust of the higher concept, which encompasses the bottom three sub-concepts of trust.

2.2 Previous Research on Trust in a Family Business

Lansberg & Astrachan (1994) conducted an analysis with 130 family business samples to determine the impact of factors on succession planning and the training of a successor. The relationship between an incumbent CEO and a Successor was defined and measured with high mutual trust, mutual respect, and sincere conversation. The result of research showed that the relationship between an incumbent CEO and a Successor has a positive effect on the training of a successor.

A study by Chrisman et al (1998) conducted a research analysis on the significant qualities of a successor, with 485 Canadian Family Businesses. The research studied with a total of 30 questions about the qualities of a successor and had shown that variables that can be defined by trust or close to it ranked high. The first ranked variable was integrity, the third was respect from non-family members, the 11th was

respect from family members, and the 12th was trust from family members.

Carter et al (2009) used interviews, observations and business documentation data from six family businesses to study and understand the development process in which a successor becomes a leader in the succession process, and draw conclusion of six propositions. The first proposition is about the mutual positive relationship between an incumbent CEO and a Successor, and they emphasized that the best way to create a positive relationship in the relationship is to establish a relationship of mutual trust and respect.

Previous studies, these explained that the high level of trust between an incumbent CEO and a Successor is a positive and essential factor in the succession process. While previous studied has identified that trust has an important impact, there has been a lack of research on how the trust is formed. Therefore, this study focused on this part to find out how the trust relationship between an incumbent CEO and a Successor is formed during succession.

3. Research Method

3.1 Eisenhardt' Case Study

Case study is a method of research that can capture the overall and meaningful characteristics of events in the real world through "case" (Yin, 2016). Case study is defined as a way to collect data in depth and to explore cases that are of interest (Creswell, 1998) within a bounded system and detailed in a situational context. Case study is the logic of designing a study, and defined as a research method that can be performed when the situation and research problems are aligned (Platt, 1992). It is also defined by approaching and providing a process for developing theories from the study of events (Eisenhardt, 1989).

In this study, among the various case study methods, Eisenhardt's methodology was selected and conducted to find answers to the purpose and questions of this study. Eisenhardt (1989)'s methodology consists of eight steps. The first step is to define a research question. However, to ensure theoretical flexibility, a researcher does not set up theories or hypotheses, but define only research questions that a researcher wants to find out. The

second step is the case selection. This phase is highlighted as a significant part of designing theories in a case study. In this part, case selection as stated by researchers rather than random selection is recommended because it could have the effect of controlling external changes and enhancing validity.

The third step is to create tools (ex. interview) and protocols. Eisenhardt recommended a multiple case study method, as triangular measurements of evidence, because this method could enhance the theoretical foundation. While many samples are required for various perspectives, but Eisenhardt emphasized that four to ten samples are sufficient for a case study. The fourth step is to enter the case field. Data is collected including information obtained from the field, and analyzing and collecting data are carried out cross-process at the same time. This allows a researcher to have the strength to effectively perform fast data collection and analysis.

The fifth step is to analyze data. There are no criteria in data analysis in general, and it is important to analyze patterns between each case. A researcher could select categories or dimensions for case analysis. Then, a researcher enables to make strategy to find out the differences and similarities between groups or to analyze similarities and differences through case-to-case comparisons.

The sixth step is to establish a hypothesis. The point of the study means that a researcher constantly compares theory and data, and through this process, new and reasonable theories can be established. The seventh step is to compare and analyze existing theories. From this step, a research enables to compare and to analyze the results of the derived research with contrary and similar theories, which could have strengths such as internal validity, theoretical level improvement, and possibility of generalization. The final step in completing the study, a researcher could terminate the study when theoretical saturation is considered or future studies are not expected significantly.

3.2 Research Question and Select Data

The research questions to achieve the purpose of this study are as follows: 1) how is the trust between an

incumbent CEO and a successor developed? 2) what is the difference in view of trust between an incumbent CEO and a successor? The interview was conducted in a semi-structured method to answer research questions. An incumbent CEO and a Successor were interviewed based on eight questions each organized by the researcher. To achieve analysis of results and research purposes, we strived to selected interviewees as a one-on-one matching of an incumbent CEO and a successor working in a same family business currently and doing in the process of family business succession. Each interviewee' profile is as follows (Table 1 and Table 2).

<Table 1. Profile of an Incumbent CEO Interviewee>

No.	Company	Name	Position	Industry	Succession Status
1	A	Ko	CEO	Manufacturing	Ongoing
2	B	Lim	CEO	Manufacturing	Ongoing
3	C	Cho	CEO	Manufacturing	Ongoing
4	D	Han	CEO	Manufacturing	Ongoing
5	E	Lee	CEO	Service	Consider- ing

<Table 2. Profile of a Successor Interviewee >

No.	Company	Name	Position	Industry	Succession Status
6	A	Ko	Co-CEO	Manufacturing	On -going
7	B	Lim	Assistant Manager	Manufacturing	On -going
8	C	Cho	General Manager	Manufacturing	On -going
9	D	Han	Assistant Manager	Manufacturing	On -going
10	F	Kang	Executive Manager	Manufacturing	On -going
11	G	Lee	General Manager	Manufacturing	On -going

The definitions of a family business used to select the above interviewees are as follows: 1) the company should be controlled by family members (Churchill and Hatten, 1987), 2) the company is during succession or has willingness to succeed in the family business to the next generation in the future, and intends to transfer family's vision (Chua et al., 1999). The CEO of Company E was selected as the interviewee because he was thinking the succession from a positive perspective, although he did not currently decide on starting the succession.

3.3 Analyzing Data

The interviews used in this study were semi-structured. Data analysis obtained through interviews was conducted by Conversation Analysis (Episode Analysis). The reason why the conversation analysis method is chosen, because conversations is not refined and analyzing conversation is difficult due to the feature of the interview, and also the method could make a research to analyze easily. Furthermore, Conversation Analysis is mainly used by a researcher and an interviewee in the interaction process where an interviewee creates and perceives episodes during conversation, so it could be defined as reasons and observation of the knowledge held by interviewees (Yi et al., 2006). The reason for this definition is that conversation is perceived as organized behaviors that is generated under certain social rules rather than created and progressed in random confusion. (Have, 1999).

For the conversation analysis method, we categorized the data in the first order, set sub-category, and assigned meaning to each episode. The top categories were divided into succession, trust, conflict, succession, succession, successor, and the other. Additionally, sub-category was made segmentation with a total of thirty-one sub-categories, sixteen sub-categories of an incumbent CEO and fifteen sub-categories of a successor (Table 3, Table 4, and table 5). Based on this, for enhancing the validity and reliability of the analysis results, we proceeded to a second analysis with an independent coder team, which were consisted three coders. The independent coder team composed three students: the first was master student and the second and third were Doctor

of philosophy candidates, from the Graduate School at University in Seoul.

Significant episodes classified primarily by the researchers were finally used to produce results after a consensus process by independent coders. The process of consensus among independent coders is as follows: 1) Read episodes without the intervention of researchers and classify them into the categories that independent coders thought, 2) If they have reached a consensus on the first classification, move on to the next episode classification, 3) If they did not make a consensus, the researchers explained the context of the episode before and after, and provided some time to independent coders before re-classifying and ordering agreement, 4) Finally, after checking the consensus of independent coders, the researchers proceed with the next episode classification regardless of the agreement.

<Table 3. Used an Incumbent CEO Category and Sub-category >

Category	Sub-category
Succession	Reason for Succession Decision
	Succession Planning and Proposal
	Difficulty of Succession
	Factors Affecting Succession
Trust	Definition and Importance of Trust
	Building Trust Factors and Difficulties
	Recognition of Trust
Conflict	Conflict Factors
	How to Resolve Conflicts
Successor	Successor' Willingness and Attitude
	Successor' Ability
	The Role of Successor
Incumbent CEO	An Incumbent CEO' willingness and Role
	Conversation Frequency and Style

	Communication Manner
The others	Roles and Interventions of Third Parties
	Building Trust with Non-Family Members

< Table 4. Used CEO Category and Sub-category >

Category	Sub-category
Succession	Reason for Succession Decision
	Succession Proposal from an Incumbent CEO
	Succession and Management Plan of Successors
	Importance, Frequency, and Content of the Conversation
Trust	Definition, Forming Factors and Importance of Trust
	Reasons to Trust an Incumbent CEO
	Successor' Efforts to Build Trust
Conflict	Conflict Factors and episodes
	Conflict Resolution Means and Efforts
Successor	Role of a Successor
	Importance of Successor' Ability
Incumbent CEO	Conversation Style of an Incumbent CEO
	Changing an Incumbent CEO Role
The others	Importance and Role of a Mother
	Etc

4. Analysis Result

To calculate the validity (reliability) used in this work, we utilized Miles & Huberman's validity discriminant calculations. Miles & Huberman (1994) argued that

the validity was calculated by dividing the number of consensus episodes by dividing a total of episodes, and if the value was 0.8 or higher, there was no problem in proceeding the study by retaining the validity (Feature 1).

$$\text{Validity (Reliability)} = \frac{\text{Consensus Episodes}}{\text{Total Episodes}}$$

<Feature 1. Formula for Validity>

A total of 344 episodes were classified as primary significance by researchers, with 128 episodes of an incumbent CEO and 216 episodes of a Successor. Of the total 344 episodes, 288 were agreed upon by independent coders, so the result of validity rate was 0.837. In detail, the result of an Incumbent CEO was 0.805 with 103 consensus out of 128 episodes, and the result of a Successor 185 consensus out of 216 episodes, resulting in 0.856. With the overall validity was higher than 0.8, we could proceed to the next detailed analysis.

The results by category are as follows: Succession category (category 1) resulted in 67 episodes matching out of 78 episodes, the rate was 0.858, Trust category (category 2) in 85 episodes matching out of 97 episodes, the rate was 0.876, and Conflict category (category 3) in 48 episodes out of 56 episodes, the rate was 0.857. A Successor category (category 4) resulted in 36 matching out of 45, the rate was 0.800, an incumbent CEO category (category 5) resulted in 26 matching out of 33, the rate was 0.818, and the Others category resulted in 26 matching out of 35, the rate was 0.742. The summary table of analysis results by category is as follows.

<Table 5. Summary Table of Analysis Results by Category >

Category	1	2	3	4	5	6	Total
Total Episodes	78	97	56	45	33	35	344
Consensus Episodes	67	85	48	36	27	26	289

Discordance Episodes	11	12	8	9	6	9	55
Result	0.858	0.876	0.857	0.800	0.818	0.742	0.837

<Table 6. Analysis Results Among Coders and Researchers>

Case No.	Total Episodes	Consensus	Disagree-ment	1 / 2	2 / 3	1 / 3	All Disagree-ment	Disagree-ment researcher
1	24	21	3	1	1	1	-	-
2	27	20	7	4	-	1	2	-
3	24	19	5	-	1	1	3	-
4	28	23	5	1	-	2	1	1
5	25	21	4	1	1	1	-	1
6	37	33	4	1	1	-	2	
7	43	40	3	-	-	-	-	3
8	24	21	3	1	1	-	1	-
9	28	25	3	1	1	1	-	-
10	43	36	7	1	3	1	2	-
11	41	31	10	-	3	2	4	1
Total	344	290	54	11	12	10	15	6

The meaning of symbols used in the details of consensus among coders and researchers is as follows (Table 6): Case No. means the No. in table 1 and table 2. Total episodes refer to the total number of episodes used for each case, and consensus signifies the number of concordant episodes in total episodes. Disagreement indicates the total number of disagreements among independent coders. 1/2 means that the opinions of independent coders 1 and 2 were agreed, but not with independent coders 3. 2/3 was meant the agreement with independent coders 2 and 3, but not with independent coders 1. 1/3 means that the opinions of independent coders 1 and 3 were agreed, but not with independent coders 2 and all disagreement means that all three independent coders were inconsistent. Finally, disagreement researcher means that the opinions between

independent coders were consistent, but not with the opinions agreed by the researcher.

Significant information (episodes) selected by the researcher is used for the analysis and a summary of the interview results of five incumbent CEOs is as follows: First, the succession plan for a successor already existed regardless of a successor' opinion. This means that an incumbent CEO' willingness to succeed is more important than a successor' willingness to begin the succession. Second, incumbent CEOs were recognized as having the same right of trust with a successor as the right of birth. This trust relationship means that there is a significant difference from the usual trust-forming process. Third, incumbent CEOs thought that a Successor needed time and environment to train himself/herself. Most incumbent CEOs mentioned that a successor needs to overcome the surrounding environment and adversity on his / her own. Fourth, as a result of previous research, conversations with a successor were considerable importance. Among them, the quality of conversation, such as the purpose of the conversation and the ability to communicate, is more important than the frequency of the conversation.

A summary of the interview results of six successors is as follows: First, successors responded that they had a high trust relationship with an incumbent CEO, but there was something in common that they did not recognize until they were asked. Nevertheless, successors answered that they had a high trust relationship and decided to succeed, because of it. Second, they chose conversation as the factor that played the most significant role in forming trust with an incumbent CEO. In particular, they emphasized that an incumbent CEO and a successor should have high conversation skills to facilitate effective and efficient conversation. Third, successors had a trust relationship unrelated to the double role of an incumbent CEO. Due to this, they explained that they suffered from conflict and confusion owing to trust relationships in vague and inarticulate. Fourth, successors generally received an offer to join and succeed first by an incumbent CEO. This means that there is a possibility that an incumbent CEO may intervene in the life of a successor in consideration of succession. Fifth, successors described that the

involvement of third-party family members is important in conversation with an incumbent CEO to resolve conflicts. In particular, they emphasized that the role of an incumbent CEO's spouse plays a momentous role in resolving conflicts. Finally, successors mentioned the significance of education for the succession and for the formation of trust with an incumbent CEO. They explained that postgraduate degree programs had a positive impact on building trust with successors.

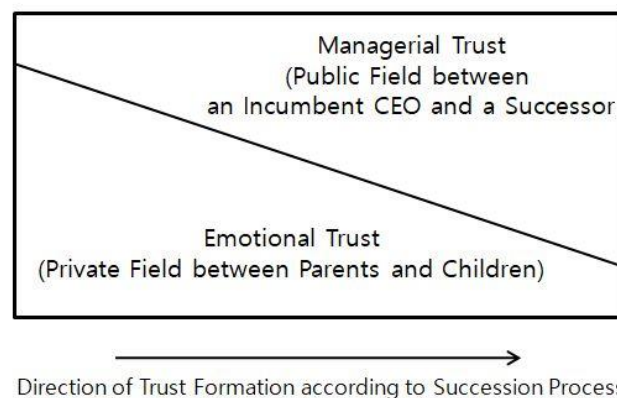
5. Conclusion

In order to improve the validity and theoretical level of the results of this study, we compared and analyzed the findings with previous studies to draw conclusions. Out of the results that fit the purpose of this study, we drew conclusions by dividing results into three distinctive and important topics. First, we analyzed the process of building trust between an incumbent CEO and a successor, and secondly, we analyzed the differences between the views of the trust in previous studies and the views of the interviewees in this study. Finally, we conducted on the role of an incumbent CEO and a successor.

The purpose of this study and the most characteristic part of the results was the process of building trust. Trust has been studied in various areas by many scholars with various definitions. However, in common, trust involves the concept of risk and interdependence (Rousseau et al., 1998). A representative concept in which trust formed could be described from Calculative trust to Relational trust (Rousseau et al., 1998). Besides, the process of forming knowledge-based trust into affective trust, (Lewicki & Bunker, 1996; Mcallister, 1995; Coleman, 1990), and the process of forming from Cognitive-based trust to Affect-based trust (Fryxell, Dooley & Vryza, 2002) also has similarities in the process of building trust.

On the other hand, the process of building trust between an incumbent CEO and a successor differed from that in previous research. The process of building trust between an incumbent CEO and a successor was characterized by being formed from Emotional trust to Managerial trust (Feature 2). Especially, the trust did not disappear at the end of both sides and

coexisted. This characteristic could be explained a result of contradicting the process of forming the trust that generally disappears at both ends in previous studies. The process of building trust between an incumbent CEO and a successor is different from the commonly defined process of building trust, and the form of trust that could be seen as a private field between parents and children is changed to the area of public trust in management.



<Feature 2. Formation of Trust>

The second result is as follows. Trust has been widely studied as an important and essential factor in a family business research. In previous studies, Goldber & Wooldrige (1993) argued that good relationship based on high trust with an incumbent CEO and a successor was a prerequisite for successful successors, and stressed that successful and good a successor had better relationships with an incumbent CEO than those who did not. According to a study by Cho et al. (2018), the high level of communication with parents based on trust was affecting the satisfaction of preparation for succession. Those who participated in the interview also responded that they would not have started succession if they had low or no trust. However, in the case of successors, trust was such a critical factor, but they answered that they had never seriously thought or thought about a trust relationship until they heard the question. In other words, it can be explained from a successor's point of view that trust formation with an incumbent CEO is formed under unconscious or unintentional circumstances. From the study of Morris et al. (1997), it was necessary to strive for building trust with family members for a successful succession, which meant the

time before the successor decides or begins to succeed was needed. Therefore, we recommend that an incumbent CEO and a successor should prepare and make efforts to build trust long before the start of succession.

The final conclusion of this study is that: A family business consists of a subcategory system of family, business, and ownership (Tagiuri & Davis, 1978), and family members in each or all systems have usually one or more roles that fit the system at the same time. These roles have complementary characteristics, but the overlapping roles may cause conflicts and conflicts between roles.

According to the results of this study, successors responded that the role distinction of these incumbent CEO was ambiguous and it was intensely difficult to distinguish. This situation led to conflicts or confusion with an incumbent CEO. On the other hand, incumbent CEOs were found to have clear boundaries on the division of roles of successors. Before the start of succession, an incumbent CEO had looked at a child only, not a successor. However, after the beginning of succession, an incumbent CEO had been a tendency to clearly distinguish the boundaries between children, a successor, or an employee, and they emphasized the division of roles significantly. This difference of perspective to roles means that work instructions, advice, etc. made without accurate recognition of the role may cause conflicts between an incumbent CEO and a successor. Thus, before succession begins, we recommend that an incumbent CEO and a successor should communicate each other what they have respective roles and how they redefine their roles in depth.

The limitations of this study and future studies are as follows: First, category six did not exceed the criteria for ensuring validity. For category 6, the consensus matching result between independent coders was 0.742, which did not exceed 0.8 given by previous studies. In particular, in some cases, the proportion of discrepancies between the researcher and independent coders was also high. Due to this reason, complementary research on category 6 is expected to be studied in the future. Second, Eisenhardt recommended that the same research conducted by

other researchers, but this study made efforts to ensure validity and reliability using independent coders without managing an interview team due to various realistic limitations. In future studies, studies should reflect these limitations. Finally, there are limitations of perspectives on various stakeholders. This study was conducted only from the perspective of an incumbent CEO and a successor, according to the purpose of this study. However, the succession process involves various stakeholders other than an incumbent CEO and a successor. Therefore, further studies would reflect the various stakeholder' perspective.

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The Role of Youth Entrepreneurship for Economic Development in Nepal

Gopal Bahadur Bhandari

PhD Scholar, Faculty of Business and Accountancy

Lincoln University College, Malaysia

gopalbnb@gmail.com

Abstract

There is no doubt that young people are more mobile, ready for change, adaptable, these features create the need for a special class of singles - young entrepreneurship.

Youth entrepreneurship is one of the factors in the development of the country's economy, so there is an urgent need to attract young people to entrepreneurship. The GEM Report (2012) defines youth entrepreneurship as an additional way to allow young people into the labor market and encourage job creation. Young entrepreneurship is likely to be a panacea for solving youth unemployment problems.

Activity in the aspect of youth entrepreneurship is aimed at solving problems, primarily of socio-economic nature: reducing the unemployment rate, the possibility of creating a number of new jobs, the development of new directions and sectors of the economy, etc. The article presents an interpretation of youth entrepreneurship, which identified some of its features, as well as a number of strengths and weaknesses of this phenomenon.

Introduction

We are facing a great test of our time - an epidemic of youth unemployment. Half of the world's young people in the labor force are either working poor or unemployed. The global youth unemployment situation is intolerable, in particular for young women. In countries rich and poor, unemployment rates for young people are many times those of adults and of course joblessness is the tip of the iceberg. Many are stuck in low wage work with no protection in the informal economy. Many others find that their schooling has not equipped them with the tools for today's job market ... Work is far more than a source of income; it is a source of dignity!

Ban Ki Moon, ILO, 2014

The recent economic crisis has led to a disproportionate increase in youth unemployment around the world. Young people in both developed and developing economies are facing harsh labor market conditions. In the developing world, where almost 90% of the world's youth is located, many young people are living in poverty with their only access to work being informal or under indecent

employment conditions. However, youth joblessness is not only a problem of poor countries but a truly global problem with an equally grim picture being drawn in the developed world. In Europe, leaving every fourth employable young person without a job (ILO, 2012a) in many countries these numbers are even greater. According to the ILO the overall youth unemployment is projected to further increase in the near future. Other labor market indicators such as a widening gap between youth unemployment and adult unemployment and an increasing rate add up to an even bleaker outlook for youth. All these factors combined force us to take the initiative and come up with quick win solutions and at the same time sustainable ones for the future.

There is no doubt that young people are more mobile, ready for change, adaptable, these features create the need for a special class of singles - young entrepreneurship.

Youth entrepreneurship is one of the factors in the development of the country's economy, so there is an urgent need to attract young people to entrepreneurship. The GEM Report (2012) defines youth entrepreneurship as an additional way to allow young people into the labor market and encourage job creation. Young entrepreneurship is likely to be a panacea for solving youth unemployment problems.

Youth entrepreneurs are those individuals less than 30 years of age that are typically motivated to begin an entrepreneurial venture due to a variety of factors, including a desire to:

- be their own boss
- obtain an alternative route for advancement from what is perceived to be a dead-end job
- have more control over their own work and life
- provide innovative or competitive products and services
- prove they can do it
- obtain additional income

The activity in the aspect of youth entrepreneurship is aimed at solving problems, primarily of socio-economic nature: reducing the unemployment rate, the possibility of creating a number of new jobs, the development of new directions and sectors of the economy, etc. The article presents an interpretation of youth entrepreneurship, which identified some of its features, as well as a number of strengths and weaknesses of this phenomenon.

Youth

“Youth has a natural disposition for innovation and change on which we can capitalize, as long as we are clear that successfully launching a new enterprise - however small - is a process of innovation.”

Carlos Borgomeo

In the broadest sense youth can be considered the transition period from the dependence of childhood to the independence of adulthood and an awareness of that independence (UNESCO, 2014). Yet, as described above this is a somewhat relative measure and depends on a variety of factors such as the average age at which young people complete their education (or training) and the average age at which their communities would expect them to take on adult roles (e.g. enter employment). From a legal perspective the definition of youth also varies with respect to reasons such as marriage, voting rights, land rights, criminal offences, and military service, among others. Consequently, countries vary considerably in their definition of youth and policies need to be customized to the local conditions. While Uganda defines youth from 12–30 years, Nigeria and Bangladesh define youth from 18–35 years. In the context of Nepal, the National Youth Policy 2015 defines youth as “citizens between the ages of 11 and 40”. The government's Youth Vision 2025 has categorized the youth into two age groups of 16 to 24 years and 25 and 40 years.

The United Nations (ILO) defines “youth” as persons between the ages of 15–24 whereas the government of Nepal extends the definition to those between 16 and 40 years of age, which accounts for over 40 percent of the country's population, according to the Population and Housing Census Report 2011. Among them, nearly 46 percent are men and more than 54 percent women. Taking into account a broad range of contextual issues, UNDP Nepal uses a more flexible definition of youth in order to align with Nepal's socio-cultural context and the national youth priorities.

Youth Issues in Nepal

Prospects of youth entrepreneurship in Nepal

Numerous factors are impeding the development of Nepal's youth, including shortage of employment opportunities—as a result of which overseas migration and brain-drain has increased, with its own repercussions: limited participation in political processes, involvement in illicit activities, vulnerability to climate change, and multiple forms of discrimination.

Youth and employment

Unemployment rates are higher for young people than for the whole of the Nepali population. The unemployment rate for those aged 15–29 is 19.2 percent. Young women also fare worse than men regarding their employment ratio (33.4 and 42.8 percent, respectively) and their labour force participation rate (43.0 and 51.7 percent, respectively). In addition, close to 27 percent of all unemployed youth have been looking for work for more than one year. These young people will experience increasing difficulty finding decent jobs that allow them to lift themselves and their families out of poverty

Youth and migration

Over 1,500 young Nepalese leave the country on a daily basis to enter overseas job markets. According to data from the World Bank, Nepal receives remittances worth about 28 percent of the country's GDP. In the last two decades, the country has seen a dramatic rise in internal and international migration, from rural areas to urban centers, and from Nepal to India and Middle East countries. According to Labour Migration for Employment, A Status Report for Nepal 2013/14, overseas employment is heavily male dominated; roughly 95 percent of all labour permits are given to men. However, other data that captures those working in India (where labour permits are not required) or those leaving to work abroad through informal channels indicates that female migration might be as high as 12 percent of the total workforce abroad. Poverty, limited employment options, delayed political transitions and instability are some of the contributing factors to the increase in youth migration.

Youth and participation

The commitment and contribution of young people has been crucial to the success of many political milestones that have shaped the establishment and strengthening of democracy in Nepal. These include, among others, movements to bring about the end of the Rana rule in 1951; the dissolution of the Panchayat regime and establishment of a constitutional monarchy in 1990; as well as the 2nd people's movement of 2006 which opened the way for Nepal's transformation into a federal democratic republic. Despite these examples, the meaningful political engagement of youth and youth issues in general has not been given an important place in the country's key priorities. Young people continue to remain at the margins of the political, social and economic spheres. Formal political processes and institutions are still characterized by limited youth participation. Even in the youth wings of political parties, almost all leaders are above 35 years of age. Young men and women are thus very often disillusioned with political leadership and excluded from

policy development and decision-making institutions. The political activism of young Nepalese has therefore not always been channeled through significant formal mechanisms. Youth participation has also been hindered by the absence of local elections between 1997 and 2017

Youth and peace building

The armed conflict that lasted from 1996 to 2006 had significant implications on youth in Nepal. While many young people became victims of human-rights abuse, sexual violence and torture during that period, many others, particularly marginalized youth who did not have access to viable livelihood and employment options were pulled into illicit activities and acts of violence. Much attention is thus needed to enable the social, political, economic and, in some cases, cultural reintegration of these young men and women into society.

Youth and resilience

Nepal ranks 4th, 11th and 30th out of 198 countries in terms of relative vulnerability to climate change, earthquakes and flood hazards respectively. As the severity of climate change increases, and with it, the frequency of extreme events, the existing vulnerabilities of young people risk being exacerbated.

On the other hand, however, if their networks and capabilities can be effectively harnessed, youth also have great potential to contribute to the recovery and resilience of their communities with regard to the impacts of natural disasters, as was seen in the aftermath of the 2015 earthquake.

Youth and diversity and vulnerability

Young people in Nepal are not a homogeneous constituency, and their needs and life experiences vary dramatically. Different groups require specific attention with regard to the particular challenges of exclusion, inequality and discrimination they face. These include young women vulnerable to sexual abuse and exploitation; highly marginalized indigenous youth; disadvantaged young women and girls; Dalit youth; young people with disabilities; youth without basic education; unemployed youth; migrant workers and their families; rural landless and land-poor youth; young bonded and forced laborers; young urban slum dwellers and squatters; conflict-affected youth; young people especially vulnerable to climate risks; sexual and gender minority youth; and young people living with HIV, among others.

National Framework For Youth

There are a number of policies, plans and infrastructures in place for the empowerment of young people in Nepal, to enable them to contribute to development processes. These commitments, if translated into action, can help youth take up their roles as active citizens for transformational change. Several key national-level structures and policies have prioritized youth issues:

Constitution of Nepal

The Constitution of Nepal, promulgated in 2015, promotes policies to encourage youth participation in the all-round development of the country. For this, it emphasizes the creation and provision of opportunities for young people in the fields of education, health and employment, aimed at boosting their personal development and empowerment.

Ministry of Youth and Sports

The Ministry of Youth and Sports was established in 2009 with the mandate of promoting and supporting youth development in Nepal. The ministry's core areas of work include developing youth policies, strategies and plans; creating implementation mechanisms; and ensuring resources are allocated to execute these policies and plans. It is also responsible for monitoring and evaluating the implementation of the National Youth Policy. It has launched several programs for youth welfare, such as the Local Youth Partnership Program 2009/2010. The Ministry of Finance, meanwhile, allocates a portion of the annual budget to youth development activities, such as the Youth Self-Employment Program, the Grand Youth Sports Competition, and the Youth Mobilization Program, among others.

National Youth Council

The Ministry of Youth and Sports has formed an autonomous and executive National Youth Council. This council consists of representatives of concerned ministries, representatives of youth organizations of political parties and office-bearers appointed by the government. The Council's main objectives are to coordinate, harmonize and facilitate youth-related programmes launched by governmental and non-governmental institutions, as well as the private sector.

Youth Vision 2025

This 10-year strategy for youth development was prepared by the National Youth Council under the Ministry of Youth and Sports, and mainly focuses on areas of education,

employment, health, social security, leadership development and sports and entertainment. It is to be implemented through the National Youth Council and its chapters at sub national levels.

National Youth Policy

The National Youth Policy was developed by the Ministry of Youth and Sports to empower young people. It aims to do this by building youth capacity to contribute to a prosperous, modern and just Nepal, and integrating young people in national development through meaningful participation and leadership. The policy was developed in the context of the Interim Constitution of Nepal 2007, which mandated that the state “shall pursue a special policy to mobilize youth human resources for the development of the country.”

Nepal’s 14th Development Plan

The 14th Development Plan (2016/17-2018/19) includes a chapter on youth development, in which it recognizes the role of young people as major contributors to socio-economic development and sustainable peace, and the need to provide them opportunities to exercise their potential. This acknowledgement of youth in the government’s plan represents an important step forward, a victory for the coalition of organizations advocating on behalf of Nepal’s youth. According to the plan, the policies and programmes of the government for the fiscal year 2073-74 (2016-2017) have highlighted provisions targeted at youth. 50,000 young people, for instance, will be self-employed every year through the Youth Self-Employment programme, which is to be scaled up. As part of this, unemployed youth will also be granted access to concessional loans on the basis of project ideas.

Nepal’s 15th Development Plan

The 15th Development Plan (Fiscal Year 2019/20 – 2023/24) includes a chapter on youth, in which Constitutional provision for the development of youths, the existence of various structural provisions for the holistic development of youths, increased political will for the development of youths, representation of youths in all three tiers of governments, opportunities for globalization and development of information technology, creating employment opportunities and self-employment opportunities as a high priority of the government, and the existence of demographic dividend are the major opportunities for youth development.

According to the plan, the policies and programmes of the government for the fiscal year have highlighted with the increased accessibility of youths in the financial resources and skill enhancement training, youth participation in the country’s business and enterprises will have increased. Status of youth employment and self-employment will have improved significantly and the number of youths willing to go abroad for high-risk jobs will have dropped substantially. Increased and meaningful participation of youths in the process of governance will have contributed to the promotion of good governance. Youth volunteers will have been mobilized widely in physical infrastructure, health, education, agriculture, environment, and social development along with disaster management activities.

Youth organizations

National Non-Governmental Organizations and Civil Society Organizations play a vital role in youth empowerment in Nepal. There are almost 46,500 NGOs affiliated with the Social Welfare Council, among which around 20 percent are youth organizations. There are also around 190 INGOs working under agreement with the council, some of which directly work on youth issues. UNDP Nepal has partnered with several of these organizations in collaborative efforts for youth engagement and empowerment.

Entrepreneurship

Different opinions on, and therefore different definitions of, entrepreneurship can be observed in the academic literature, in policy documents and in the media. The GEM model accepts the multifaceted nature of entrepreneurship.

Entrepreneurship is acknowledged as one of the drivers of sustainable economic growth because entrepreneurs create new businesses, drive and shape innovation, speed up structural changes in the economy, and introduce new competition – thereby contributing to productivity. Entrepreneurship can drive job creation and contribute to economic growth that is inclusive and reduces poverty. Research has attached numerous definitions and explanations to the term entrepreneurship. For the purpose of this paper, entrepreneurship is defined as ‘any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business’.

In some ways, entrepreneurship has baffled researchers in social sciences the way subatomic particles have baffled physicists. Its impact is observed, but the thing itself seems ephemeral and invisible (Rogoff and Lee 1996). Just like

the physicists, who study the traces of the particle action on the electronic microscope screen, the researchers from the entrepreneurship domain have examined its economic results: new enterprises, more jobs, new products invented and services offered. But when it comes to determining what exactly created these phenomena, very few experts agree with each other.

Why youth entrepreneurship matters

The traditional job for life career path has become rarer and youth entrepreneurship will need to be seen as an additional way of allowing the youth into the labour market and promoting job creation. Organizations and initiatives such as the ILO20, United Nations, World Bank and YBI highlight a number of additional positive advantages to stimulating youth entrepreneurship:

It is an option to create employment for the youth. Young entrepreneurs are more likely to hire fellow youths. Young entrepreneurs are particularly responsive to new economic opportunities and trends.

Young people are active in high growth sectors. Young people with entrepreneurial skills are better employees. They are more innovative and often create new forms of independent work; • Young people who are self-employed have higher “life satisfaction”.

Entrepreneurship offers unemployed or discouraged youth an opportunity to build sustainable livelihoods and a chance to integrate themselves into society. Entrepreneurial experience and/or education help youth develop new skills that can be applied to other challenges in life. Non-cognitive skills, such as opportunity recognition, innovation, critical thinking, resilience, decision making, teamwork, and leadership will benefit all youth whether or not they intend to become or continue as entrepreneurs.

Know about young entrepreneurs in the Asia Pacific and South Asia

- Only 16.8 percent of the youth indicate that they have both the belief that there are good business opportunities as well as the belief that they have the skills and knowledge required to start a business.
- Ten percent of the youth are involved in either nascent or new businesses
- The majority (80%) of youth businesses are opportunity-driven.
- Forty percent of the youth indicated that fear of failure would prevent them from starting a business.

- Just over 60 percent (61.2%) of the youth believe that starting a business is a good career choice.
- The youth (68%) in this region are least likely to believe that successful new business owners receive high status.
 - Almost 9 percent of the youth involved in new and nascent businesses have high growth expectations i.e. intend creating 20+ jobs in the next 5 years.
 - Over half (53.8%) of the youth in this region have at least a post-secondary school degree; this is the highest percentage in all regions.
- The youth in this region are most likely to make use of an on-line trading environment.
 - While three-quarters (73.2%) of new or nascent businesses are reliant on personal/family or friends for funding to start a business, family and friends are the primary source of funding (41.5%) in this region.
 - Young nascent or new businesses in this region are least reliant on friends or family as customers, with 29 percent indicating that none of their customers friends or family.
 - The youth in this area have a number of people influencing their decision to start a business.
 - Young nascent and new business owners, as a long term option, would prefer to continue to run their own business.

Challenges of youth entrepreneurship in Nepal

The challenges facing young people when deciding whether to start a business could be due to issues specific to the area in which the young person operates. These issues could be gender- or culture-related, educationally-based or due to the particular political or economic issues facing an area.

No doubt, entrepreneurs, all over the world, face some common constraints/ challenges. Furthermore, it is also well evidenced that both adult run enterprises and youth run enterprises face some similar kind of problems in many respect such as lack of access to capital, access to lucrative market, lack of management skills, inadequate planning, lack of new product development etc (Chigunta 2002). With this current magnitude of youth unemployment in Nepal, as well as the reluctance of several traditional industries to employ young graduates, fostering youth entrepreneurship could be a better strategy to address the issue of unemployment in the country (James 2012). Central Bureau of Statistics report (2010) argued that youth unemployment in this country can not only be addressed with singly youth

policy, rather youth development in the country is everyone's responsibility, such as government, ministry of youth, private sector, civil society, NGO's and other concerned stakeholders. Therefore, the general factors that are likely to inhibit youth entrepreneurship in Nepal are outlined below.

Access to finance

Access to finance is also very important for every individual to achieve their business objectives, particularly for start-ups and growth. Therefore, for potential entrepreneurs, raising adequate finance to meet the financial requirement of business opportunities is frequently highlighted as one of the most crucial entrepreneurial inhibitors (Schoof 2006). In addition, young entrepreneurs find the added burden of compliance costs and local authority charges, most difficult to manage when starting a business venture. status/form of enterprises, lack of micro funding and seed funding, etc.

Administrative and regulatory burden:

Today, young entrepreneurs face numerous administrative burdens including business registration, tax administration, obtaining investment approvals and business licenses, coping with copyright and patent regulations, competition law, access to work space and long term leases, construction and building permits, customs clearances, utility hook-ups etc (La Porta, Lopez-de-Silanes et al. 1999). These issues are particularly considered to be a burden for young people who want to start-up new business venture, as young people often do not have prior or less experience in such matters.

Lack of interest in entrepreneurship

Entrepreneurship is not being regarded as better career option amongst youth in Nepal; rather they prefer to embrace paid work far in Middle East and Malaysia as migrant worker. Young graduates from Universities and migrant worker returnees should be encouraged to equip to pursue career in entrepreneurship, instead of looking for a paid job (Richards 2006). Research had found that the youth's low level of economic activity is accompanied by their taking little interest in starting their own businesses. It is worth noting that the interest shown by Nepalese youth in entrepreneurship lags far behind that of their global counterparts.

Business assistant and support

The chances of creating a successful and sustainable business depends on how much business assistance a young entrepreneur obtains in the start-up and new business phases. Support services, including mentors, support networks, business clubs and incubators can hold the key to transforming the start-ups into successful small and medium businesses (Schoof 2006). There are number of support structures, which are aimed at dealing with this issue.

Inadequate entrepreneurial skills:

There is a great deal of entrepreneurial skills shortage within the SME's sector, particularly among young people in Nepal, and this could deteriorate creativity and innovation for products and services (Gwija 2014). Therefore, discouragement of youth entrepreneurship in Nepal has been linked to lack of business skills and no access to business information (Adhikari 2008). These business skills include recognition of opportunities, innovation, creativity, determination, risk taking attitude and entrepreneurial characteristics

Access to market: The lack of sustainable markets for entrepreneurs' products and services are among factors that could lead to business failure (Nieman and Nieuwenhuizen 2009). Most of the youth led entrepreneurial ventures do not pay attention on marketing which ultimately lead to customer dissatisfaction, and survival of the business may not exist in the long run (Gwija 2014). In Nepal, most of the small and medium enterprises that youth owned tend to operate only among clients they know, products are sold to the relatives and friends, and suppliers tend to be the people they know through family or other close connections (Timmons 1985). Most of the youth has not been trained in participating in market place, or in tapping new markets (Bushell 2008). Entrepreneurs are responsible for delivering products and services to the market and make profit by selling them.

Access to formal education

Entrepreneurship education is crucial in assisting young people to develop entrepreneurial skills, attributes and behaviors as well as to develop enterprise awareness to understand and to realize entrepreneurship as a career option, because entrepreneurship is one of the best career options for the young people (Schoof 2006). Entrepreneurship education is not only a means to develop youth entrepreneurship and self employment, but at the same time to quip young people with the attitudes and skills, necessary to handle uncertainty in today society. Enterprise education is therefore seen as a highly valuable preparation for the changing job market and economy in which young

people have to operate (Gallaway, Andersson et al. 2005). Although education and training has been given priority in Nepal over past decade, entrepreneurial education has not been incorporated in mainstream education system.

Social cultural constraints:

The 2006 GEM report discovered that the upbringing environment of a child influenced their career of choice, mostly believing that seeking for a paid job was a better option (Minniti, Bygrave et al. 2006). Conversely, Fatoki and Chindoga (2011) believe that these findings suggest that the existence of social-cultural constraints that are likely to negatively affect the participation of young women in entrepreneurship.

The Role of Entrepreneurship in Economic Development

For sake of comparison, the World Economic Forum defines three consecutive stages of economic development that correspond to progress towards economic prosperity. Economies in the basic agrarian stage are labeled “factor-driven.” Economies that have advanced beyond this initial stage are labeled “efficiency-driven” and are host to a developing industrial sector. Economies that progress beyond this second stage into the third, prosperous stage are labeled “innovation-driven.” Note that every national economy is host to some level of each of the three principal stages of economic development. However, the WEF group’s national economies into one of the three according to which stage is dominant WEF_GlobalCompetitivenessReport_2009-10.

Nepal’s economy is categorized within the factor-driven stage, and its entrepreneurial characteristics are measured here against those of other countries that fit into this stage and of countries that have reached the factor-driven stage.

Entrepreneurship in Factor-Driven Economies

Economic development consists of changes in the quantity and character of economic value added (Lewis, 1954). These changes result in greater productivity and rising per Capita incomes, and they often coincide with migration of labor across different economic sectors in the society, for example from primary and extractive sectors to the manufacturing sector, and eventually, services (Gries and Naude, 2008). Countries with low levels of economic development typically have a large agricultural sector, which provides subsistence for the majority of the population who mostly still live in the countryside. This situation changes as industrial activity starts to develop,

often around the extraction of natural resources. As extractive industry starts to develop, this triggers economic growth, prompting surplus population from agriculture to migrate toward extractive and emergent scale-intensive sectors, which are often located in specific regions. The resulting oversupply of labor feeds subsistence entrepreneurship in regional agglomerations, as surplus workers seek to create self-employment opportunities in order to make a living.

Traces of Entrepreneurship in Nepal

Nepal has yet to achieve the true potential of its economic strength. According to the Global Entrepreneurship Monitor, entrepreneurship is one of three primary contributors to national economic growth, along with established firms and new branches of these firms. (“2008 Executive Report,” p. 10). Nepal has not exhibited yet the level of entrepreneurial activity among the nations included in the Global Entrepreneurship Monitor. While recent entrepreneurial activity in Nepal reflects a lack of entrepreneurship, some notable exceptions have surfaced over time and have made significant impacts on the economic growth of Nepal.

The Global Entrepreneurship Monitor identifies three framework conditions of entrepreneurship: attitude, activity, and aspiration. In order for a nation to successfully foster entrepreneurship, it must endorse a supportive entrepreneurial attitude, encourage entrepreneurial activity, and promote hopeful entrepreneurial aspirations. (“2008 Executive Report,” p. 9) Figure 1 illustrates the relevant factors that I examine in addressing each of these three conditions.

The GEM model recognizes entrepreneurial attitudes, activities and aspirations as dynamic, interactive components of national entrepreneurial environments. The adult population survey includes questions relating to all three of these components. Entrepreneurial activity does not take place in a vacuum. Entrepreneurial attitudes and perceptions play an important part in creating an entrepreneurial culture and have a profound effect on a number of activities in the entrepreneurial pipeline.

Youth Entrepreneurship: A Powerful Resource

The potential for Nepal to achieve substantial economic growth by taking advantage of its youth entrepreneurship resource is tremendous. Roughly 40.35 percent of the total Nepal’s population 28,087,871 is between the ages of 16 and 40. (The Fifteenth Plan -2023/24)

Nepal's economy will gain a competitive advantage through the engagement of its youth in entrepreneurial endeavors. Spreading youth enterprise can reduce welfare costs and increase revenue for the government. It can also encourage the development of a dynamic small business sector, increase demand in the local economy, and improve community involvement. Furthermore, young minds may be particularly responsive to emerging trends and opportunities in the economy. Young entrepreneurs can also offer a significant resource in being able to identify alternatives to current organization, technology, and market approaches.

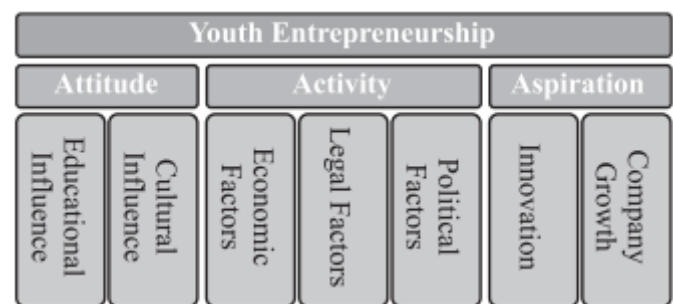
As Carlos Borgomeo, Vice Chair of the OECD LEED Directing Committee emphasizes: This is the opportunity that has to be seized. Youth has a natural disposition for innovation and change on which we can capitalize, as long as we are clear that successfully launching a new enterprise — however small — is a process of innovation. (Borgomeo, as quoted in Chigunta, p. 2)

In addition to its advantages at the national level, youth entrepreneurship offers a variety of benefits specifically to the young ambitious men and women who pursue their own entrepreneurial endeavors. Chigunta notes that youth enterprise could provide a sense of “meaning and belonging” to the marginalized youth present in the developing economy of Nepal. (Chigunta, p. 2) Programs that support the development of youth entrepreneurship provide their participants with skills that can also help them adapt to non-entrepreneurial employment. Therefore, regardless of whether program participants pursue their own entrepreneurial ambitions or seek employment in established firms, their value to business and thereby to the economy of Nepal is significantly enhanced.

Entrepreneurship in Nepal

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Figure 1 Three Framework Conditions of Entrepreneurship and Their Respective Contributors



Source: Author's figure based on terminology from “2008 Executive Report.”

Entrepreneurial Attitude in Nepal

Before any opportunity is pursued, the entrepreneur-to-be takes a moment to assess its value. It is during this moment that the first framework condition of entrepreneurship, entrepreneurial attitude, becomes relevant. Educational and cultural influences play major roles in shaping this entrepreneurial attitude.

Educational Influence

Highly effective entrepreneurship education and training must begin early. According to the GEM “2008 Executive Report,” the quality of entrepreneurship education and training outside of the formal education system was consistently higher than entrepreneurship education and training during formal schooling in the countries included in the report.

However, in efficiency-driven economies the quality of entrepreneurship education and training outside of formal schooling was reported to be on average 60 percent higher than the quality of entrepreneurship education and training during formal schooling. (“2008 Executive Report,” p. 43) Alternatively, in innovation-driven economies exhibiting more complex, higher quality entrepreneurship, the quality of entrepreneurship training during school was assessed by experts to be just 25 percent lower than training outside school. This comparison is evidence that in order to elicit the development of promising entrepreneurial skills, the quality of entrepreneurship training during formal schooling must be both high and on a par with entrepreneurship training outside of formal schooling.

Nepal in particular reported quality levels of entrepreneurship education and training that were below the efficiency driven economy average for training during school and outside of school respectively, indicating alarmingly low-quality entrepreneurship education and training. Furthermore, GEM entrepreneurship experts reported that the availability of entrepreneurship education

and training was lower in Nepal than in nations with innovation-driven economies. These deficits may be reflective of the low level of government spending on education.

Cultural Influence

A cultural environment that supports entrepreneurship is critical in developing a successful entrepreneurial attitude. As recently the country's population was found to be slightly supportive of entrepreneurship.

In 2009 the GEM reported that the fear of failure in business and the pessimism about the availability of potential business opportunities were both on the rise. The gender disproportion of new entrepreneurs hints at a lack of support for females.

Entrepreneurial Activity in Nepal

As illustrated previously in Figure 1, the second framework condition of successful entrepreneurship is entrepreneurial activity. The entrepreneurial activity of new entrepreneurs is in turn influenced by three factors that affect the development and viability of their entrepreneurial efforts: economic, legal, and political factors.

Economic Factors

One of Nepal's main competitive advantages in its push toward greater economic growth is its market size. In addition to its domestic market, Nepal is sandwiched between two giant economies -China and India. The nation is geographically positioned in close proximity to them. Further bolstering its market base, Nepal also enjoys free trade. This combination of market size and accessibility bodes well for youth entrepreneurship because of the expansive opportunity set it creates. In addition to the availability of markets, adequate funding is critical in order to capitalize on entrepreneurial opportunities.

The availability of funding is often influenced by the macroeconomic stability of the nation.

Legal Factors

The legal procedures of starting a business can severely inhibit entrepreneurial development if these procedures are time-consuming and labor-intensive.

The "Doing Business 2020" report indicates provides a slight advantage for developing youth entrepreneurship in Nepal

Furthermore, the low efficiency of the legal framework in settling disputes and challenging regulations along with the lack of transparency of government policymaking have created concerns in

Political Factors

Several political factors also affect entrepreneurial activity. The government has introduced incentives to boost innovation through research and development by providing subsidies to firms that increase their research and development spending from year to year

However, the optimal environment for entrepreneurship is one that not only is free of political barriers, but one that also includes policies that explicitly promote and support entrepreneurship through focused funding and educational programs. This support is especially necessary for youth entrepreneurship to thrive because of the start-up and development difficulties that may stem from the lack of confidence during young age.

As Chigunta notes, "The tendency is to subsume youth into educational, health, culture and sports policies." (Chigunta, p. 16) In doing so, the government ignores the specific business needs of entrepreneurial youth, such as funding and access to business education. The government-funded Social Development Programme for Youth, part of the Sustainable Development Program in the impoverished GAP, is one program that addresses this concern. (Sustainable Development . . .)

While policymaking may be showing signs of improvement, the lack of efficiency and transparency of the legal system in mentioned earlier has resulted in a disapproving public opinion of politicians themselves

Entrepreneurial Aspiration in Nepal

In addition to entrepreneurial attitude and activity, the third framework condition of successful entrepreneurship noted in Figure 1 is entrepreneurial aspiration. As defined by the Global Entrepreneurship Monitor, entrepreneurial aspiration is "the effort of the entrepreneur to engage in introducing new products or new production processes, to open foreign markets, and to plan to increase the number of employees substantially." ("2008 Executive Report," p. 38) These aspirations correspond to two main targets: innovation and company growth

Innovation

An entrepreneur's aspiration for innovation is responsible for reviving industries with new concepts and is therefore critical for national economic growth. Nepal aspirations and expectations for innovation have been low in recent years.

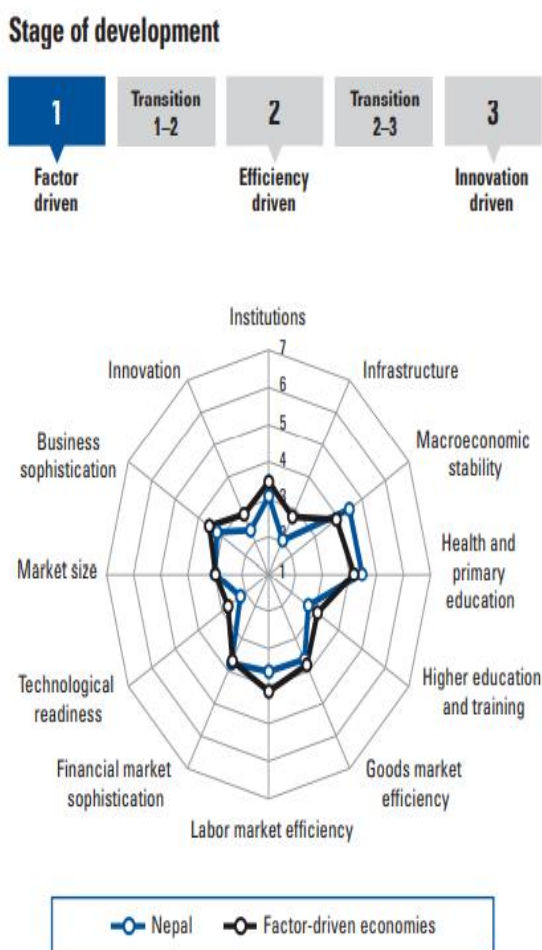
Company Growth

Unlike these low aspirations for innovation, Nepal entrepreneurs' aspirations and expectations for company growth are quite optimistic.

While few entrepreneurs are supported enough to establish themselves, many of those entrepreneurs who are able to do so in less-than-ideal circumstances are confident that they will achieve continued success. This confidence is a strong indicator that, if more support for entrepreneurial attitude and activity is forthcoming on a national level, economic development through entrepreneurship is distinctly possible.

Plans for Advancement

Figure 2 Nepal vs. Factor-Driven Economies in Terms of Competitiveness and Economic Development



Source: Author's figure based on research and statistics from "Global Competitiveness Report 2009–2010."

Figure 2 illustrates Nepal's current position with regard to the World Economic Forum's pillars of global

competitiveness and economic development shown on the 12 axes. Nepal's position is also compared with the averages of factor-driven economies to help illustrate what Nepal must focus on in order for its economy to reach the transition stage of economic development through entrepreneurship. The level of development in each pillar is indicated by the distance from the origin along that pillar's axis, with greater distances representing greater development.

As shown in Figure 2, higher education and training along with health and primary education, two key areas of influence on entrepreneurial attitude, represent two major gaps in Nepal's economic strength. Therefore, to help develop its entrepreneurial attitude, Nepal should first focus on upgrading its primary education system through greater funding for teachers, technology, and educational programs. In turn, these upgrades will enhance the basic skills that support youth entrepreneurship.

Next, the admissions process for higher education institutions should be reformed to acknowledge applicants' qualifications and interests and not just their Student Selection Exam scores. Furthermore, higher education administrators in Nepal must revise their programs to offer more interdisciplinary opportunities. Young entrepreneurs must have a broad range of technical and strategic skills, and the current structure of higher education, discussed earlier, serves only to narrow this set. Also, the spread of programs that promote attention to entrepreneurship at all levels of the educational system will help develop the entrepreneurial attitude in Nepal. ("2008 Executive Report")

With these changes, Nepal can better foster effective youth entrepreneurship education. Finally, the introduction of more public and private initiatives that help create awareness of entrepreneurial. Nepal's economy must also change, starting by addressing its remaining problems in the basic economic requirements for entrepreneurship. Among the shortcomings illustrated in Figure 2, the most pertinent to Nepal's growth is further development of its infrastructure. In doing so, Nepal should give special attention to its ports and electrical supply as these elements are critical for the viability of enterprises. Continued improvement of macroeconomic stability and developing Nepali financial markets to better provide grants, loans, and credit for young entrepreneurs will also aid the environment for youth entrepreneurship. With regard to the legal system, changes in the legal structure to make it easier to start up and operate a business are needed to heal the inefficiencies in both the goods and labor markets, as illustrated in Figure 2.

These changes include improving the ease of obtaining construction permits as discussed earlier. Furthermore, the

reform and enforcement of intellectual property rights legislation in order to promote new enterprise creation remain critical. The technological sector is sure to become even more fruitful for young entrepreneurship in Turkey, and this sector is particularly affected by intellectual property rights. As evident by the confident expectations for company growth in Turkey discussed earlier, encouraging entrepreneurial aspiration for such growth is not a primary concern. However, with regard to its aspirations for innovation as shown in Figure 2, Nepal has room for improvement. The aspirations for innovation must be encouraged by greater public and private funding and promotion directed towards youth entrepreneurial research and development. These efforts will help young entrepreneurs in Nepal develop new products and open new markets.

Conclusions

Youth unemployment is currently a concern for all regions. The long-term negative impact of youth unemployment has been well-documented, and youth frustrations have seen an increase in unrest in various areas across the globe. Policies that focus on youth and in particular that focus on improving work opportunities for young people are imperative. The recommendations indicated above are recommended policy areas by region where interventions could either: create a more enabling environment for young entrepreneurs, such as better equipping young people to see entrepreneurship as a viable career option or improving entrepreneurial education; or enable youth job creation, such as encouraging high growth expectations amongst young entrepreneurs.

It is important to remember that globally economies are constrained by levels of unemployment not seen since the great depression. The high levels of unemployment and debt as well as low levels of growth is affecting not only the developing world but, the impact is currently as noticeable, and in many cases, more noticeable in the developed world. Sluggish growth, high unemployment and persistently high debt levels have created a global perception of negativity. Within this environment, it is even more difficult for governments to work towards limiting the negative and possibly long-term effects of youth unemployment. The financial crisis has had an enormous impact on the global employment and business environment. The ability of young people to perceive good business opportunities in this climate is challenging, however governments, the media and educational institutions need to manage young people's expectations, without which, young people are less likely to see themselves as potential entrepreneurs. GEM clearly indicates that it is difficult to make direct

comparisons between countries with respect to entrepreneurial development as countries have a particular cultural, economic, political and social structure that influences the entrepreneurial climate in which businesses operate. The recommendations for the youth in the various regions are therefore fairly general as there is considerable diversity amongst the youth even within each region. The recommendations below attempt to highlight key areas where attention could improve various facets that hinder the likelihood of increased rates of entrepreneurial activity on the youth.

Recommendations

The following recommendations are provided to counter the major obstacles faced by youth entrepreneurs in Nepal.

Nepal government should simplify the banking procedures and loans should be sanctioned by focusing more on easy and widely accessible credit, collateral free loans and expansion capital.

More attention should be given to make easy access with regard to business funding for youth entrepreneurs, who have convincing business plan but short of start-up capital to materialize the ventures.

Nepalese government should focus on youth entrepreneurship development initiatives. These may include business advice, counseling, training, finance, mentoring and incubators.

The effective and efficient support structure of government to nurture business development should be. The country's government should amend the legal procedures by reducing the cost of business registration for young people, as well as speed of business registration process.

The curriculum must be revised and teachers trained in teaching entrepreneurial skills so children can realize their potential and become motivated in entrepreneurship early in life. Universities should include business incubators and mentors to promote aspiring as well as other entrepreneurs within the academic environment, and offer entrepreneurship courses in their curriculum.

The purposed government youth entrepreneurship support structure should coordinate with private entrepreneurship promoting organizations (for example FNCCI) in a campaign that teach and train all the school learners and university graduates with a idea that entrepreneurship as a best option for economic participation. Youth entrepreneurs

could also share their past experience with these school learners and university graduates with the aim of developing entrepreneurship mindsets.

Also, mass media and communication should be used to create awareness about issues and problems encountered in youth entrepreneurship development.

Private organizations should welcome learners who need exposures and experience in their businesses by providing services such as internships, in-service training, leadership development and other voluntary participation for skill enhancement and experience.

Learners in school and collage should be equipped with entrepreneurial and managerial skills and their attitude should be more influenced towards pursuing entrepreneurship.

It is highly advisable that those parents and grand- parents, who have been running business for years, should expose/place their children in their businesses. This will ensure that continuation of entrepreneurial culture will carry one to the next generation.

Interacting with more experienced entrepreneurs (could be both youths and adults) within in the same business industry and other entrepreneurship support structures for business know-how is strongly recommended.

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Packaging and Promotion of Consumer Products in Nepalese Organization

Dwarika Upreti, Lecturer,
Nepal Mega College, Tribhuvan University (TU),
dwarikaupreti2000@gmail.com

Abstract

The study aims to examine the packaging and promotion of consumer products in Nepalese organization. It has also identified how packing as a promotion tool affects consumers buying the products in Nepal. A sample of 205 consumers was randomly selected from markets in Kathmandu. Data analysis was done using mean, standard deviation, Pearson correlation, regression analysis-test. The result revealed that four components i.e. protection, source of information, brand and innovation have significant impact on promotion of consumers products. Modern organizational have been found to have given much attention on packaging and promotion for the improvement of sales regarding consumers buying behavior.

Key words: Promotion, Source of information, Innovation, Brand and Buyers attraction

Introduction

Knowles (1996) explains that packaging including graphics, structural shapes and materials is a major factor when it comes to choosing a product at the point of sale and states that many established UK brands have been achieving success over the last year because of distinctive structural packaging. Believes, therefore, that distinctive packaging is a key weapon in the marketing mix, by winning new customers and retaining existing ones, and that marketers should wake up to the potential of packaging design.

Mckenzie (1997) argues that package design has taken on a more important role as part of an integrated communications mix. He indicates that packaged goods firms now see design as a key contributor to building the brand and uses the example of bottle design for the drinks industry to show how packaging now takes a more important role in overall branding. Further notes that, despite this new strategic focus on design, the agencies are still victims of short-term commitment from clients.

He suggests that this ad hoc approach to buying design services means it still fails to get sufficient attention high up in client organizations.

Lutters, Diederick and Klooster (2008) explain that packaging is now generally regarded as an essential component of our modern life style and the way business is organized. Packaging is the enclosing of a physical object, typically a product that will be offered for sale. It is the process of preparing items of equipment for transportation and storage and which embraces preservation, identification and packaging of products. Packing is recognized as an integral part of modern marketing operation, which embraces all phases of activities involved in the transfer of goods and services from the manufacturer to the consumer. Packaging is an important part of the branding process as it plays a role in communicating the image and identity of a company. Packaging is the activity of designing and producing the container or wrapper for the product. It is an important and effective sales tool for encouraging the consumers for buying. It is powerful medium for sales promotion. It must perform all the basic function such as protection, ease of handling and storage, convenience in usage etc. and should not be deceptive and convey any deceptive message. It is the best method for attracting the consumers for buying the products.

Perreault & McCarthy (2002) state that packaging involves promoting, protecting and enhancing the product and thus, packaging can be important to both sellers and customers, It can make a product more convenient to use or store, prevent spoiling or damage, easier to identify and promotes the brand at the point of purchase and even in use. In case of product enhancement new packaging can make important difference in a new marketing strategy by meeting customers need better. Tetra pack invented an "aseptic" package that enables milk, fruit juice and other perishable liquid foods to be distributed without refrigeration or preservatives. As a communicative source it can tie the product to the rest of the marketing strategy. Packaging for

Energizer batteries features the pink bunny seen in attention-getting TV ads and reminds consumers that the batteries are durable. A good package sometimes gives a firm more promotion effect than it could get with advertising. Customers see the package in store when they are actually buying. Apart this, packaging may be used to lower the distribution costs, as better protective packaging is very important to manufacturers and wholesalers. They sometimes have to pay the cost of goods damaged in shipment. Retailer's need protective packaging too as it can reduce storing costs by cutting breakage, spoilage, theft, saving space, ease to handle and display. In recent times, numerous factors have made packaging an important marketing tool. Increased competition and clutter on retail store shelves means that package must now perform many promotional tasks - from attracting attention, to describing the product, to making the sale

Kotler (1999) defines packaging as "all the activities of designing and producing the container for a product." Packaging can be defined as the wrapping material around a consumer item that serves to contain, identify, describe, protect, display, promote, and otherwise make the product marketable and keep it clean. Packaging is the outer wrapping of a product. It is the intended purpose of the packaging to make a product readily sellable as well as to protect it against damage and prevent it from deterioration while storing. Furthermore the packaging is often the most relevant element of a trademark and conduces to advertising or communication.

The significance of packaging has come to be increasingly recognized in export as well as in marketing of a wide range of consumer goods and industrial products within the country. The volume of exports depends not only on the quantity of the production and prices, but also to a substantial extends on the standards of packaging adopted for the products. Goods damaged in transit or arriving at the destination in an unacceptable condition tarnishes the reputation of the manufacturer as well as the country as a whole, besides colossal wastage of scarce economic resources. Further, packaging has a crucial role to play in the fetching higher unit values for our consumer goods (like tea and cashew) through the substitution of the bulk packs by consumer packs. In the recent past packaging has been increasingly recognized as a significant factor in the nations export promotion effort. Effort should be there to understand the importance of packaging there by to

avoid the loss and damage cost incurred during transport and delivery. Keep in mind that a conscious effort on the part of marketing managers can increase the volume of sales and there by improve the reputation of the product and organization.

Literature Review

Dobson and Yadav (2012) examine that each household in the UK buys on average nearly 3 tons of products a year, including on average 200kg of packaging which takes products through an often long and complex supply chain to the consumer.¹²⁵ Packaging is needed to transport goods, keep food fresh, avoid product damage or theft, and present them to the consumer as intended. Much food packaging design is driven by consumer demands for convenience and freshness. Similarly, with other FMCGs, packaging functional role is to see the product through the supply chain to reach the consumer intact. Yet, as this study has shown, packaging has many other roles beyond protection, preservation and presentation. Notably, packaging offers brand owners the possibility to communicate with consumers through distinctive designs and on-pack communication in the form of logos, graphics, images, colors, messages, and product information. This represents an important medium for marketing communication and an important battleground for the intense rivalry evident in packaging.

Agariya (2012) explains that packaging is considered as an integral part of the 'Product' of marketing mix. Along with basic objectives (protection and preservation, containment, convenience and communication) packaging serves as a promotional tool. Packaging is an important part of the branding process as it plays a vital role in communicating the image and identity of an organization. The objective of this study is to find out role of packaging in brand communication and determining the elements/attributes of packaging for communicating the brand value to customers. To pursue these objectives the authors have developed a research framework for packaging which furcates the main objective into four sub-objectives namely dependence of packaging design upon the buyer attraction, communication to buyer, convenience in handling and using, salability of product and green aspect; relationships between liking for package and brand, country of origin, color connotation, symbol connotation and size; relationships between communication through the package and independent variables like information, shape, brand image and symbols/logos; relationship between

usability of package and ease of handling, disposability and protection. Data is collected through questionnaire along with the measurement of pulse rate of respondents with the help of pulse oxy-meter. Reliability test is carried out for questionnaire's consistency and then multiple regression analysis is done to formulate relationship between dependent variable and independent variables. This research reveals the importance of buyer attraction in package design and unimportance of environmental considerations. Similarly customers are more likely to give weightage to branded product than to the package and shape of package is the significant attribute of communication through product packaging

Sy-Changco, Pornpitakpan, Singh and Bonilla (2011) try to provide managerial insights into how consumer goods companies adopt the traditional mini-sized retail modalities and adjust their strategies to market sachets successfully in the Philippines. The study uses case studies through semi-structured in-depth interviews with marketing managers from major multinational and regional companies that have used sachets as part of their marketing strategy. The findings suggest that companies use sachet marketing to facilitate trials of new products and to deliver value across the market by making products more affordable and accessible. The extensive network of corner stores provides the distribution system needed to reach the farthest and remotest markets. To be successful, the brands must be popular and priced in a manner compatible with the coinage system in a market.

Dobson and Yadav (2012) examine that each household in the UK buys on average nearly 3 tons of products a year, including on average 200kg of packaging which takes products through an often long and complex supply chain to the consumer. One hundred and twenty five packaging is needed to transport goods, keep food fresh, avoid product damage or theft, and present them to the consumer as intended. Much food packaging design is driven by consumer demands for convenience and freshness. Similarly, with other FMCGs, packaging functional role is to see the product through the supply chain to reach the consumer intact. Yet, as this study has shown, packaging has many other roles beyond protection, preservation and presentation. Notably, packaging offers brand owners the possibility to communicate with consumers through distinctive designs and on-pack communication in the form of logos, graphics, images, colors, messages, and product information.

Stabiewska et al. (2008) aim to determine the impact of packaging information and the promotional role of dairy product packaging on the consumers decisions to purchase dairy products. The survey was carried out in the second half of 2005 and it involved a group of 500 clients of selected retail outlets within chains of supermarkets in Olsztyn. The survey was conducted based on a direct questionnaire comprising two parts. In the first part, the respondents were asked to evaluate the impact of packaging information and the promotional role of dairy product packaging on their decisions to buy dairy products. The second part featured questions on the respondents' sex, age, occupation, place of residence and monthly income per person in the household. The main findings of the study were: consumers focused mostly on the product's shelf-life / minimum durability period, the producer's trademark which is often identified with the specific brand as well as information on the product's ingredients and nutritive value. The consumers' propensity to make impulse purchases was confirmed by an observation that the buyers' attention is frequently drawn to packaging design which is often identified with product quality. The change of customer expectations, however, as customers become more demanding, means that the role of packaging becomes more important as it can be used to provide different service dimensions. Customers do not buy goods or services. They buy the benefits that goods and services provide, i.e., customers search for solutions that serve their own value-generating process

Azad and Hamdavi pour (2012) studied the importance of packaging in marketing products and services in many competitive environments. A good packaging can increase sales of products, reduces the level of inventory, which yields to higher profitability. In this paper, we study the relationship between a good packaging program and customer's confidence as well as customer's attraction on purchasing goods and services. The paper uses a questionnaire based on Likert scale and distributes among the target population of this survey and the information of packaging are divided into two groups of visibility and informative. The results indicate that a good and label with detailed and precise information on product could significantly impact customer's confidence while other visible information do not have much impact on customer's confidence.

Rundh (2009) studies how packaging and packaging design can contribute to competitive advantage for marketing a consumer product. Different influences from actors in the packaging design process are discussed in a conceptual model. A single case study based on five “corporate stories” about packaging development resulting development resulting in a new package are presented and analyzed. The study demonstrates influences on the design process of a package from external and internal factors. The outcome of the design process is, to a great extent, dependent on the interaction between the main actors in this process. The study argues for the importance of the interaction with customers for planning and conducting the design. The result of such a process is packages that can trigger customers make a purchase and/or reinforce the brand name for a repurchase of the product. The main implications for management are that packaging is a vital instrument in modern marketing activities for consumer goods, for example in the competitive food industry. The study highlights a few factors that trigger a customer to purchase a product by designing a suitable package for the product. Packaging design makes it possible to introduce new and better solutions for diverse marketing and logistic problems in a supply chain.

Methods

The findings of this research were based on the primary survey. The data has been collected by formulating a set of questionnaire which was distributed to the respondents. The findings are completely based on the data and facts provided by the sampled respondents.

The research studied about the packaging and promotion of consumer products in Nepal so that the responses of people can be quantified and measured easily. The study is based on various statistical tests and analyses. For this purpose, Statistical Package for Social Science (SPSS) software and Microsoft Excel were used to analyze and interpret the quantitative data. This software is commonly used by researchers and easily available in business settings. Descriptive statistics was used for the calculation of mean, median and standard deviation based on the respondent profile. Causal-comparative research design has been used to establish the empirical data on packaging and promotion of consumers’ products in Nepal.

Results

Table 1: Descriptive Statistics and Correlation Analysis

S. N	Attributes	Mean	S.D.	2	3	4	5	6
1	SOI	3.624	.853	1				
2	INO	3.614	.758	.243	1			
3	BRA	3.793	.793	.443	.580	1		
4	BUA	3.823	.898	.451	.154	.387	1	
5	PRM	3.853	.819	.543**	.439**	.635**	.549**	1

(**)= Significance at 0.001; (*) = significance at 0.05; SOI=Sources of information, INO= Innovation, BRA= Brand, BUA = Buyers’ attraction, and PRM = Promotion

Table 1 describes the descriptive frequency of variable taken under investigation in the research. The mean value of variables seem to be greater than 3 which reveals that consumers’ have positive relationship between packing and promotion of products. 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 0.154 to 0.635 which are strong to some extent. Table 1.1 describes about correlation matrix between variables under investigation. The result reveals that there is positive and significant relationship between information and promotion ($r = 0.543$, $p = 0.000$). Likewise, there is a positive and significant relationship between source of innovation ($r = 0.43$, $p = 0.000$). There is a positive and significant relationship between brand and ($r = 0.635$, $p = 0.000$). Finally, there is a positive and significant relationship between promotion and buyer’s attraction($r = 0.549$, $p = 0.000$). It shows that there is positive correlation between promotion and source of information, innovation, brand, and buyers’ attraction. Thus, the result reveals that there is a significant and positive relationship between promotion and packaging in Nepalese market.

Multiple Regression Analysis

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.107	.266		-.402	.688
	SOI	.238	.072	.206	3.304	.001**
	INO	.250	.066	.228	3.795	.000**
	BRA	.157	.061	.149	2.556	.011*
	BUA	.414	.078	.349	5.288	.000**

(**)= Significance at 0.001; (*) = significance at 0.05; SOI=Sources of information, INO= Innovation, BRA= Brand, BUA = Buyers' attraction, and PRM = Promotion

In the regression analysis, the beta coefficients are used to explain the relative importance of the independent variables in contribution to the variance in dependent variable. The result reveals that there is a significant impact of source of information on promotion ($b = 0.237$, $t = 3.304$, $p < 0.01$). The result reveals that there is no a significant impact of innovation on promotion ($b = 0.250$, $t = 3.795$, $p < 0.01$). Similarly, the result reveals that there is a significant impact of brand on promotion ($b = 0.157$, $t = 2.556$, $p < 0.05$). Likewise, the result reveals that there is a significant impact of buyers' attraction on promotion ($b = 0.414$, $t = 5.288$, $p < 0.01$). The result shows that source of information, innovation, brand and brand, Buyer's attraction have significant impact on promotion.

Conclusions

The regression analysis shows that there is significant impact of source of information, innovation, brands and buyer's attraction for Packaging on Promotion of Consumer Products. The result is similar with Hardenburg and Robert (1966) who explain that the product must be protected against being dropped, crushed, and the vibration it suffers during transport. Delicate products such as fruits need to be protected

by a rigid package such as a laminated container. It must also be protected against micro-organisms, chemicals, soil and insects. But other products have different packaging systems for the better promotion of goods.

The regression analysis shows that there is significant impact of Source of Information for Packaging on Promotion of Consumer Products. It is with the different line of Rundh (2005) who finds that packages and labels communicate how to use, transport, recycle, or dispose of the package or product. Some packages and labels are also used for track and trace purposes.

The regression analysis shows that there is significant impact of Innovation for Packaging on Promotion of Consumer Products. The result is the same line with Sonneveld (2000) who advocates that brand owners are constantly innovating to keep up with the changing demands and requirements of consumers, as well as to stand out in an increasingly competitive environment.

The regression analysis shows that there is a significant impact of Brand for Packaging on Promotion of Consumer Products. The result has been found to similar with the findings of Underwood, Robert and Klien (2002) who finds that product branding and packaging decisions are very important decisions as in the present age of globalization, a large number of brands of various products are available to the consumer to choose and select from.

The regression analysis shows that there is significant impact of Buyer's Attraction for Packaging on Promotion of Consumer Products. The result is similar with the findings of Cahyorini, Astri and Rusfian (2012) who states that package design involves more than just the look of the physical wrapper or outer container that a product comes in.

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Impact of Employee Participation in Decision-making and Organizational Performance: a Review of Literature and Implications for Future Research

Nilesh Kumar Tiwari*, Santosh Rangnekar**

*Research Scholar, Department of Management Studies (DoMS),
Indian Institute of Technology, Roorkee.

** Professor, Department of Management Studies (DoMS),
Indian Institute of Technology, Roorkee

Abstract

The literature review explores the relationship between the involvement of workers in decision-making and organizational efficiency. The study supports the widely held view that employee engagement activities make significant contributions to the success of organizations. Participative leadership has been widely accepted in organizational growth as a technique. This is because most individuals agree that participatory leadership not only allows employees to understand their roles, but also increases their own performance and organizational performance. Beyond this basic relationship, however, there appears to be minimal knowledge. Study on employee engagement in decision-making from a human resource leadership viewpoint seems to be a field of high priority. This study finds that the involvement of workers in decision-making has a profound influence on efficiency.

Keywords:

Employee development, Employee participation, Participative decision making (PDM), participative management, organizational performance,

A Systematic Review of Learning from Reflection literature: 2000-2020

Mohit Pahwa^a and Prof (Dr.) Santosh Rangnekar^b

^a*Department of Management Studies, IIT, Roorkee, India,
E-mail: m_pahwa@bm.iitr.ac.in*

^b*Department of Management Studies, IIT, Roorkee, India,
E-mail: santosh.rangnekar@ms.iitr.ac.in*

Abstract

Reflection plays a pivotal role in the learning process. In today's organizations, most training programs do not yield lasting improvements in the behaviour of employees. To help employees to process and implement new information and skills, training focuses more on memorizing facts or learning-by-doing with little encouragement. Consequently, employees quickly forget what they have given training and revert back to their past behavior patterns and fixed mindsets. Training Programs are missing an integral part of the learning process- the practice of reflection. The reflection cycle theory given by Gibbs provides a theoretical foundation for this paper. Past studies show that reflection is critical to helping us deepen and integrate learning and effectively apply it to our work and our lives. In this article, the authors have systematically explored the literature of learning from reflection to see the trends in the last 21 years. Top ABDC journals in business and management areas were identified in Scopus Database to execute the current study.

Keywords: Learning, Learning by doing, Reflection, Reflective Learning, Systematic Review

The Success of Smart Factory Adoption : Firm's Dynamic Capability Perspective

Gyeong-min KIM

Mi –Jeong NAM

College of Business Administration

Ewha Womans University

gkim@ewha.ac.kr

Abstract

This research explores how the success of smart factory adoption is influenced by firm's dynamic capability. This research describes in detail underlying processes by which organizational elements are manipulated or adjusted in coordinated manners to implement smart factory successfully. Although understanding of these processes is essential to many researchers and practitioners in the field, the information system research literature contains very few examples of this type. The research is conducted in the following sequence: first, the concept of dynamic capability is presented followed by research methodology; and then the analyses of case data are presented followed by discussions and future directions.

Keywords: Dynamic Capability, Smart Factory and Innovation Adoption

1. Introduction

Many nations have tried to diffuse smart factory to modernize their manufacturing industry. However, the diffusion rate is slower than expected. According to the report from government-supported smart factory initiative aiming at 20,000 smart factories until 2022, only 5000 smart factory have been reported as of 2017 [KISTEP, 2018]. More specifically, using the four levels of smart factory assessment model – Foundation, Middle1, Middle2 and Advanced [KSFF, 2017], 79% of the firms are in Foundation stage with MES and ERP implemented. None of the firms are in Advanced stage with enterprise-wide integration of the physical and virtual world. The percentages of Middle1 (having real time monitoring of factory operation) and Middle2 (having optimized factory operation) stages are 19.2 and 1.7 respectively.

In a fully connected smart factory corresponding to Advanced stage, networked machines (with sensors), manufacturing information systems (PLM, MES) and enterprise systems (ERP, SCM, CRM) are fully integrated to the data platform to stream data into a data lake. The collected data in the lake are analyzed by data analytics tools and AI; and shared across value chain to achieve adaptability and optimization in production according to market demand [Porter, 2015]. Thus, the ultimate goal of the smart factory is not to automate the manufacturing process but to gain new forms of competitive advantages through building manufacturing flexibility according to market demand.

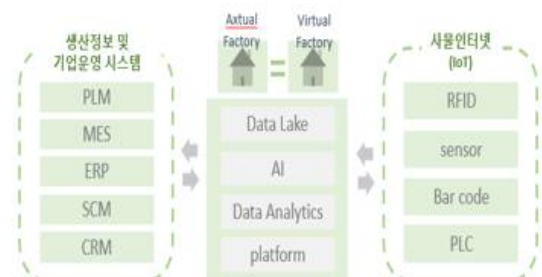


Figure 1. Platform based CPPS (Cyber Production Physical Systems)
[Readhat, 2021]

To implement the vision of a fully connected smart factory across enterprise and external customers and suppliers, top management support and organizational-level efforts are required. The fully connected smart factory which is also called as Industry 4.0, is more than improving manufacturing process using digital technologies. It is about reshaping business strategies, capabilities and business models to create new value in the market.

In the highly dynamic environment, firm's innovation adoption is influenced by the firm's dynamic capability [Lin et al., 2016; Lin et al, 2020] that is defined as an

ability to achieve new forms of competitive advantages to adapt to the changing business environment [Teece, 2018; Helfat and Martin, 2015; Teece et al. 2016; Sirmon et al., 2007; Eisenhardt and Martin, 2000; Teece et al., 1997]. Drawing upon Chandler's seminal work on Strategy and Structure [1962], dynamic capability focuses on the relationships between environments, strategy, capability and business performance. An organization with dynamic capability is characterized to be high performing organization with strategic agility, reconfigured capabilities to be adaptive to market changes.

This research explores how success of smart factory adoption is influenced by firm's dynamic capability. This research describes in detail underlying processes by which organizational elements are manipulated or adjusted in coordinated manners to implement smart factory. Although understanding of these processes is essential to many researchers and practitioners in the field, the information system research literature contains very few examples of this type.

In the next sections, the concept of dynamic capability is presented followed by research methodology. Then the analyses of case data are presented followed by discussions and future directions.

2. Dynamic Capability

Process of forming capabilities: Bundling, Acquiring, Developing, Divesting and Coordinating

An organization is considered to be a collection of resources and capabilities¹. The skills and knowledge of the human resource along with other resources such as business processes and IT are linked together to form an organizational capability. Capabilities can be formed through bundling of the existing resources; or reconfiguration of the current resource bundle. Reconfiguration include recruiting and training new resources; as well as divesting less valued resources [Uhlenbruck et al., 2003; Sanchez, 1995]. New capabilities are also developed by coordinating existing capabilities; or acquiring new capabilities [Hitt et al., 1998].

High Resource Fluidity: Organizational Forms, Process, Resource Allocation, HR Management

An organization with dynamic capability is characterized to have high resource fluidity [Doz, and

Kosonen, 2008]. High resource fluidity represents an organization's ability to reconfigure business process, resource allocation, human resource management and incentives in order to make organizational transformation faster and easier [Doz, and Kosonen, 2008]. Successful redeployment of appropriate resources and implementation of new processes and systems require competencies embedded in business routines (i.e. organizational processes) and organizational structure to conceive, choose, implement such change [Peppard and Ward, 2004; Rockart, 2004]. Competencies are defined as organizational characteristics to enable organization to conceive, choose, implement strategies [Barney 1997]. Competencies are determined by 1) firm's technical infrastructure and 2) organizational ability to deploy appropriate resources as well as implement and operate new processes and systems [Peppard and Ward, 2004].

Components of Dynamic Capability

A set of routines comprising the dynamic capability are: sensing changes in the environment by perceiving incoming information (perception), filtering and analyzing perceived information (processing), making decisions based on the analysis result (responding), and reconfiguring organizational resources (aligning) [Seo and La Paz, 2008]. Dynamic capability relies on analyzing existing knowledge and identifying new knowledge by which the firm adjusts and reconfigures their resources to address a dynamically changing environment [Wang and Ahmed, 2007; Eisenhardt and Martin, 2000; Sull, 1999a, 1999b]. In the work of Lin et al. [2016], the components of the dynamic capability in adoptive management innovation include sensing capability, absorptive capacity, integrative capability, and relational capability.

Learning Mechanisms

Dynamic capability is associated with learning through experience and knowledge articulation [Hung et al., 2009; Zollo and Winter, 2002]. Experiential knowledge obtained from experiences allows better recognition on needs for change. Knowledge articulation improves causal links between action-performance, which results in adaptive adjustments to the operating routines [Zollo and Winter, 2002; Gavettia and Levinthal, 2000].

3. Research Methods

After review of the literature on the success of smart factory

to highly complicated capabilities [Brown and Eisenhard, 1999; Siggelkow, 2002].

¹ Capability is defined as "an ability to perform a coordinated tasks utilizing organizational resources [Helfat and Peteraf, 2003:999]." The capabilities are ranged from less complicated

adoption, it was determined that no current theory is directly applicable to fulfill the objective. Therefore, “ground theory building” methodology is used for this study [Glaser et al., 1999; Yin, 1984; Eisenhardt, 1989]. This methodology builds theory grounded in the data inductively which is different from traditional deductive theory building where an existing theoretical framework is chosen, then data is collected to show how the theory can be applied to the phenomenon under study. After literature review on smart factory, interviews were arranged with people including business manager and smart factory/IS managers in Korea who had intensive experience of smart factory projects. Before conducting the interviews, a semi-structured interview protocol was prepared to guide the interviews. Since we focus on the dynamic capability of manufacturing firms with smart factory projects,

Group1	Group2	Group3	Group4
Phase	Challenges/Issues	Action Taken	Dynamic Capability Required
Pre-Implementation	Sensing changes in manufacturing environment (COV, JIN, VEL)	Applying for government fund	Sensing/Processing /Responding
	Not being able to resolve political issues inside company (VEL)	No action	Responding (make decision based on analysis)
	Not be able to select consulting firm with competency (VEL)	Selecting inappropriate consulting firm	Responding
	Having difficulty of setting expectations among stakeholders about the project (JIN, VEL)	No action (JIN)	Responding
Implementation	Having difficulty of reaching consensus between PM and Factory (JIN)	Planning, Education	Reconfiguration
	Employee not wanting to enter data into system (COV)	Education	Reconfiguration
	Employee not following the process in ERP system (COV)	Education	Reconfiguration
	Lack of PM with experience (VEL)	No action	Reconfiguration
	Lack of consultants with experience (VEL)	No action	Reconfiguration
	Directors in the factory not following PM (VEL)	No action	Reconfiguration
	Lack of agreement between headquarter and factory (VEL)	No action	Reconfiguration

we categorized components of dynamic capability into sensing, seizing, coordinating and reconfiguring. Based on this definition and focus, we limited interviewees to people who are in charge of smart factory projects. One of researchers involved in this research took the role of facilitator and moderated discussions based on the questions prepared.

Three interviews were conducted in Korea (Table 1). The descriptions of the companies are provided in Appendix. The location of the interviews was selected by the participants. Usually the interview was performed in a meeting room at the company of the participants. With some participants, follow-up

was conducted through e-mail to request clarifications and to offer participants the opportunity to provide feedback. Interviews were transcribed in Korean and translated into English.

Table 1. Overview of company and interviewees

Location	Group	Company	Position
Korea	1	COV	Strategy/IS/Smart Factory Manager
	2	JIN	Smart Factory Manager
	3	VEL	Business manager

Interviews were guided by a facilitator with open-ended questions for approximately one hour each. According to the interview protocol, the interviews were processed from explaining the research objectives and interview objectives to the interviewees. Even though the objective of the interview was to identify the dynamic capability of manufacturing firms with smart factory projects, we lead the interview to talk about challenges and issues raised at each phase (i.e. pre-implementation, implementation and post implementation phases) of a smart factory project life cycle for structuring the discussion. Then, we tried to investigate the firm's capability needed to manage those specific problems of a smart factory project. Therefore, the main topics discussed during the interview were as follows:

- Distinctive activities and issues raised at each phase of the smart factory project life cycle
- Action required to manage the activities and issues

Data analysis was performed using the constant comparative method of grounded theory [Glaser et al., 1999]. Furthermore, research findings were reviewed by interviewees to confirm. Data analysis is presented in the following section.

4. Data Analysis & Research Findings

Table 2. Coding Categories

Using constant comparative method, data analysis went through several overlapping phases of reading the collected data, discovering repeated ideas and concepts, coding the ideas and concepts and modifying the names of the codes to better represent conceptual ideas. The coding categories can be modified to generate concepts [Glaser et al., 1999; Holliday, 2007; Pettigrew, 1990]. These categories are basis for new theory.

First, the interviews were put in writing. Basic units of text [words, phrases or sentences] were extracted from the transcript; and categorized them into four codes -- 'phase', 'challenges/issues', 'actions taken' and 'dynamic capability (i.e. sensing/processing, responding and reconfiguration)' required to resolve the challenges (Table 2). The initial codes for dynamic capability required – sensing/processing, responding and reconfiguration were derived from a review of the literature.

In order to reach desirable between coder reliability, the following process was employed: coding individually, checking the agreement among codes, and a discussion on differences about the coding scheme to resolve the differences. Table 2 shows coding categories used in the analysis.

In the second column of table 2, the identified challenges of the smart factory projects are presented. This study found that firms overcome those challenges based on dynamic capabilities (shown in the last column of table 2).

JIN and COV do not seem to have problems in sensing and responding capabilities. Both companies are vendors of well-known global firms. Their relationships with the global firms allow them to sense changes occurring in current business environment. VEL lacked responding capability and made mistakes in selecting the consulting firm due to firm's internal political issues.

Due to political issues, the consulting firm with the lack of experience was selected. The lack of competency of both PM and consultant are major causes of the failure (Interview with VEL)

Two of three firms noted that the most challenging task is aligning Project Manager (PM) and manufacturing departments during the reconfiguration process.

Building consensus as well as division of responsibility between PM and manufacturing department were challenging. Therefore, it is recommended for the firms with plan for smart factory: to perform planning, design, and feasibility study with the highest priority. In this way, probable problems can be identified in advance to prevent extra costs and to complete the project on time [Extra cost and delay actually occurred]; and the consensus for the project objective is built between PM and manufacturing departments. (Interview with JIN)

Although top management in headquarter has strong commitment in smart factory project, a lack of PM's leadership hinders obtaining cooperation from manufacturing division in foreign subsidiary. This caused constant complain from both director and production manager of the foreign subsidiary on standardization issues. (Interview with VEL)

All three firms expressed the importance of change management including employee education for the process change.

Lack of understanding of the employees, engineers and management about new system and new

process made the test period longer. (Interview with JIN)

Resistance from the employees are the most difficult problem to deal with. At first, the employees did not want to enter data into system. The employees did not want to follow the process implemented in the ERP system. The education for the employees is done outside and inside of the company. (Interview with COV)

Educating the use MES and ERP systems to the employees in foreign subsidiary was difficult due to communication problems. (Interview with VEL)

This study shows that the success of smart factory project is dependent on firm's dynamic capability, especially reconfiguring capability. The firms having less difficulty of aligning human resources and processes according to changes required by smart factory projects had succeeded smart factory projects. This is congruent with the study of Zahra et al. [2006], which asserts that the firms with higher dynamic capability has less difficulty of reconfiguring resources and routines.

5. Discussions and Conclusions

The results of this study indicate that the firms with higher dynamic capability made the process of organizational changes such as smart factory easier. Through alignment [i.e. resource reconfiguration] such as employee education, the firms with higher dynamic capability are more likely to implement the smart factory successfully. This supports the assertion of Doz, and Kosonen [2008]: high resource fluidity representing business process, resource allocation, human resource management and incentives that make business transformation faster and easier. As indicated in the interview results, the resistance from employees and management could be managed not only by education but also by goal sharing. The alignment such as goal sharing and the consensus building requires the executive level commitment, which indicates importance of the governance of IT for smart factory success.

What this means that smart factory is enterprise-wide innovation, requiring organizational level efforts and governance attention. Difficiency of these efforts hinders adoption and progress of the smart factory. When firms's effort and government policy are short sighted and neglect complexity of enterprise-wide innovation, smart factory diffusion is slower. Smart factory is not a

isolated project within a factory floor but a project being dependent on dynamic capability of a firm.

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Appendix: Company Description

Cov (Smart factory level 3)

Cov is a manufacturing/research service company for automotive parts. It's excellency in standardization is recognized by the Ministry of SMEs and Startups. Smart Factory was initiated to meet the quality requirement by foreign buyers. At that time, Cov also needed to reduce unit cost and improve productivity. They completed 1st phase (MES, ERP and PLM) and 2nd phase of the smart factory (SPC-Statistical Process Control, QMS – quality management system and CMS-Cyber Manufacturing). During 2020, they plan to implement MIS which is 3rd phase.

According to the interviewees who is a manager of planning/ smart factory/ IT, MES² which improves visibility from raw material to products, is the most important for the smart factory initiative. Only after data gathering and analyses over the manufacturing process, prediction and prevention are possible.

After smart factory, Cov cut employees by half and received order from BMW [2020], Hyundai [2019], and Volkswagen. [2014].

Jin (Smart factory level 4)

Founded in 1978, Jin is a leading manufacturer in car industry and has been key supplier to car makers in world-wide. Jin is also the first vendor of Hyundai Automobile. It adopted smart factory via government initiative called Project to Build Demonstration Factories with support from the Ministry of SMEs and Startups in 2017. The project intended to build a role model of the smart factory. By executing the project, Jin has achieved quality and productivity improvement through factory automation. Smart factory adoption replaces dangerous task by robots, thus results in reducing industrial hazard and relocating employees to other tasks. Smart factory also allows the firm to monitor of before process and in process products; to identify malfunction in temperature and time; and thus to ensure quality. The results are remarkable with 20.5% increase in productivity and 50% increase in defect rate [Lee, 2019].

Velo

Clothing manufacturer for motorcycle. Velo implemented MES and ERP for inventory, HR and facility management as well as for manufacturing efficiency. Headquarter is in Seoul. Factory is in China and Vietnam. They overrun budget by 40%. They planned to complete the project within 10 months, from May, 2018 to March, 2019. They could not finish the project and finally suspend the project in Feb, 2020.

² MES records and tracks the process of transformation of raw material to finished products. MES can identify and track error occurred during the process. Using the MES data firms can

analyze the cause of the error and improve the quality of the process and products. MES permits manufacturing optimization to maximize quality and productivity.

Analysis of Indonesia's Digital Industry and the Case of Gojek

Namjae Cho^a, and Firti January Anindya^b

^a Professor, School of Business, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +8210-8704-1058, E-mail: njcho@hanyang.ac.kr

^b Master Research Scholar, School of Business, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +8210-4431-9306 E-mail: januaryanindyafitri@gmail.com

ABSTRACT

Indonesia's industrial application of digital technology is growing fast, especially in the application of mobile technology. About 1,700 digital startups are sprouting. PT Aplikasi Karya Anak Bangsa is one of those digital startups founded in 2010. This company is widely known, especially in Southeast Asia, for its products and services called 'Gojek' which was launched initially in 2015. Gojek began as a ride-hailing mobile-based application that later evolved into a Super App providing more than 20 different services in one single mobile application. After becoming Indonesian first unicorn company in 2016, Gojek now has become the first decacorn company in Indonesia, worth more than USD 10 billion since 2019. This paper aims to analyze the technology industry in Indonesia and analyzes Gojek's background and history, its competitive status, and critical success factors. As a conclusion, we provide some advices for future development of Gojek in Indonesia and other countries in Southeast Asia's market. The advices include rebranding its overseas presence and the use of consistent brand identity across countries.

Key word: mobile application, ride-hailing service app, Indonesia, e-commerce, case analysis

Indonesia is expected to become Southeast Asia's largest digital economy, with 130 million active social media users and world's 3rd largest youth population. As following graph shows, Indonesia's digital world, ranging from the increased use of big data and mobile internet to the growth of digital financial services (e-money) and e-commerce, has grown significantly in recent years.¹ Thanks to the growing young population of Indonesia, the adaption of these emerging technologies is very rapid and it created a large enough customer base for Indonesia's digital economy. In line with this rapid digitalization in economy, as of 2018, Indonesia has more than 1,700 digital startups, the largest in Southeast Asia, engaging in various sectors, ranging from e-commerce, marketplace to online education.²

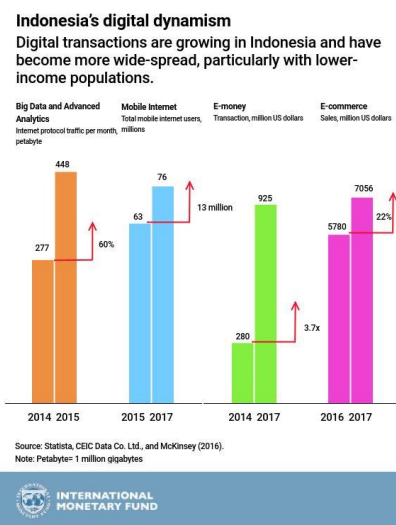


Image 1. IMF: Indonesia's Digital Dynamism

1. Background of the Technology Industry in Indonesia

According to a data published by the International Monetary Fund in 2018,

By 2019, Indonesia has produced 4 unicorn companies: Tokopedia, an Indonesian technology startup company specializing in e-commerce; Traveloka, a leading Southeast Asia online platform that provides a wide range of travel; Bukalapak, an online marketplace where local users can buy from and sell to each other; and OVO, digital platform for simple payment and financial services.³ Furthermore, early that year, Gojek, an on-demand multi-service platform and digital payment technology startup was announced as the first decacorn company from Indonesia (Alpha JWC Ventures, 2020). The rapid development in the information technology sector, combined with drivers like mass consumption of products, urbanization, a surge in mobile usage, and a tech-hungry young population, makes a positive impact on the economic growth in Indonesia.⁴ Current projections show that Indonesia's economy could gain \$2.8 trillion by 2040 through technology adoption.⁵

2. Michael Porter's Diamond Model of National Advantage

2.1 Firm Strategy, Structure, and Rivalry

2.1.1 Services expansion and rebranding

In 2010, Gojek's began its journey as a motorcycle ride-hailing call center in Indonesia. In 2015, the homegrown app was launched with only three services: Go-Ride (motorcycle ride-hailing), Go-Send (package delivery), and Go-Mart (grocery delivery).⁶ In a short time, Gojek came up with its expansion strategy. They expanded their services to wider sectors, including but not limited to food and finance sector. As the result, in few years, Gojek's app has successfully evolved into a Super App, a multi-services platform providing more than 20 services today.⁷

As Gojek brand grows and adapts to its market, in July 2019, Gojek decided to rebrand itself. Gojek changed their logo from 'motorcycle' – which describes the motorcycle ride-hailing service they are providing – into a new logo named 'Solv' that is unique enough to stand out from the competition, memorable enough for anyone to redraw from memory, and still flexible

enough to work at any size, anywhere.⁸ “Just like Gojek, Solv evoked different emotions in everyone who saw it, a logo that lets you decide the meaning: Some saw a power button in it, identifying with Gojek's mission — to empower people to live a hassle free life. Some saw a search icon in it — Search for anything with Gojek. Some saw a map pin — we're there for you no matter where you are. For some, it was a top down view of a Gojek driver — a tribute to our heroes who help get things done,” (Raja, 2019). With its new logo, Gojek promises to solve everyday problems and affect positive social impact with continuous technological innovations just as what their new logo means.



Image 2. Gojek Previous (left) and New Logo (right)

2.1.2 Intense competition with similar service provider: Grab & Uber

Gojek started its business in Indonesia, where the Indonesian market has been entered by Grab from Singapore and Uber from the US, online transportation companies with the same service.⁹ Grab and Uber officially entered Indonesian market in 2014, while Gojek only joined the business in 2015. Similar with services available in their home country, Grab and Uber started their business in Indonesia by providing a car sharing service or online taxi service, called Grab-car and UberX, UberPool, or UberBlack. Then in 2015, Grab and Uber started their motorcycle ride-hailing service, called Grab-ride and Uber-motor. However, Uber couldn't survive for a long time in Southeast Asia's market. In 2018, Uber has announced that it has sold its Southeast Asia-based business to rival Grab and in exchange Uber got a 27.5 percent stake in Singapore-based Grab while Uber CEO Dara Khosrowshahi joined Grab's board.¹⁰

The acquisition of Uber by Grab, puts Grab in a total control of the ride-sharing market in Southeast Asia. Surely, the merger between Uber and Grab in Southeast Asia market pressured Go-Jek, that has not yet expanded to Southeast

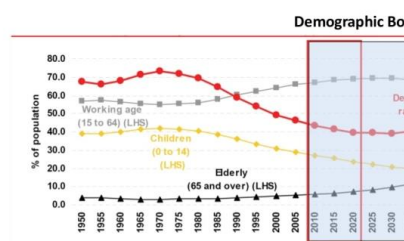
Asia back then. Until today, Grab is the main competitor of Gojek in Southeast Asia market and its revenue in Indonesia more than doubled on the year in 2018 since its merger with Uber.¹¹ Thanks to this fierce competition, Gojek able to innovate and grow its business even bigger. Only a year after its official launch in Indonesian market in 2015, Gojek became the first Indonesian Unicorn company. Later in 2019, Gojek became the first Indonesian Decacorn company, worth over USD 10 billion today and second in Southeast Asia following Grab, which is valued at USD 14 billion.¹²

2.2 Factor Conditions

2.2.1 Indonesia demographic bonus

Demographic bonus is a situation when the number of productive populations, aged 15-64 years, in a region larger than the number of non-productive people, aged 0-14 years and above 65 years. According to a data from the Indonesian Statistic Agency, Indonesia will get a demographic bonus in 2035, with more than 65 percent of working age populations.¹³ There are many things that should be prepared by Indonesian government. Specifically, the government should enhance the education quality, the readiness of its huge working age population to join the job market, and the employment opportunities in order to handle this demographic bonus challenge. This is where Gojek plays its role to help the government in handling this challenge by providing more job opportunities with its technology and reduce unemployment.

Demographic Bonus: A Challenge for Indonesia



Page • 11

Source: Ministry of Coord

Image 3. Indonesia Demographic Bonus Projection

2.2.2 Huge number of motorcycles in use in Indonesia

Based on data from the Central Statistics Agency (BPS), as of 2018, the number of motorcycles in Indonesia reached 137.7 million units.¹⁴ Meanwhile, AISI (Association of Indonesia Motorcycle Industry) data records that in 2019 there were 6.05 million units of motorcycles sold to consumers.¹⁵ This means that in total, there are currently approximately 143.75 million motorbikes circulating in Indonesia by 2019. This is an advantage for Gojek which mainly operates its businesses on motorcycle-based. So, Gojek didn't have to provide their driver partners with a motorcycle as most of them already have their own motorcycles. However, by partnerships with leasing companies, Gojek is providing an affordable new motorcycle lease as a form of welfare program for their driver partners.

2.3 Demand Conditions

2.3.1 Indonesia's huge market

Approximately, Indonesia has 280 million population, 150 million internet users with average 8.6 hours per day spent online, and 58 percent unbanked population.¹⁶ Google, Temasek, and Bain & Company wrote a report titled 'Swipe up and to the right: Southeast Asia's \$100 billion internet economy', Describes Indonesia as the 'king' in the ride-hailing market or application-based transport services, with the industry hitting USD 6 billion in 2019. According to the report, the ride-hailing market in Indonesia will hit USD 18 billion by 2025 and Indonesia will be the largest contributor to the ride-hailing industry until 2025, when the overall value of the ride-hailing market in ASEAN will be USD 40 billion.¹⁷

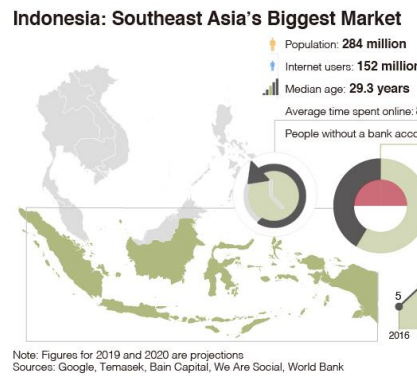


Image 4. Indonesia Market Size

2.3.2 Underdeveloped public transportation system

The infrastructure development of the road network in Indonesia has not been improving steadily for many years, and some cities have insufficient maintenance of the road network. In certain ways, the country's public transport infrastructure is also under-standard with no significant development for years.¹⁸ Most of population who lived in the metropolitan area – Jakarta and surrounding areas, or Jabodetabek – use public transportation such as bus and train to commute daily. However, not all area is covered by the public transportation. Despite its cheap fare, many areas are not accessible by public transportation. That is one of the reasons why most people prefer to ride their own vehicle, car or motorcycle, rather than using the public transportation, to get a better access everywhere. The presence of an online motorcycle ride-hailing service is not only helping consumers with access to high mobility, but also with efficiency in traveling time.

2.4 Related and supporting industries

2.4.1 Motorcycle industry

The key reasons why Indonesian people chose motorcycles as their chosen form of transport are the ease of ownership and economical operation of the mode. Motorcycles are affordable and easy to buy through a simple and fast credit or leasing process. On top of that, it is not so difficult to operate it and the maintenance expense for motorcycles are also reasonable for

many people from various income groups.¹⁹ Since Gojek, Grab, and Uber penetrated online motorcycles ride-hailing market in Indonesia, we can see stable sales of motorcycles in Indonesia. Head of Association of Indonesia Motorcycle Industry said that the growth of the motorcycle industry is very important in providing employment, where this sector is able to absorb a workforce of up to two million people. In order to produce motorbikes that are environmentally friendly, energy efficient, and safe and comfortable to ride that fit the needs of the global market, the Indonesian Ministry of Industry encourages the domestic motorcycle industry to continue to seek new breakthroughs in utilizing efficient engine technology and low exhaust emissions, as well as emphasizing the importance of optimizing domestic research and development (R&D) activities.²⁰

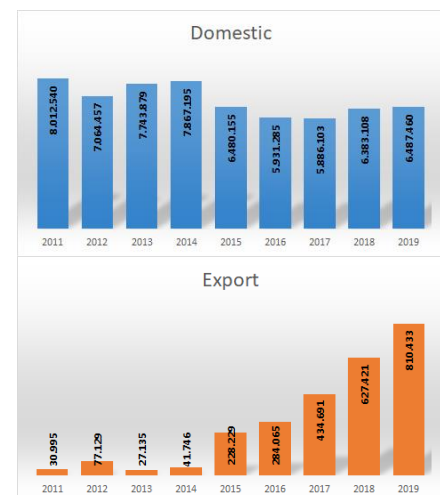


Image 5. Indonesia Motorcycles Distribution 2011-2019: Domestic & Export
Association of Indonesia Motorcycle Industry

2.4.2 MSMEs

MSMEs or Micro, small and medium-sized enterprises are the economic drivers of Indonesia. Wholesale and retail trade, manufacturing, accommodation, and food service are dominating sectors of the MSMEs in Indonesia.²¹ To facilitate MSMEs to compete in broader markets, in November 2017, a program called “MSMEs Go Online” was introduced by the Ministry of Cooperatives and SME in collaboration with the Ministry of Communications and Informatics. By 2020, the government aims to transform 8

million MSMEs into digital-savvy MSMEs by encouraging them in joining online market platforms through this initiative.²² McKinsey & Company, a multinational management consultancy forecasts that by 2030, the MSMEs of Indonesia will be able to contribute up to USD 140 billion to Indonesia's gross domestic product (GDP) by adopting digital technology.²³

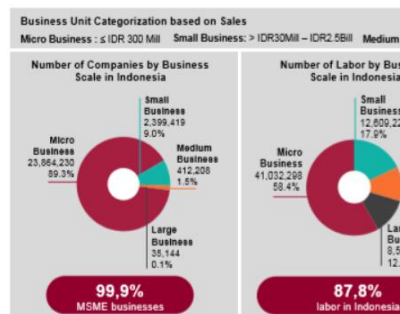


Image 6. Economic Census 2016 for MSMEs to Large Enterprises
 Central Bureau of Statistics in 2017

2.5 Government

2.5.1 Indonesian government support

“Attempts to regulate and even outlaw app-based transport services have presented a serious challenge to Uber and Grab, and to a lesser extent Go-Jek. The debate over regulation has focused on the failure of app-based transport services to comply with conditions associated with public transport licensing,” (Ford & Honan, 2017). Transportation fare for public transportation is determined by the service in accordance with the price set by the Ministry of Transportation. However, this law does not cover mobile-based taxis, which led to unfair competition between conventional and online-based taxis back then in 2014-2015 when Grab, Uber, and Gojek penetrated Indonesian market. The existing or conventional transport providers respond to government regulation that online application-based transport companies’ ability to avoid the normal costs of doing business is an unfair advantage (Ford & Honan, 2017). Several other factors such as Grab and Uber not having any local offices and did not pay any Indonesian taxes despite its

status as foreign companies were also problems that sparked the controversies. Controversies emerged and protests were held several times by conventional car taxi and motorbikes taxi against the online application-based ones from 2014 to 2015.

“In 2015, the Ministry of transportation issued memorandum UM.3012/1/21/Phb/2015 that prohibits the operation of online-based ride-hailing taxis. However, in 2016, Indonesian President issued a pronouncement to issue another policy through Transportation Ministerial Decree No. 32 of 2016 to facilitate online-based taxis. Thus, on October 1, 2016, online-based taxis are thereby legalized (only for 4-wheeled vehicles, not motorcycles),” (Melawani et al, 2020). Finally, in March 2019, Indonesia's Transportation Ministry finally released a regulation on the use of online motorcycle taxis. “The newly released regulation has provisions on standard fares, customer safety and the nature of partnership between driver-partners and online ride-hailing companies. It also stipulates that standard motorcycle taxi fares should consider operational costs, including the cost of running ride-hailing apps,” (Yasmin, 2019).

2.6 Chance

2.6.1 Ongoing Indonesia’s rapid infrastructure development

“Based on Presidential Regulation no. 58 of 2017 on amendment to Presidential Regulation no. 3 of 2016 on Acceleration of National Strategic Projects Implementation, it was decided the amount of National Strategic Projects (PSN) is 245 PSN plus 2 programs, electricity and airplane industry,” (Committee for Acceleration of Priority Infrastructure Delivery (KPPIP), n.d.). Among 245 projects, following are few projects that could be a chance for bigger growth of ride-hailing industry by integrating their services to the existing and newly developed infrastructures in the future:

a. Toll Road Infrastructure Development

- b. National Road Infrastructure Development/National Strategic Non-Toll
- c. Infrastructure Project for Inter-City Railway
- d. Infrastructure Project for Mass Rapid Transit Development
- e. Airport Revitalization Project
- f. Construction Projects of New Airport
- g. Other Strategic Airport Projects



Image 7. Indonesia's National Strategic Projects

3. Background and History of Gojek

3.1 History and Products

What is Gojek? Gojek is Southeast Asia's leading on-demand, multi-service tech platform providing access to a wide range of services including transport, payments, food delivery, logistics, and many more.¹

Gojek name comes from *Ojek*, the term Indonesian people use for calling motorbike taxis that are easily found in many areas in Indonesia. Gojek company, PT. Aplikasi Karya Anak Bangsa, was founded as a motorcycle ride-hailing call center in 2010 by Nadiem Makarim (36 years-old), current Minister of Education and Culture of Indonesia. Nadiem Makarim received his BA in International Relations at Brown University in the United States and earned his MBA (Master of Business Administration) from Harvard Business School. Before he builds Gojek, he was a Management Consultant at McKinsey & Company for 3 years. Also, he was also a Co-founder and Managing Editor at Zalora Indonesia, a fashion e-commerce company. Then, he worked at Kartuku, Indonesian fintech startup, as a Chief Innovation Officer.²⁴

“During these years, Gojek only has a small office with 6 members, 10 telephones, 4 call center agents, and 20 drivers,” (Benjamin et al, 2020). The motorcycle ride-hailing service was provided through a conservative way back then. First, the customer who needs a ride should call Gojek's call center by phone, then Gojek's staff will look through their driver's excel sheet data and contact the driver nearby customer's location. Realizing the ineffective and wasting time conventional way of connecting their drivers and customers, Gojek began the development of its application platform in 2011 and officially launched the app in 2015 with only three main services: Go-Ride, Go-Send, and Go-mart. Gojek successfully made a transition from a phone-based service to the online-based service. Within just a year, the app had been installed 10 million times and driver numbers had reportedly risen to 200,000 (Ford and Honnan, 2017). A year after its initial launch, Gojek had developed few other services, including but not limited to Go-Car, Go-Food, Go-Clean, Go-Tix, and GoPay. Now, through just one platform, Gojek's users can access over 20 services ranging from transportation and logistics; food, medicine, grocery delivery; cleaning and repair services; news and entertainments; business; to digital payment and financial services.

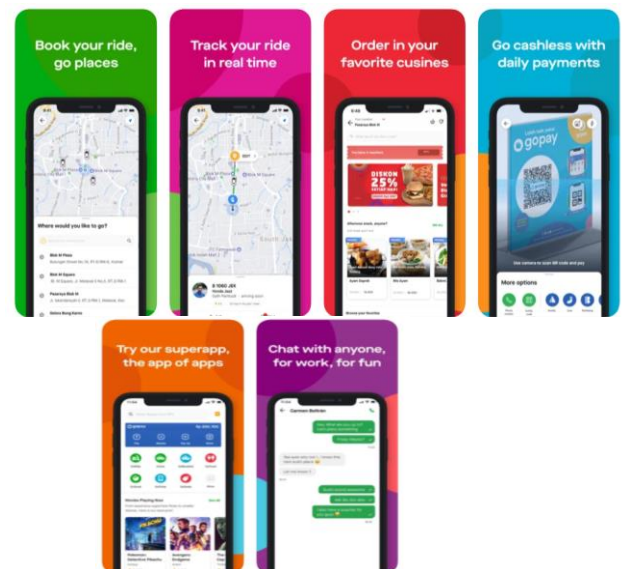


Image 8. Gojek's App Screenshots on Apple App Store

3.2 Financing & Business Strategy

“On August 4, 2016, the Gojek Company officially became a Unicorn Company

after gaining funding of US \$ 550 million. This funding is obtained from investors such as DST Global, NSI Ventures, and Sequoia Capital, led by KKR & Co. and Warburg Pincus and other January - February 202 existing investors and Formation Groups, Northstar Group, and Rakuten, Capital Group, Farallon Capital Management. In 2017, Gojek announced its acquisition with three technology financial companies, Mapan, Kartuku and Midtrans, which aimed to support GoPay expansion. On May 4, 2017, Gojek received additional funding from Tencent Holding and JDcom with funding worth \$ 1.2 billion (Zaenudin, 2017)” (Benjamin, 2020). In June 2019, Gojek announced that Facebook and PayPal have joined Google, Tencent and others as investors in its current fundraise. This new investment will support Gojek’s mission to boost Southeast Asia’s digital economy, with a focus on supporting payments and financial services in the region.²⁵ Also, a month later, in July 2019, Gojek announced a joint investment from Mitsubishi Motors Corporation, Mitsubishi Corporation, and investment from Mitsubishi UFJ Lease & Finance, as part of its Series F funding round.²⁶ In 2020, Gojek has received a \$150 million investment from Indonesia’s Telkomsel.²⁷

According to a research done by Benjamin et al in 2020, “The Gojek company implemented the Ansoff Matrix business strategy, using the Ansoff Matrix strategy to provide an opportunity for Gojek to expand into the Southeast Asia region. Ansoff Matrix is an important part of strategic marketing planning and is used to see opportunities with the development of new products and services. Based on the Ansoff Matrix theories, Gojek has applied a market penetration strategy that is an existing market and products that already exist in the market. Gojek founded its company in Indonesia, where the Indonesian market has been entered by Grab and Uber which is an online transportation company with the same service.”. Furthermore, Gojek partners with motorcycle drivers and

merchants using a profit-sharing system with the provisions of 20:80, which means 20% of the revenue for the Gojek and 80% for Gojek’s driver-partners or merchant-partners.

3.3 Social Economy Impact

Today, Gojek has successfully transformed into SUPER-APP began as a ride-hailing service, providing more than 20 services, two million drivers, 400,000 merchants, 1.5 million agents, and 600,000 talent or service providers. “Research by the Demographic Institute of the Faculty of Economics & Business, University of Indonesia, in 2018, involving 6,732 respondents, conducted across 9 cities in Indonesia stated that Gojek is delivering economic impact for Indonesia by contributed around IDR 44.2 trillion (USD 3 billion) to the Indonesian economy as of end 2018. Gojek also gave positive impact that helps the members in Gojek’s ecosystem, such as driver-partners and merchant. After joining Gojek, the quality of life of Gojek’s driver-partners’ have increased and 100% of them believe that they can provide better well-being for their family. Most also claim they can now send their children to school, especially with the fair incentives and policies that Gojek provides. Furthermore, Gojek’s ecosystem supports the growth of MSMEs in Indonesia. 93% of MSME partners experience an increase in transaction volume and 55% of them experience an increase in earnings,” (Gojek, 2020).

3.4 Achievements

In 2016, Gojek became the first Indonesian Unicorn company. In 2017, Gojek was ranked 17th in Fortune’s 50 Companies that Changed the World, as the only company from Southeast Asia. In 2018, Gojek announced its international expansion into four new markets, Vietnam, Thailand, Singapore, and Philippines, with USD 500 million investment.²⁸ In 2019, Gojek became the first Indonesian Decacorn company in 2019, valued more than USD 10 billion. Also, in the same year, Gojek was included again in Fortune’s 50

Companies that Changed the World, ranked 11th.

4. Competitive Status of Gojek

4.1 Strengths

2.1.1 Mobile-based application: Easy-access and transparent fare or service fee check before book the service

Gojek is operating their services through mobile-based application. Gojek mainly has three different apps, the main app for its customers called Gojek, the other one for their driver-partners called GoPartner, and the other one for their merchant-partners called GoBiz. Gojek's mobile applications are very easy to use and compatible on both android and iOS devices. On Google Play Store, we can see that android version of Gojek main app has already been downloaded for more than 50 million times. However, according to Gojek's Tech website, Gojek claimed that their app already has been downloaded more than 125 million times in Indonesia, almost half of Indonesian population.²⁹ Gojek's mobile applications provide a clear user interface (UI), as well as interactive user experience (UX). Through the app, customers can easily book the services they need and see the fare or the service fee transparently. Not only providing an easy booking, Gojek also providing an easy payment method, with cash or GoPay.

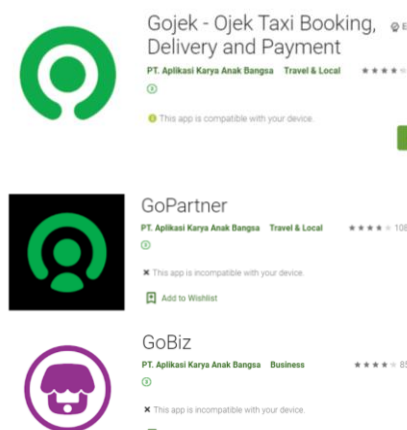


Image 9. Gojek Applications on Google Play Store

2.1.2 Innovative and diverse services, focusing on: transportation and logistics-

based, food-delivery and shopping-based, entertainment-based, and payment-based

Gojek never stop innovating their service since their first launch in 2015. Gojek evolves from a motorcycle-based service offered only three services, Go-Ride, Go-Send, and Go-Mart into a super app offering more than 20 services that are solving everyday challenges with one mobile application, named Gojek. In more details, Newest Gojek's services as in 2020 could be distinguished into four different sectors transportation and logistics-based, food-delivery and shopping-based, entertainment-based, and payment-based.³⁰

In transportation and logistics-based we can find Go-Ride, Go-Car, Go-BlueBird (partnership with existing local taxi company), Go-Box, and Go-Send. Then, in food delivery and shopping-based, we can find Go-Food, Go-Mart, Go-Shop, and Go-Med. In both transportation and logistics-based, and food-delivery and shopping-based services that Gojek is providing, Customer can book services they need and the driver-partners will come to pick the customers up or get something delivered to the customers. In entertainment-based, we can find Go-Tix, to book any movie or concert tickets; Go-Play, an on-demand video content platform; and, Go-News. While, in payment-based, we can find GoPay, Gojek's e-wallet for all users; Go-Pulsa, to buy internet data package and phone call credits; Go-Nearby, where customers can find any promotions available nearby their locations; Go-Investasi, to make some investments, buy stocks, and more; Go-Bills, to pay electricity or phone bills, etc.; Go-Give, to give donations; Go-Sure, Gojek's health and life insurance services in partnerships with existing insurance companies.

Before these current updates, Gojek used to have few services in daily needs-based where we can find Go-Clean, Go-Fix, Go-Laundry, Go-Glam, Go-Massage, Go-Daily, Go-Auto, and Go-Pertamina. Unlike the transportation-based ones, Gojek's partners will go to your house to do the services booked by the customers.

Gojek also had Go-Points, which are the loyalty program for both Gojek's customers and partners, and Go-Deals, to find promotions ongoing on various e-commerce or online shop platforms. Unfortunately, Gojek shutdown these services in the end of 2019 (The Jakarta Post, 2019).

2.1.3 High brand recognition: Made in Indonesia

Compared to its competitor, Grab, Gojek has higher brand recognition because it is made in Indonesia by Indonesian young people, just as what their company name literally means (PT. Aplikasi Karya Anak Bangsa). On top of that, Gojek's previous motorcycle logo described their services well, however their new logo 'Solv' describes it even much better and made it easily recognized in the field. According to a journal written by Wahid and Puspita (2017) regarding Gojek's brand awareness, they concluded that Gojek did several efforts to improve their brand awareness including but not limited to publications, events, news, community involvements, inform or image, lobbying and negotiations, and social responsibility.³¹

As the result, "Muhammad Zudhy Irawan, a lecturer at Gadjah Mada University's (UGM) Engineering School as well as a researcher at the UGM Transportation and Logistics Study Center, shows in a research dated of February 2020 that most users of public transportation typically use two ride-hailing applications at the same time. However, Gojek has two-and-a-half times as many loyal users as there are users for other ride-hailing apps. This is equivalent to a market share of 45 percent. The success relies on the high availability of Gojek's drivers, the excellent service they give users, as well as the user-friendly application, along with its ample digital safety and security," (Asean Travel, 2020). Also, "a survey by market researcher ecommerceIQ in February 2018 found that 56% of Indonesians said they used Gojek the most, followed by 33% for Grab and 8% for Uber," (Nikkei Asia, 2019)

4.2 Weaknesses

2.2.1 Uneven adaption of smartphone technology

According to a research conducted by the Demographic Institute of the Faculty of Economics & Business, University of Indonesia, in 2018, most of Gojek's driver-partners age are ranging from 20s to 50s, 77 percent of driver-partners are 20-39 years old, and 85 percent of them are high school graduates.³² Not all driver-partners are fully adapted to the newest smartphone technology. Most of them are still not very familiar with the rapid development of technology nowadays. This is becoming one of Gojek's challenge. What Gojek need to do to overcome this uneven adaption of smartphone technology of their driver-partners is to make an application that is easy to access by all range of ages and educational backgrounds of their driver-partners. This challenge might be specifically addressed to Gojek's UI/UX design team. Gojek's design team must be able to present all GO-JEK's features or functions as simply as possible so that it can be easily understood even by first-time users of technology, as well as providing great experiences for their partners. As mentioned in Gojek's website, "Gojek's UI/UX team believes that a good product is a product that is not only able to provide functional benefits, but also provide an experience for the user," (GoHR, 2016)

2.2.2 High dependence on internet connection

Gojek is a mobile-based application, which means they rely heavily on a stable internet network. Gojek sometimes experienced some interferences in their network or a server failure. If so, their services would not be available for a few minutes, or even worse, for hours. This server breakdown or network problem is very inconvenient, because not only customers will not be able use the services, but driver-partners also will not be able to find any customers, which mostly lead to another problem, such as traffic problem or congested road full with Gojek's driver-partners and supposed customers that have no idea what to do, except to wait until Gojek fixed its problem.

4.3 Opportunities

2.3.1 Inefficient & not well integrated public transportation: Gojek provides easy-access to areas unserved by public transportation

As mentioned in the second part of this paper, Indonesia public transportation is not well developed and not well integrated. Compared to a map of metro lines in Seoul metropolitan area, Jabodetabek urban railway network map looks much less complicated even though it has already included commuter line, LRT, and MRT lines. That is why people prefer to ride a motorbike to have a better access to certain areas and faster mobility. This point can also be considered as the opportunity for Gojek. Because Gojek, more specifically Go-Ride offering a motorbikes ride-hailing service from and to anywhere around its service area. With Go-Ride, customers can access areas unserved by public transportation easily. Gojek also integrated with public bus stops and train stations, makes it more comfortable and faster for the customers to get a Go-Ride from there to their destinations, especially during the rush hour.



Image 10. Jabodetabek Urban Railway Network Map (left)

VS Metro Lines in Seoul Metropolitan Area (right)

2.3.2 Development and innovation in fintech: GoPay

“The Government of Indonesia is encouraging citizens to reduce cash dependencies through the National Cashless Movement. According to data from the Bank of Indonesia in 2015, only 10% of people in Indonesia are using cashless payments,” (Gojek, 2017). However, back then there was no player in digital payment in Indonesia. Gojek saw this as an opportunity and made a good move by initially entering this market to support the National Cashless Movement and increase the benefits of a digital society. Thus, Gojek launched a cashless payment platform on their app, GoPay, in April 2016. In the same year, OVO, another digital payment platform built by PT Visionet International, digital financial services subsidiary of the Lippo Group's, one of Indonesia's was launched. OVO got a license to operate as a fintech company throughout Indonesia on 25 September 2017³³, partner with Grab in 2018³⁴, and became the 5th Indonesian unicorn company in 2019.³⁴ Since then, few other digital payment platforms were launched and started its business in Indonesia. Today, we can see at least 5 top e-wallet platforms in Indonesia based on the number of monthly active users between 2017-2019 were GoPay, OVO, DANA, LinkAja, and Jenius.³⁵ All of them are locally owned companies.

4.4 Threats

2.4.1 Intense competition with Grab: Similar services

Grab is the only competitor of Gojek in Southeast Asia market. The competition between Gojek and Grab is very intense. Basically, both companies are providing similar services, on-demand services, ride-hailing, food delivery, payment service (Gojek via GoPay, and Grab via OVO), and many more. Therefore, they always compete to give the best fare rate, best promotions, and best services they could give to the customers. Even though Gojek has higher brand awareness and often preferred by customers, customers

still would shift to Grab whenever they offer better promotions, for instance by giving out free discount voucher for ride-hailing or food delivery services. Also, there is one differentiator feature that Grab has but Gojek still does not have on their app. This feature is called 'GrabNow'. GrabNow is a way to ride GrabBike specifically built to minimize the waiting time of customers', so they can increase productivity.³⁶ "Passengers just need to tap on the 'connect' icon when they are in close proximity with GrabBike biker or use the 6-digit code available on the driver's phone and the Grab platform will do all the other work. Once connected, passengers have to confirm that they are with the right driver and they are set to go," (Grab, 2017). Gojek definitely need to develop a similar or even better feature than GrabNow to compete with Grab.

2.4.2 Different government regulations for online-based transportation in Southeast Asia's countries

Grab is officially operating in eight countries in Southeast Asia, Singapore, Indonesia, Malaysia, Philippines, Vietnam, Thailand, Cambodia, and Myanmar. Meanwhile, Gojek only has officially started its operations in four countries Indonesia, Singapore, Vietnam, and Thailand. Also, Gojek is in a process of penetrating Malaysia and Philippine's market. Gojek is definitely left far behind its competitor in terms of market expansion. This obstacle could be happened due to different government regulations for online-based transportation business in Southeast Asia's countries. Especially, for the two-wheeled vehicles. For instance, the Philippine's government demanded ride-hailing companies in the country must be at least 60 percent Filipino-owned.

5. Critical Success Factors of Gojek

5.1 Services diversification

Gojek's strategy to expand its services into broader sectors is one of critical success factors of Gojek. If Gojek just

stuck with three services, Go-Ride, Go-Send, and Go-Mart, Gojek might have not as successful as today. Gojek listened to what their customers really needs and continuously made innovations to provide solutions to many daily life problems. With Gojek's ecosystem, Gojek driver-partners experiencing an increase in their income and spending, as well as their family well-being. Even though, there is one differentiator feature that Grab has on their mobile application as mentioned in the fourth part of this paper, according to Global Data (2019), Gojek is far superior to the variety of services they offer, compared to Grab. Aside of services that both Gojek and Grab are offering such as ride -hailing, food delivery and many more, Gojek also offers medicine deliver, movie/concert ticket booking system, home/auto repair, home cleaning, massage, beautician, laundry, and many other else that Grab doesn't offer.

Moving to a broader innovation, in September 2019, Gojek jumped into the content streaming business by launching Go-Play, a video on demand platform similar to Netflix where user can pay for a subscription to watch various video contents, such as dramas and movies in HD quality both offline and online. Users can access Go-Play from its mobile application or from its official website at www.goplay.co.id. At Go-Play launching ceremony, Kevin Aluwi, Co-Founder of Gojek, mentioned that, "GoPlay can create positive socio-economic impacts for the advancement of the creative industry ecosystem in Indonesia."³⁷ Go-Play subscription fees are available at two options: IDR 45,000 for monthly access to all contents; and, IDR 29,000 for 2-weeks access. Go-Play also offers promotional packages of subscription that comes with various discount vouchers of other Gojek's services. Moreover, Go-Play also supports Indonesian indie movie makers by giving them opportunity to showing their indie movie on Go-Play, where users can watch and giving appreciation for the movie makers with certain amount of tip.³⁸ Other than Go-Play, Gojek also come up with few other

innovations as mentioned in the fourth chapter of this paper.

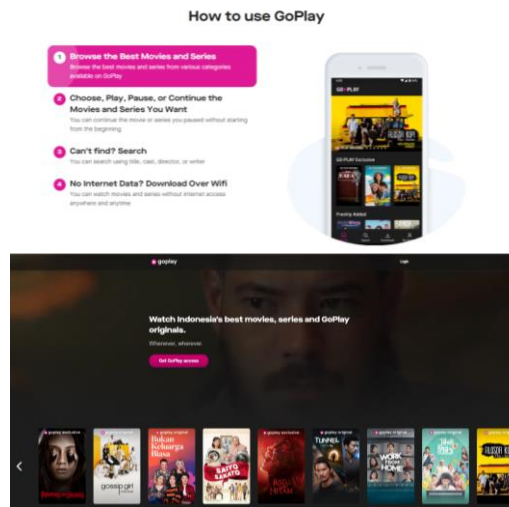


Image 11. Go-Play Mobile Application and Official Website

5.2 Focus on food & finance market, in addition to ride-hailing market

Gojek's decision to enter the food market with Go-Food in 2015, and enter the financial technology market with GoPay in 2016 is another critical success factor for Gojek's business expansion. "It's hard for startups relying solely on transportation services to survive unless they have ample cash to burn. Makarim understood this problem since Gojek found popularity in Indonesia, so he laid the groundwork for other on-demand services early on, giving his company multiple legs to stand on. As a comparison, it took Uber around four years to add new verticals, while Grab only began adding new business lines in 2018. Gojek's early diversification is paying off," (Florene and Wu, 2020). "According to a press release published in February 2019, Gojek pulled in USD 9 billion in gross transaction value (GTV); feeding into that amount, GoPay drew USD 6.3 billion, while Go-Food channeled USD 2 billion. Gojek's current co-CEO Kevin Aluwi said that the company will focus on these two lines of business, especially after the demand for shared rides slumped due to the COVID-19 pandemic," (Florene and Wu, 2020).

In an event held by IDN Times (2019), Chief Food Officer of Gojek, Catherine Hindra, said that Go-Food was inspired

by one of their existing service, Go-Shop. Back in 2015, Gojek only had three services: Go-Ride, Go-Shop, and Go-Mart. A month after its release in 2015, 80 percent of demands on Go-Shop were 'food'. Gojek team saw these huge demands for food delivery in Go-Shop as an opportunity, and later in the same year they introduced their customers with a new feature on Gojek mobile application, which was Go-Food. Go-Food is not only a platform to meet the customers' needs, but it also helps to empower Micro, Small and Medium Enterprises (MSMEs) to become Go-Food merchant partners. People who would like to partner with Go-Food don't have to own any restaurants, they can simply cook from their home and sell their foods through Go-Food platform after they registered online or offline at Gojek's office. It was started with 5,000 merchants, however as of 2020, Gojek has approximately 550,000 merchant-partners all over Indonesia. Moreover, 82 percent of Gojek's merchant-partners also experienced an increased in transaction volume after partnering with Gojek, and 85% of those partners experienced more than 5 percent increase in transaction volume.³⁹ Furthermore, Go-Food currently is dominating 75 percent of food delivery market share in Indonesia (Nielsen 2019 as cited in Florene and Wu 2020)

As for GoPay, Gojek's exceptional e-wallet service, it allows Gojek customers to use its on-demand services seamlessly, including but not limited to making faster purchases, tracking their spending easily, and transferring money in no time.⁴⁰ Also, according to user research, people prefer using GoPay on their Gojek application due to the variety of promotions, the removed hassle of fumbling for small change, and its pure ease of use.⁴¹ To use GoPay customer will have to load a certain amount of credit into their GoPay account, then they can use the credit to pay at supporting merchants by scanning a QR code from their mobile app. In 2019, Gojek released a new feature in its payment services, which is Gojek PayLater in partnership

with Findaya, a fintech company. Gojek PayLater functions similar to credit card and each customer is given different credit limit. “With the latest investment from Facebook and PayPal, which resulted in an agreement to integrate PayPal into GoPay, the company now has access to the network’s 25 million merchants worldwide,” (Florene and Wu 2020).

5.3 Collaboration with Google Ecosystem

Finally, Gojek collaboration with Google is also one of critical success factor of Gojek. “Gojek runs the Google Cloud Platform which ensures that the system matches the right driver with the right request and helps Gojek find out the optimized route and the estimated arrival time of the driver. This system also helps Gojek in analyzing their data with 1 million drivers in 167 districts and cities and 2.5 million customers so that it will make it easier for customers to access and use the Gojek application,” (Benjamin et al, 2020). Furthermore, Gojek can accurately forecasts changes in demand from customers due to changes in weather and prices, as well as analyzes the development of features to be introduced in the future, standardization and quality of service with this system, so that both driver-partners and customers can be satisfied with its services (Benjamin et al, 2020).

6. Conclusion and Future Perspectives

With Gojek’s ability to innovates according to what their customers really need supported by advanced technology developments, skilled workforces, and synergy partnerships with its driver-partners and merchant-partners, Gojek has successfully expanded its services domestically and globally in Southeast Asia. Starting from a local motorbikes-taxi call center to a multinational company worth more than USD 10 billion. Everyone is expecting more growth and expansion of Gojek in the future, and here are few advices for Gojek related to its rebranding in overseas market, UI/UX updates, and Southeast Asia expansion.

6.1 Rebranding its overseas brand: Use one brand name for all countries

Gojek successfully penetrated Vietnam and Singapore’s market in 2018, and Thailand’s market in 2019. However, due to local regulations that demands Gojek to partners with local company to enter the market, Gojek in Thailand couldn’t use ‘Gojek’, instead they used ‘GET’ as their brand name and yellow color for their brand color. Their color, logo, application design, and driver’s attributes are different from the Indonesian one. This also happened in Vietnam, where Gojek used ‘Go-Viet’ with red color and also different logo. However, in Singapore, they use ‘Gojek Singapore’ for its official brand name, with same color and logo as Gojek Indonesia.

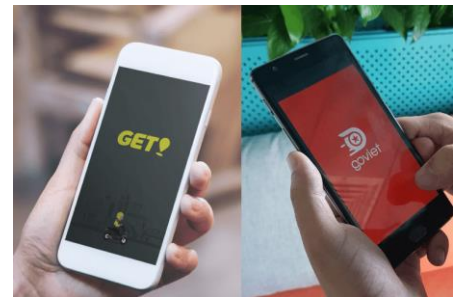


Image 12. GET and Go-Viet App Design

If Gojek would like to penetrate Southeast Asia market, Gojek should do exactly what Grab did to protect their brand identity, including name, logo, color, application design, and more, so they would gain more brand awareness even in other countries. However, Gojek has recognized this problem and in 2020, Gojek comes up with a new plan to unify its Vietnam and Thai brands. Gojek will bring them under one technology platform with same UI and UX design to strengthen operations and brand image beyond its home market.⁴² In a newest news in August 2020, Gojek finally announced that its official Gojek mobile app is now accessible in Vietnam, as Gojek, no longer Go-Viet.⁴³ Following Vietnam, a month later, Gojek also launched Gojek app in Thailand in order to gain ground in the highly competitive market, specifically with Grab.⁴⁴



Image 13. Go-Viet and GET before Rebranding (upper)



Image 14. Go-Viet and GET after Rebranding (lower)

6.2 Be careful of too complicated UI/UX updates

Finally, since its first launch in 2015, Gojek app went through various updates to improve its UI/UX design, add some new features, and fixing bugs (flaw or glitch in the system). However, Gojek should be careful of adding not-so-important features into the apps, such as the feed feature that is available in newest version of Gojek app since October 2020. This feature is called ‘GoPay Feed’. GoPay Feed feature is a feature where you can add other Gojek users as friends, make an interaction on the feed such as give like or comment on every GoPay

balance transfer transaction’s posts.⁴⁵ However, not all users seem to be happy with this new update from Gojek, because not all users want to share their transaction’s posts with other users, even though it’s their friends or families. Unfortunately, users have no other choice to keep the feature in their app because users are not given any other option and the feature cannot be removed once they updated to the newest version. But, Gojek gives an option to change the setting of the transaction feed’s privacy to private, so other people won’t be able to see it. In other hand, this GoPay Feed feature update could also be seen as Gojek’s move to broaden their business into the social media sector.

Lastly, we can find the main services Gojek is providing such Go-Ride, Go-Food, and Go-Pay in the home menu of Gojek’s application. There we can also find other useful information related to ongoing promotions or updates for all services available in Gojek’s app. However, apparently users need to scroll from the top to the bottom of the tab to find the information they are looking for, and it is very long and never ending. Imagine if a user is using an old smartphone, then it must be so heavy for that phone to process the large amounts of information in one page, and it might experience a lag when they scroll up or down the page. Gojek did put some upper bar where users can choose between keywords available there and see only information related to the keyword they choose. However, it is still not convenient enough. To allow users navigate better and give a better experience for all smartphone user, Gojek might need to divide the home tab into few sections or put floating icons or upper bar for each categories of their services. Furthermore, Gojek might also consider to enable the accordion element of user interface design, that allow users to expand and collapse sections of content, so users can navigate and find the information they are looking for more quickly and this will also enhance the look of the screen display, make it looks more comfortable and not so complicated.

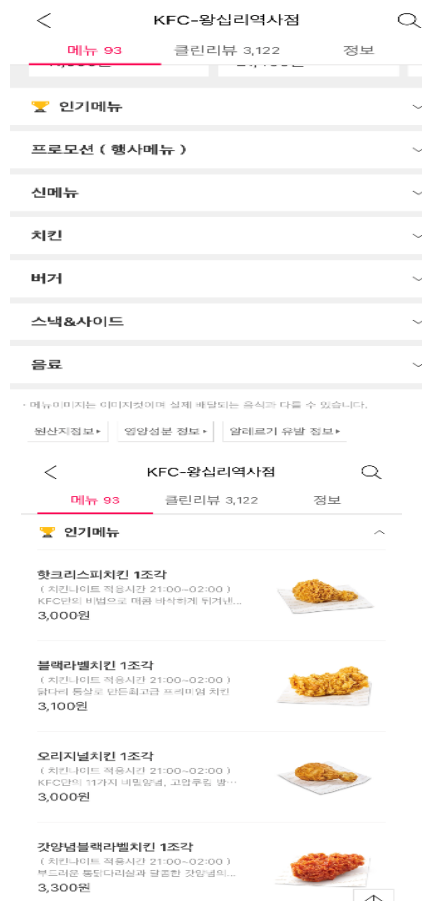


Image 15. Example for Accordion UI Element (the arrow symbol) when collapsed (left) and when expanded (right)
Screenshots from Yogiyo, Korean food delivery app

6.3 Secure Expansion to More Southeast Asian Countries

As mentioned in the fourth part of this paper, currently Gojek's only competitor, Grab has successfully expanded its business to 8 countries in Southeast Asia, which are Singapore, Indonesia, Malaysia, Philippines, Vietnam, Thailand, Myanmar, and Cambodia. While Gojek is only operating its business officially in Indonesia, Singapore, Vietnam, and Thailand. Gojek did make a new progress in their market expansion attempts to Philippines and Malaysia market as of 2019 after several rejections due to local regulation problem. Now, Philippine company Pace Crimson Ventures Corp. has acquired a 60% stake in Gojek's affiliate in the country, Velox Technology Philippines, which means it is now enough to meet the minimum local ownership requirement for transport companies.⁴⁶ As for

Malaysia market, the Cabinet has agreed to give motorcycle ride-hailing services principal approval in the country. "Go-ride start operating based on a proof-of-concept basis to measure demand for the service over six months in selected areas, to allow the government and participating firms to gather data and evaluate demand for the service, while the government works on drafting legislation to govern bike-hailing," (Leen, 2019). Gojek is now allowed to start limited operations in the country starting January 2020.⁴⁶

After Gojek secured their position in Philippines and Malaysia, Gojek needs to set their foot to Cambodia and Myanmar, following Grab. This move is important to prevent Grab from dominating the market there. Instead of just focusing on the ride-hailing, Gojek might use another strategy such as entering the market with an introduction to its digital payment first, as GoPay is one of Gojek's strength that Grab doesn't have and this could be a winning point for Gojek.

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Exploring the effect of overload on the discontinuous intention of SNS: the moderating effect of gender

Yu Xiang Xia, Seong Wook Chae³

Abstract

With the proliferation of smartphones and 5G networks, mobile social network (SNS) has become an indispensable part of People's Daily lives. However, with the use of SNS, fatigue and withdrawal behavior gradually emerged. Based on The Transactional Theory of Stress and Coping (TTSC), we explored the mechanism of SNS overload on users' discontinuous intention under the framework of "stressor-strain-outcome". And we also investigated the moderating effects of gender in this process. We hope that through our research, we can help SNS users to reduce unnecessary fatigue, and provide better suggestions for platform designers to adjust product design to improve user experience.

1. Introduction

With the popularization of smart mobile devices and high-speed mobile network, a large number of SNS APP migrate from PC to mobile terminals, such as mobile phone and Pad, which accelerates the spread and dissemination of mobile SNS. People spend a lot of time on SNS every day, they seem to be in constant contact with these SNS applications, for work, communicate or entertainment.

However, after experiencing rapid growth and dissemination of SNS, it is now facing the risk of losing users, and users' flight from the SNS is becoming a trend.

Twitter had 70 million active users in the United States in the first quarter of 2017, but fell to 68 million in the second quarter, and its global active users are stagnant at 328 million (Trefis, 2017). The phenomenon that users escape from SNS also appears in China. The "2017 China SNS influence report" shows that, those who said SNS had a positive impact on their lives fell from 65% to 61%. Among the 20-30 age group, 31% said SNS made them feel empty and restless, 34% said they couldn't concentrate and 39% said they had turned off some features of SNS (Kanter, 2017).

All these evidences suggest that aspirers are increasingly tired of SNS and are scaling back their use. This trend of 'frequent-occasional-eventual abandonment' indicates that early adopters are beginning to suffer from social networks fatigue (SNF). The Limited Capacity Model (LCM) can be used to explain social networks fatigue. Lang (2000) suggests that people have a limited amount of mental resources to process

³ Corresponding author

information. Overload can cause social networks fatigue. Several studies have looked at the negative effects of SNS overload on users' psychological states, such as dissatisfaction, regret, and fatigue. However, there is disagreement about the type of overload. In addition, according to the Person-context interactive Theory, individual traits and the context interactively affect individual psychology and behavior (Magnusson & Stattin, 1996). Social cognitive theory also holds that gender determines different goal-orientation, and thus determines differences in male and female behavior. Different genders have different perceptions of technology, so their response to technological stress may also vary by gender. However, no studies have examined gender differences in the impact of overloading on discontinuous use. Therefore, we wanted to examine the influence of individual traits (gender) and various overload factors simultaneously in order to fully understand the influence of SNF on discontinuous intention. Our research aims to:

- (1) Discuss the impact of different types of overload on SNF and discontinuous use.
- (2) Investigate whether gender plays a moderating effect in this process.

Our research can help people better understand the phenomenon of social networks fatigue and escape, and will

provide meaningful implications for users and SNS designers.

2. Theoretical background and Literature review

2.1 Previous studies on social networks fatigue and discontinuance intention

“Fatigue” first appeared in the medical field and was described as a subjective, unpleasant feeling (Piper et al., 1987, p. 19). In occupational studies, fatigue is cited as a response of vulnerable individuals to high demands or workload and inability to meet individual goals (Hardy, Shapiro, & Borrill, 1997). The experience of fatigue is a gradual process. The intensity of fatigue change from a mild feeling of tiredness to a more persistent experiences and a state of exhaustion (Lewis & Wessley, 1992) or fatigue.

Fatigue is also classified as acute or chronic based on the duration for which the experience persists. The former can be relieved by appropriate rest (Shen et al., 2006), while the latter is chronic, progressive, and cumulative, and cannot be relieved by rest (Shen et al., 2006; Tiesinga et al., 1999). Fatigue manifests itself in both physiological and psychological aspects. The former is defined clinically as a “loss of maximal force generating capacity during muscular activity” (Lewis & Haller, 1991, p. 99). The latter is described as a psychological fatigue experience related to stress, etc. (Potempa, Lopez, Reid, & Lawson, 1986; Shen, Barbera, & Shapiro, 2006). Fatigue will lead to

individual withdrawal from the stress-causing environment (Walker, 1986). Ravindran, Yeow Kuan, and Hoe Lian (2014) defined social network fatigue (SNF) as a subjective, multi-dimensional individual feeling caused by the use and interaction of social network, including exhaustion, annoyance, anger, disappointment, lack of interest and enthusiasm.

As for the causes of SNF and the impact of SNF, there are three main streams : Bright, Kleiser, and Grau (2015) adopt Technology Acceptance Model (TAM) to study SNF, and construct a cognitive-attitude paradigm to explore the antecedent variables of social networks fatigue: SNS efficacy, SNS helpfulness, SNS confidence and SNS privacy concerns. Cramer, Song, and Drent (2016) believes that SNS is often used to show oneself in the most favorable way, such as presenting positive events and good feelings, etc. Therefore, SNF may be induced by negative social comparison. These studies focus on the causes of SNS fatigue, but ignore the process and results of psychological state evolution. The second perspective, based on the environmental psychology perspective, adopt Stimulus-Organism-Response (SOR) as baseline model. SOR model points out that environmental factor stimulate people's internal state and drive their behavior. Luqman, Cao, Ali, Masood, and Yu (2017) discusses the excessive use of SNS (Excessive cognitive use,

Excessive social use and Excessive hedonic use), which causes technostress and SNS exhaustion, and ultimately results in discontinuance intention of use. Cao and Sun (2018) explore the effect of overload on the discontinuous intention of SNS users, and propose three types of overload in the SNS context: information, communication, and social overloads. They are assumed to impact the internal psychological states (i.e., exhaustion and regret) of users, which in turn motivate them to quit. Thirdly, based on psychological health and pressure perspective, adopted the Stressor-Strain-Outcome (SSO) as their research framework. Lee, Son, and Kim (2016) employ the Transactional Theory of Stress and Coping (TTSC) as the benchmark theory, regards overload (i.e., stressors) as a core determinant of SNS fatigue (i.e., strain) and identifies three dimensions of overload (i.e. information overload, communication overload, and system feature overload). They also propose SNS characteristics as the antecedents of overload (i.e. information characteristics: information relevance & equivocality and system characteristics: system pace of change & complexity). Dhir, Yossatorn, Kaur, and Chen (2018) utilize the stressor-strain-outcome framework (SSO) examine whether psychosocial wellbeing measures, such as compulsive media use and fear of missing out, trigger fatigue and, furthermore, whether social networks

fatigue results in anxiety and depression.

Overall, these studies defined the antecedent variables of SNF, including overloading, negative social comparisons and privacy concerns. We believe that overload is the most important cause of SNF. And based on these previous studies, we divide overload into four types: social overload, communication overload, information overload and system feature overload.

Previous studies ignore the interaction between individual traits and situations. According to Transactional theory of stress and coping (TTSC) (Lazarus & Folkman, 1984), when confronted with a stressor, individuals make assessments of potential threats, as well as their ability to change situations and manage negative emotional reactions. This process causes individuals to perceive a given situation in different ways and adopt different coping strategies. We think that gender plays a big role in how well individuals cope. Previous studies have investigated the gender differences in the effects of environmental stress on psychological status and coping strategies. For example, Greer, Laseter, and Asiamah (2009) investigated how gender modulates negative emotions such as anxiety and obsessive-compulsive disorder among African American adults in response to racial pressure.

Israel-Cohen, Kaplan, and Health

(2016) investigated that male and female adopt different coping mechanisms to seek emotional support to relieve the stress of war trauma in Israel. However, there are few studies on gender differences in the effect of overloading on discontinuous use. Therefore, it is necessary to further study the influence of individual characteristics, such as gender, on SNF and discontinuance intention.

2.2 Transactional Theory of Stress and Coping

3. Research model and hypothesis development

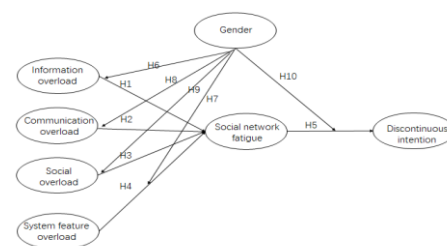


Fig.1 Research Model

3.1 The effects of overloads on SNS fatigue

Information overload refers to the amount of information generated in a social network that exceeds the user's ability to process it. The pace of information proliferation in SNS accelerates as the number of SNS users increases exponentially. Too much information in an SNS could quickly drive SNS users to cognitive limits in processing information and make them feel overwhelmed (Karr-Wisniewski & Lu, 2010). When the user faced with excessive information, it is easy to generate information anxiety, which is

characterized by mental and psychological fatigue, anxiety and unhelpfulness. Thus, we proposed:

H1 Information overload is positively related to SNS fatigue

Communication overload refers to the imbalance between frequent communication and human cognitive ability, which can increase users' burden and make them feel powerless to cope (Zhang et al., 2016). This constant communication interrupts people's work. Communication overload can make it difficult for people to focus on their work or even finish it, leading to fatigue (Lee et al., 2016). Thus, we proposed:

H2 Communication overload is positively related to SNS fatigue

Dunbar (2010) has proposed and tested the "150 law", which states that the human brain can only maintain 148 stable social relationships, but most people actually have far more SNS friends than that. It may take a lot of effort to manage these redundant social relationships. SNS technology allows people to connect with each other anytime, anywhere, but constant exposure to social networks and intense social activity can leave users feeling exhausted (Cao & Sun, 2018). This has become a social norm because people need to provide social support to their friends on the social network. Excessive requests for social support can be a major cause of perceived

social overload and fatigue (Zhang, Zhao, Lu, & Yang, 2016). Thus, we proposed:

H3 Social overload is positively related to SNS fatigue

System feature overload captures SNS users' perception of technological characteristics, and it is defined as the perception that the features provided by the SNS platform exceed users' demands. System feature overload occurs when a given information technology is unsuitable for a given task and is considered too complex for the task. Users often encounter system updates and modifications in SNS. While these new features may not be particularly useful to users, people will need to put extra effort into learning about them, and they will feel tired and stressed because of the complexity (Zhang et al., 2016). Thus, we proposed:

H4 System feature overload is positively related to SNS fatigue

3.2 SNS fatigue and discontinuous intention

In the context of SNS, users' social networks fatigue is often associated with their discontinuous intention. The discontinuous intention mainly includes the decrease in the duration and frequency of SNS use, the intermittent shutdown or permanent shutdown and the shift to other SNS. A lot of previous studies have found that SNF positively affects discontinuous intention (Cha & Lee, 2015;

Rahmanyanti & Yasa, 2019; Zhang, Zhao, Lu, & Yang, 2015). Thus, we proposed:

H5 Social networks fatigue is positively related to discontinuous intention

3.3 The moderate effects of gender

Previous studies have found that there are significant differences between male and female in the use of IT. Males' use of SNS is more driven by their ability to get general information (Krasnova, Veltri, Eling, & Buxmann, 2017). Males are more likely to use the Internet for information search and entertainment, while females are more likely to use the Internet for communication (Joiner et al., 2005). Therefore, it can be inferred that in the context of SNS, males have higher information processing ability than females. Females, on the other hand, are more responsive to social and communication requests on SNS, and are less likely to tire of SNS due to social and communication overload. In addition, many studies have found that male and female have different positive attitudes toward using the Internet. Female lack confidence in their ability to use the Internet and often feel anxious (Joiner et al., 2005), so it can be inferred that females are more likely to feel tired due to the SNS system feature overload. Thus, we proposed:

H6 The positive effect of information overload on social

networks fatigue is stronger for females than for males.

H7 The positive effect of system feature overload on social networks fatigue is stronger for females than for males.

H8 The positive effect of communication overload on social networks fatigue is stronger for males than for females.

H9 The positive effect of social overload on social networks fatigue is stronger for males than for females.

Social cognitive theory has demonstrated that males and females behave differently when make decision in various situations. Males are more outcome-oriented, whereas females are more process-oriented. Social role theory also supports this view. So, we conclude that females pay more attention to psychological processes than males, their behavior intention is more affected by social networks fatigue. Thus, we proposed:

H10 The positive effect of social networks fatigue on discontinuous intention is stronger for females than for males.

4. Expected results

SNF has a significant positive effect on the discontinuous intention. Information, communication, social and system feature overload all have significant and positive effects on

SNF. They can be listed in order of importance: information overload, social overload, communication overload, and system feature overload. It shows that the existence of a large amount of irrelevant information on SNS is beyond people's ability to deal with, which is the primary cause of SNF. Second, sometimes due to the pressure of social norms, people have to provide social support to their friends, respond positively to what they post, vote for their friends or buy the goods they sell on SNS, which is the second factor causing SNF. The third cause of SNF is too much communication, which causes distraction and other negative effects. However, system feature overload has the least impact on SNF, probably because SNS is relatively simple in overall function design and easy to control.

Male and female groups have different perceptions and receptivity to technology and relationship-oriented factors, and have different response to technical pressure. Therefore, gender difference exists in the generation of discontinuous intention. Information overload and system feature overload have a greater effect on SNF for female. Communication and social overload have a greater effect on SNF for male. And female users are more likely to be tired and generate a discontinuous intention.

5. Implications

We integrated previous studies to define four types of SNS overload and revealed their varying degrees impact on SNF. Based on the TTSC, we consider gender as an individual trait and investigate its moderating role in this influence process. Our research sheds light on the understanding of negative psychological and behavior of users in SNS context.

In addition, through our research, we hope to provide some useful suggestions for SNS users and designers. For the designer, they should provide proper filter mechanism for the user to choose independently, strengthen SNS content management function, reduce the interference and prevent the user fatigue. Such as providing summaries of articles, or categorizing content according to users' interests, to provide a better information processing experience for users. SNS can restrict some meaningless commercial activities; allows users to choose to turn off certain features to avoid interrupts.

Furthermore, different strategies should be adopted for male and female groups. For example, reduce recommendations for new conversations or new friends on male users' pages. For male users, SNS should provide some functionality to group friends and allow them to organize friends according to groups, such as some friends are restricted to communication. SNS should reduce the general information on female

users' page and provide simpler functional design for female them.

At last, users should be aware that they can avoid the negative effects of SNS by actively managing their actions. For example, reduce unnecessary online friends, avoid meaningless social activities, reduce stress and burden. Use strategies such as delayed and focused responses to reduce the time and effort invested in the conversation. Block certain information platforms or friends and choose other communication channels to reduce dependence on SNS.

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Misinformation detection and rectification based on QA system and text similarity with COVID-19

Insup Lim^a, Namjae Cho^b

^a MSc Student, School of Business, Hanyang University

17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea

Tel: +82-2-2220-4142, E-mail: insup88080@hanyang.ac.kr

^b Corresponding author: Professor, School of Business, Hanyang University

17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea

Tel: +82-2-2220-1058, Fax: +82-2-2292-3195, E-mail: njcho@hanyang.ac.kr

Abstract

As COVID-19 spread widely, and rapidly, the number of misinformation is also increasing, which WHO has referred to this phenomenon as “Infodemic”. The purpose of this research is to develop detection and rectification of COVID-19 misinformation based on Open-domain QA system and text similarity. 9 testing conditions were used in this model. For open-domain QA system, 6 conditions were applied using three different types of dataset types, scientific, social media, and news, both datasets, and two different methods of choosing the answer, choosing the top answer generated from the QA system and voting from the top three answers generated from QA system. The other 3 conditions were the Closed-Domain QA system with different dataset types. The best results from the testing model were 76% using all datasets with voting from the top 3 answers outperforming by 16% from the closed-domain model.

Keywords:

Misinformation detection, Fake information detection, QA system, cosine similarity, Machine learning

1. Introduction

At the end of 2019, WHO was informed of an unknown etiology detected in Wuhan City, Hubei province of China (Novel Coronavirus, 2020). On 13 January 2020, the Ministry of Public Health, Thailand reported the first imported case of lab-confirmed novel coronavirus (2019-nCoV) from Wuhan (World Health Organization, 2020) and In an exponential rate with total reports of 57.8 million cases and over 1.3 million deaths on 22 November 2020 (World Health Organization, 2020).

The UN secretary-general launched the UN communications response initiative to combat the spread of misinformation in April 2020 (WHO, 2020). At the World Health Assembly in May 2020, WHO Member States passed Resolution WHA73.1 on the COVID-19 response. The Resolution

recognizes that managing the infodemic is a critical part of controlling the COVID-19 pandemic (WHO, 2020). Under the COVID-19 infodemic, many fake news detection models have been developed, and the majority of the models were based on classification techniques. Classification techniques require tremendous amount of label datasets. Even there's a lot of true scientific information on the web, still it lacks false labeled information.

To resolve this problem, the proposed misinformation detection model is based on only using true information, Question Answering system (QA system) and text similarities.

2. Literature Review

Misinformation is defined as false information that is not created with the intention of hurting others (WHO, 2020a). Even though it is not intended to hurt people, but to actually help them, still it is very dangerous for people to act on using unverified treatments against COVID-19.

2.1 Misinformation Detection and Rectification Systems

Classic misinformation detection models are based on supervised learning classification models, that need labeled datasets to identify whether they are true or not. Gilda (2017) tested TF-IDF with multiple machine learning algorithms, to identify fake news from Signal Media and OpenSource.co. Granik et al (2017) used Naïve Bayes to classify fake news on Facebook news posts. Recently, after the COVID-19 outbreak, Elhadad et al (2020) has built a machine learning model to classify fake COVID-19 information in Twitter by using voting systems of machine learning algorithms in multiple feature extraction conditions.

Rectification systems have been used based on QA systems, comparing the text similarity between the given answer and machine learning generated answer. Attia et al (2018) have used an automatic short answer correction system based on course material to correct the wrong answer of the questions.

2.2 Question Answer Generation

Obtaining training data for QA system is time-consuming and resource-intensive, and current available QA datasets are limited to certain domains and languages (Lewis et al, 2019).

The question answering system is divided into two steps, that cloze generation and translation. Cloze generation is the process of masking noun or named entity, and cloze translation transforms the masked sentence into question format (Lewis et al, 2019).

2.3 Open Domain Question Answering model

There are two types of QA system, open-domain, and closed-domain. The Open-domain QA system uses all the contexts provided in the system to answer the question, finding the appropriate context with the semantic similarity between the question and each subset of contexts (Semnani et al, 2020). On the other hand, the closed-domain QA system uses only one context for certain questions.

In this research both closed- and open-domain QA system, but the proposed model is more fitted into the open-domain system.

The QA system is fine-tuned upon the BERT-LARGE pretrained model, with 24 layers and 1024 hidden sizes, with 16 self-attention heads. The pretrained model is created by masking a word into a [MASK] token, and is trained to predict the masked word, allowing the model to understand the context (Develin et al 2018).

2.4 Word-Embedding

Word embedding is a technique of creating a word or sentence into a certain dimension sized vector. The tool used to vectorize the answers is BioBERT word-embedding module, that is based on BioBERT, a model trained with 29 million PubMed articles with the same process of BERT. In this research the dimension of the word or sentence-embedding is 768, which is the same as the embedding size of BERT (Lee et al, 2020).

2.5 Text Similarity

Text similarity is used to compare how similar two text are to each other. Cosine similarity is one of the most widely used algorithm for text similarity. It is calculated between two vectorized words (or sentences) that is done from the word-embedding step (Li et al, 2013).

2.6 COVID-19 Datasets

Datasets were collected from Kaggle CORD-19 Competition (Wang et al, 2020), FAQs of WHO (who, 2020), CDC (CDC, 2020), CMU-MisCOV19 (Memon et al, 2020), CoAID (Cui et al, 2020), COVID-QA (Möller et al, 2020).

Datasets are divided into two types, scientific datasets and SNS, News datasets. Scientific datasets are mainly published journals or datasets from authorized organizations such as WHO and CDC.

CORD-19 dataset is a collection of published articles from major biomedical journals, mainly from PubMed Central, by well-known AI research communities to support the ongoing researches of COVID-19. It contains over 400,000 articles and 150,000 full texts about COVID-19, SARS-CoV-2, and related coronaviruses (Wang et al, 2020). In this research, full paper is not used but the abstracts of the papers are used to build this model.

Frequently asked questions from WHO and CDC are also used as scientific datasets that are verified by these organizations. It provides basic information of COVID-19 and how to prevent it.

COVID-QA dataset is also in the category of scientific dataset, because the original contexts of Questions Answer data are published articles of COVID-19.

Next datasets are CMU-MisCOV19 datasets, and CoAID,

CMU-MisCOV19 contains tweets datasets that is labeled with 16 different themes, such as true public health response, fake cure, conspiracy, irrelevant and so on (Memon et al, 2020).

CoAID is Covid-19 healthcare misinformation Dataset, that contains Tweets, retweets, social platform post (news) datasets (Cui et al, 2020).

3. Research Model and Implementation

3.1 Research Model

Figure 1 is the model of fake COVID-19 QA generation system, using the QA generation system based on Cloze translation. Datasets used in this model are CMU-MisCOV19, CoAID dataset that is from tweets and news. By manually removing the contents duplicated, 153 False Question Answer sets were generated.

Figure 1. Fake Question Answer Generation

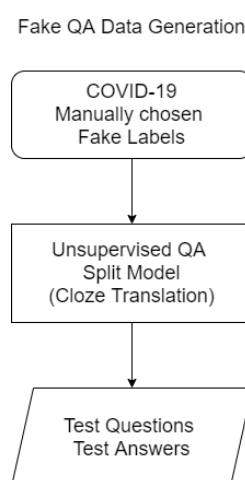


Figure 2 corresponds to the training system of the QA model. Since, data used for fine-tuning the QA model needs to be true, the full contexts are from CORD-19, combined FAQs of WHO and CDC, COVID-QA original contexts, true data of CMU-MisCOV19 and CoAID, directly mentioning the word in Table 1 (Elhadad et al, 2020).

The scientific abstracts of CORD-19's word length were limited to 150 to 250 words, it is based on the word limit of PubMed Central (PMC), since most of the CORD-19 articles are sourced from PMC.

Text summarization was done for data that are over 250 words, such as the original text from COVID-QA dataset, to use as much various data as possible.

For the QA system, a lightweight wrapper for the deep learning library ktrain, was used for loading the BERT-LARGE model, and build a QA model, that is based on an Open-Domain QA system.

Figure 2. Question Answering Model Fine-Tuning

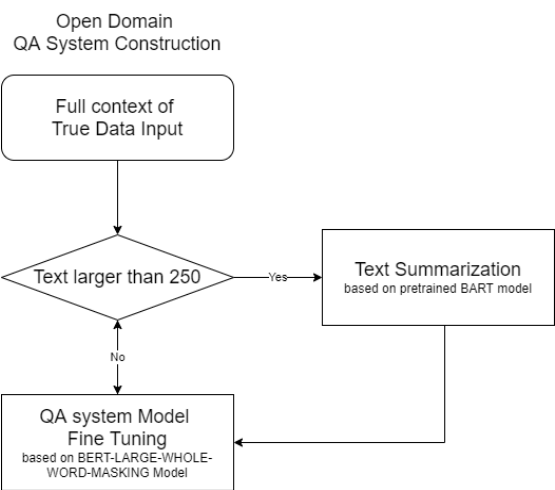


Table 1. Keywords equivalent to COVID-19

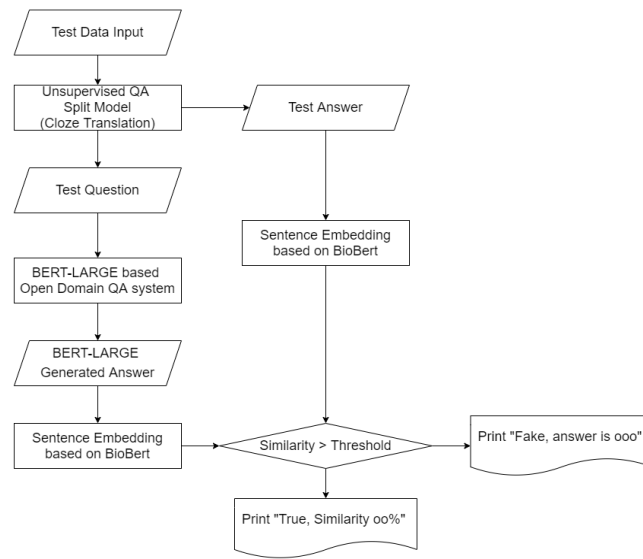
Keywords of COVID-19
● Coronavirus ● Corona_virus

Figure 3. Misinformation Detection and Rectification Model Utilization

● Corona-virus ● Novel_Coronavirus ● 2019-nCov ● Novel-Coronavirus ● NovelCoronavirus ● 2019_nCov ● COVID-19 ● SARS-CoV-2 ● Covid19

Figure 3 is the detection and rectification model utilization, first the data is put into the QA generation model, then the test question is put into the BERT-LARGE QA model that generates the answer. After the process, the test answer generated from the QA split model and the BERT-generated answer are converted into vectors by BioBERT-embedding library. These vectors are then compared with cosine similarity bringing out the value of 0 to 1, to determine whether the test answer is fake or not.

Misinformation Detection and Rectification Model Utilization



3.3 Model Implementation on different datasets

The model is implemented with 9 different conditions shown in table 2. From two different types of QA model and three different datatypes

Table 2. Testing conditions

Methodology	Dataset Types
Closed Domain QA system (base model)	Aggregated Data of Scientific, SNS and News
	Scientific Data
	SNS and News Data
Top BERT-LARGE answer with Open Domain QA system	Aggregated Data of Scientific, SNS and News
	Scientific Data
	SNS and News Data
Top Three BERT-LARGE answer with Open Domain QA system	Aggregated Data of Scientific, SNS and News
	Scientific Data
	SNS and News Data

The dataset types are divided into three categories. The scientific dataset, SNS and news dataset, and the aggregation of both datasets. The scientific datasets are the published articles and answers of the FAQs from WHO and CDC, the SNS and news datasets are mainly tweets and news that was contained in CMU-MisCOV, CoAID.

There are certain questions that cannot be answered by the QA model. In this case, the QA system generated answer is labeled as “No Response”. The evaluation of the model is done by excluding the “No Response” answers.

The Closed Domain QA system is the base model, that of finding the highest matching theme context and find the answer within the text.

Top BERT-LARGE answer is based on Open Domain QA system that generates the answers by searching the highest semantic similarity from the whole context.

Top Three BERT-LARGE answer QA system is similar to the explanation above, but finds the answer with top three highest semantic similarities, then determines the answer by choosing the majority by voting.

There are three rules for determining whether it is true or misinformation for the top three answer condition, after calculating the cosine similarity between each three answers and the test answer.

1. If the question has three or two answers with the same result, vote for the majority
2. If the question has two answers with a tie, pick the top answer, since it has the highest semantic similarity between the context and the question
3. If the question has only one answer pick the top answer as the result

For example, if answer 1 and test data has similarity of 0.9, answer 2 and test data has 0.8, answer 3 and test data has 0.4 and the threshold of determining the true or fake is 0.7, then the true is 2 and fake is 1, meaning the test answer is true.

4. Results

4.1 Accuracy and F1 score

As shown in table 3 the closed-domain QA system had at most 0.592 accuracy with 0.362 F1-score, which was using the scientific datasets, and the lowest score with the SNS and News Datasets that had the accuracy of 0.394 and F1-score of 0.257. In this case, the

similarity thresholds were very high, which are 0.9, compared to other testing conditions.

Table 3. Closed-Domain QA system results

Dataset Types	Similarity Threshold	F1 score	Accuracy
Aggregated Data	> 0.9	0.351	0.564
Scientific Data	> 0.9	0.362	0.592
SNS and News Data	> 0.9	0.257	0.394

Table 4 shows the top Answer comparison between the BERT-LARGE QA system generation and the given test answer. There are questions that could not be answered, and the value with “Excluded” is the value with those unanswered questions removed. The highest score among all within the “Excluded” category, the accuracy was 0.724 from the scientific datasets with 0.793 similarity threshold, whereas the lowest was the SNS and News Dataset with 0.573 accuracy and 0.654 f1-score with a similarity threshold of 0.740.

Table 4. Top answer BERT-LARGE QA system results

Dataset Types	Similarity Threshold	No Response	F1 score	Accuracy
Aggregated Data	> 0.796	Included	0.715	0.722
		Excluded	0.719	0.717

Scientific Data	> 0.793	Included	0.723	0.732
		Excluded	0.728	0.724
SNS and News Data	> 0.740	Included	0.649	0.572
		Excluded	0.654	0.573

Unlike the other two results table 5 indicates dataset with the highest accuracy is the aggregated data of both scientific, SNS and News data. It has an accuracy of 0.760 with F1 score of 0.758, the SNS and News data still got the lowest accuracy and F1 score of 0.741, 0.733 respectively.

Table 5. Top three answer BERT-LARGE QA system results

Dataset Types	Similarity Threshold	No Response	F1 score	Accuracy
Aggregate d Dataset	> 0.792	Included	0.753	0.764
		Excluded	0.758	0.760
Scientific Data	> 0.792	Included	0.733	0.741
		Excluded	0.738	0.734
SNS and News Data	> 0.791	Included	0.613	0.629
		Excluded	0.620	0.632

4.2 Analysis of correctly/falsely answered questions

Figure 4 and table 6 show the most frequent words from correctly answered questions. According to figure 4 and table 6, cure, patients, vaccine, immune, and prevent were the most frequent questions that the QA system answered correctly

Figure 4. Wordcloud of correctly answered questions

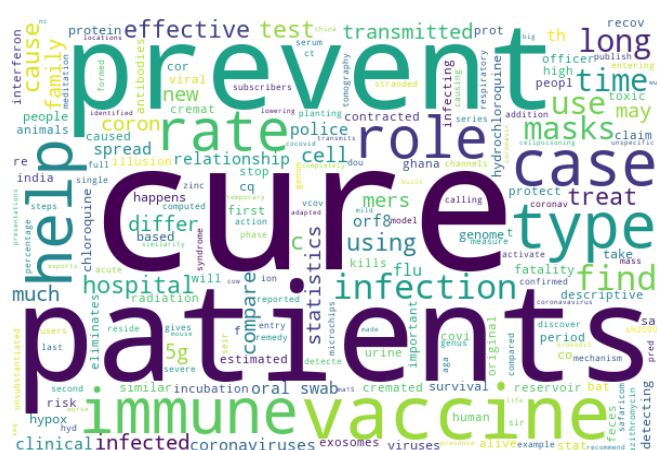


Table 6. Frequency of word from correctly answered questions

Most Frequent words	Word count
Cure	20
Patients	12
Vaccine	8
Immune	6
Prevent	6

Figure 5 and table 7 show the frequent words of falsely answered questions, which were 5g, cure, medicine, hydrochloroquine (correctly hydroxychloroquine), towers.

Figure 5. Wordcloud of falsely answered questions



Table 7. Frequency of word from falsely answered questions

Most Frequent words	Word count
5g	10
Cure	7
Medicine	4
Hydrochloroquine	3
towers	3

From these results, the answers containing 5g, medicine were not answered correctly. For the word “cure”, it appeared in both sides that 74% of answering the questions.

5. Conclusion and Limitation

The research aims at detecting and rectifying misinformation of COVID-19. Most of the misinformation detection models are based on classification models, without correcting the false information, and the limitation of these models. First, it cannot indicate which part the wrong information is in the context, it may identify it as false, but it may not indicate which part is wrong. Secondly, there should

be tremendous datasets that are labeled true or false to train the model. To solve these problems, the proposed model uses Question Answer system, Question Answer generator, text similarities and only true labeled datasets for training.

The goal of this study has been tested between 9 testing conditions. Comparison between closed-domain, and open-domain question answer systems, scientific dataset and SNS, News dataset, and choosing the highest semantic similarity or the highest three candidate answers for voting.

The top accuracy among all testing conditions was 76% that used aggregated dataset of scientific, SNS and news datasets for Open-domain question answering system with voting the top three candidate answers, outperforming the highest accuracy from closed-domain using scientific dataset by over 16%.

From the analysis of words the model has predicted the words including “patients”, “vaccine”, “immune”, “prevent”, on the other hand, questions including words like “5g”, “medicine”, “hydrochloroquine (hydroxychloroquine)”, “towers” were not predicted properly. For the word “cure”, it was in both sides with almost the most frequent words in the questions. The question including “cure” was predicted properly 20 times, whereas it was wrongly answered for 7 times showing 74% of correct answering rate.

There are several limitations that can improve the result of this model. First of all, the scarcity of computing resource is one of the main problems. This led to using the text summarization to reduce the size of the dataset, even abstract is an abbreviated essential information of the article, still it is not as precise as it compared to the full paper. If there were enough computing resources, it would have been able to use the full published articles of COVID-19.

Secondly, unlike other fields of study, COVID-19 is a new subject that has only been around a year that lacks various dataset, such as formatted question and answer datasets that are verified to predict with high accuracy.

Thirdly, since this was a binary classification with one boundary of determining true or false, we do not know the degree of how much is true or how much is

fake. If it was labeled in much precise standard, there could have been more possibility to improve the model.

Finally, creating a new word-embedding model specialized to COVID-19 would improve the model by having accurate vectors, that leads to more accurate text similarity calculation to determine true or false of the data.

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The present and future of the electric vehicle battery market

Jung Seung Lee^a, and Hye Jin Kim^b

^a Associate Professor, School of Business, Hoseo University

12, Hoseodae-gil, Dongnam-gu, Cheonan-si, Chungcheongnam-do, Republic of Korea 31066

Tel: +82-41-560-8361, E-mail: jslee@hoseo.edu

^b Doctoral Candidate, Department of Business Administration, Hoseo University

12, Hoseodae-gil, Dongnam-gu, Cheonan-si, Chungcheongnam-do, Republic of Korea 31066

E-mail: kimssam115@naver.com

Abstract

Interest in the future of the battery market is growing as Tesla announces plans to increase production of electric vehicles and to produce batteries. Tesla announced an action plan to reduce battery prices by 56% through 'Battery Day', which included expansion of factories to internalize batteries and improvement of materials and production technology. In the trend of automobile electrification, the expansion of the battery market, which accounts for 40% of the cost of electric vehicles, is inevitable, and the size of the electric vehicle battery market in 2026 is expected to increase more than five times compared to 2016.

With the development of materials and process technology, the energy density of electric vehicle batteries is increasing while the price is decreasing. Soon, electric vehicles and internal combustion locomotives are expected to compete on the same line. Recently, the mileage of electric vehicles is approaching that of an internal combustion locomotive due to the installation of high-capacity batteries. In the EV battery market, Korean, Chinese and Japanese companies are fiercely competing. Based on market share in the first half of 2020, LG Chem, CATL, and Panasonic are leading the EV battery supply, and the top 10 companies included 3 Korean

companies, 5 Chinese companies, and 2 Japanese companies.

All-solid, lithium-sulfur, sodium-ion, and lithium air batteries are being discussed as the next-generation batteries after lithium-ion, among which all-solid-state batteries are the most active. All-solid-state batteries can dramatically improve stability and charging speed by using a solid electrolyte, and are excellent in terms of technology readiness level (TRL) among various technology alternatives. In order to increase the competitiveness of the battery industry in the future, efforts to increase the productivity and economy of electric vehicle batteries are also required along with the development of next-generation battery technology.

Keywords:

Battery industry, Electric vehicles, Lithium-ion battery, Next-generation battery technology, Case study

1. Introduction

Interest in the future of the battery market is increasing as Tesla recently announced an action plan for increasing the production of electric vehicles and self-production of batteries. Tesla's CEO Elon Musk

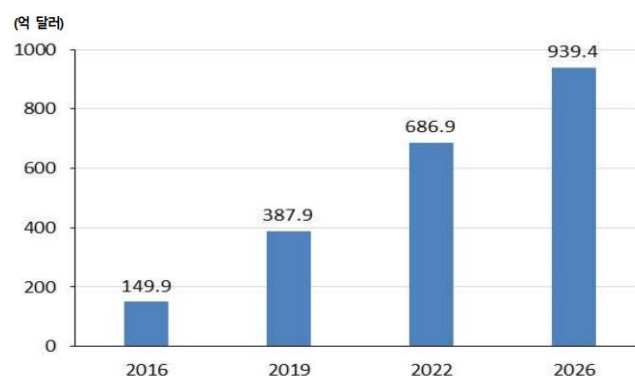
announced at the 'Battery Day' event held in September 2020 that he would cut battery prices by 56% and bring a \$25,000 electric vehicle to the market by 2022. Tesla has announced that it will maintain its sales target of 500,000 units this year despite the aftermath of the coronavirus, and has pledged to secure production capacity of 500,000 units in Fremont, USA, 250,000 units in Shanghai, China, and 80,000 units in Berlin, Germany in 2021.

Tesla expressed its will to internalize batteries by acquiring and producing battery materials and battery pack-related companies, and is expected to spark a chicken game in the battery industry in the future. It seems that it is trying to transform from a differentiated strategy of performance and technology superiority to a cost advantage strategy by reducing the cost of 56%, reducing design and process by 32%, and releasing a public car worth 25,000 dollars. If the target value of 56% reduction is applied to the battery pack price of \$156/kWh in 2019, it is \$70/kWh, but there is a point that the gap is significant from the industry analysis of \$100/kWh.

2. Research Method

2.1 Lithium-ion battery-based electric vehicle case

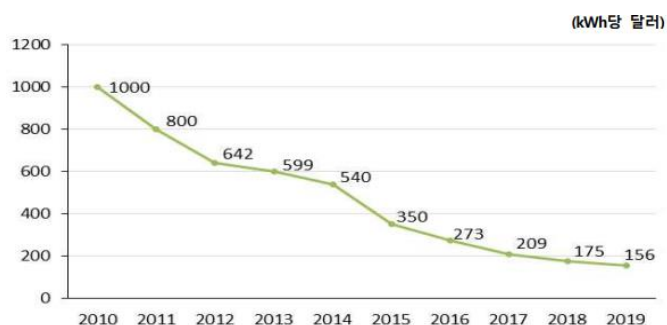
With rapid progress in automobile electrification, the expansion of the battery industry, which accounts for about 40% of electric vehicle costs, is inevitable. According to environmental regulations, the proportion of electric vehicles (BEV, PHEV) and hybrid vehicles (HEV) is increasing, and the capacity of batteries installed in one electric vehicle is also increasing to increase the mileage. For example, the battery of the first generation of Nissan Leaf, the first mass-produced electric vehicle, was 24 kWh, but then gradually expanded to 40 kWh and 60 kWh. The global electric vehicle battery market has more than doubled from \$15 billion in 2016 to \$38.8 billion in 2019, and is expected to reach \$93.9 billion in 2026, a 526.7% increase from 2016.



<Figure 1. Global electric vehicle battery market size>⁴

With the development of battery materials and process technology, energy density increases and prices decrease. Soon, electric vehicles and internal combustion locomotives are expected to compete on the same line. As high-capacity batteries with increased energy density are installed, electric vehicle mileage is approaching that of internal combustion locomotives. The energy density of lithium-ion battery cells has improved from 130Wh/L in 2013 to 800Wh/L now (US DOE). Electric vehicle mileage reached 647 km, the level of an internal combustion engine vehicle from 134 km in 2016 (Tesla). The Tesla Model S Long Range Plus improved its mileage to 402 miles (647 km, EPA standard) with an update in June 2020. The price parity of an internal combustion locomotive is gradually becoming a reality due to the decline in the price of electric vehicle batteries. The average price of an electric vehicle lithium-ion battery pack has fallen from \$1000/kWh in 2010 to \$156/kWh in 2019, and is expected to fall below \$100/kWh around 2024, which will be similar to the maintenance cost of an internal combustion engine vehicle.

⁴ Source: Staista, 'Global Electric Vehicle Battery Market'



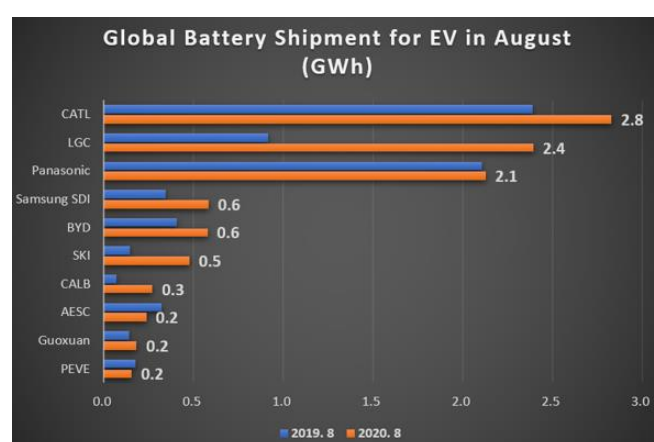
<Figure 2. Annual average price of electric vehicle battery packs>⁵

2.2 Electric vehicle battery company case

Currently, in the electric vehicle battery market, Korean, Chinese, and Japanese companies are fiercely competing. Based on market share in the first half of 2020, LG Chem, CATL, and Panasonic are leading the EV battery supply, and the top 10 companies included 3 Korean companies, 5 Chinese companies, and 2 Japanese companies. In Korea, LG Chem (No. 1), Samsung SDI (No. 4), and SK Innovation (No. 6) accounted for a combined 34.5%, and in China, CATL (No. 2), BYD (No. 5), and AESC (7). 5 companies, including above) and CALB (9th), accounted for a combined 36.8%, and in Japan, two companies, Panasonic (3rd) and PEVE (8th), took a combined 22.5%. Despite the corona 19 pandemic, three Korean companies, including LG Chem, are doing their best by raising their market share from LG Chem to 24.6% from 10.4%, Samsung SDI from 3.4% to 6.0%, and SK Innovation from 1.8% to 3.9%.

Korea, which has secured competitiveness led by large corporations, China, which enhances competitiveness through state-led investment, and Japan, based on the technology tradition in the rechargeable battery field, have similar competitiveness. Similar to the case of semiconductors, Korea has secured competitiveness through technology development and investment centered on conglomerates, while China, a latecomer, is improving its competitiveness thanks to state-led

investment and growth in domestic electric vehicle sales. China accounts for 82% of the world's distribution of cobalt, a core material for electric vehicle batteries, and 59% of the world's distribution of lithium. Since 2005, it has been receiving full support from the country by investing in resources in Africa and South America to secure raw materials. Japan has the first commercialization and long-term delivery of lithium-ion batteries leading to Sanyo-Panasonic, but its market share has declined somewhat as Japanese automakers focus on hybrid vehicles over electric vehicles.



<Figure 3. Electric vehicle battery market share comparison (August 2020 vs. August 2019)>⁶

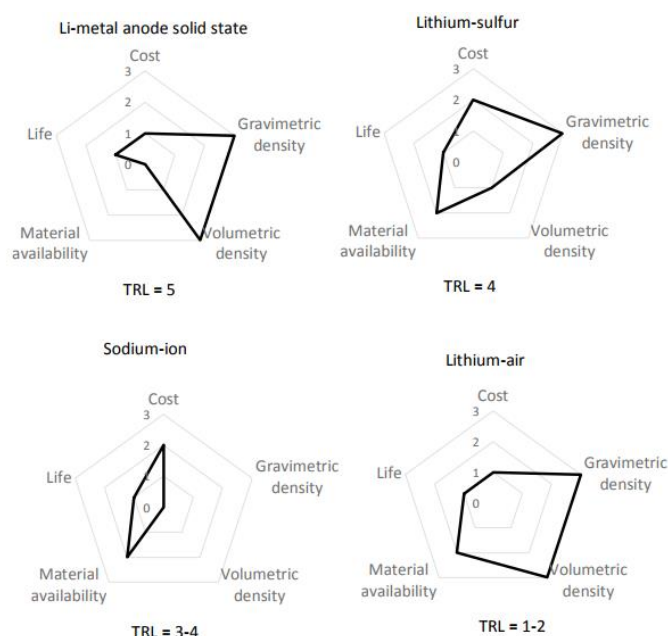
2.3 Next-generation electric vehicle battery case

All-solid, lithium-sulfur, sodium-ion, and lithium air batteries are being discussed as the next-generation batteries after lithium-ion, among which all-solid-state batteries are the most active. In the all-solid-state battery, research is underway to improve stability and increase charging speed by replacing the liquid electrolyte and separator filled with a solid electrolyte layer to transfer lithium ions between the positive and negative electrodes of the existing lithium-ion battery. Sodium-ion batteries use low-cost sodium to lower manufacturing costs and ensure safety and long-term durability, so research is being conducted mainly on mid- to large-sized battery applications such as energy

⁵ Source: Bloomberg New Energy Finance (BNEF)

⁶ Source: SNE Research

storage systems (ESS). Lithium-sulfur batteries are batteries that use sulfur as a positive electrode material and lithium as a negative electrode material. In theory, they can realize higher energy density than lithium-ion batteries, and research to increase stability and lifespan is underway.



<Figure 3. Comparison of next-generation battery technologies>⁷

Among various technology alternatives, all-solid-state batteries currently occupy a relative advantage in technology readiness level (TRL).⁸ TRL was defined on the IEA's innovation gap site (<https://www.iea.org/reports/innovation-gaps>). All solid batteries have very good weight density and volume density compared to lithium-ion batteries, and are mainly for Toyota. As a result of continuous research and development, the TRL level is relatively high. All-solid-state batteries are proposed by Toyota for mass production in 2025 and commercialization by

Samsung SDI in 2027. After mass production, it will take some time to secure economic feasibility at the level of lithium-ion batteries.

4. Conclusion

In order to increase the competitiveness of the battery industry in the future, efforts to increase the productivity and economy of electric vehicle batteries are also required along with the development of next-generation battery technology. It is necessary to accumulate mass production know-how, such as reducing the price of electric vehicle battery materials, improving production efficiency, and improving yield, and to achieve economies of scale. It is also important to make technological efforts to reduce the share of cobalt, which is unstable in production, among lithium-ion battery materials. Domestic battery makers are trying to reduce the proportion of cobalt, such as mass production of NCM712 (LG), NCM811 (SK) and NCA (Samsung). Chinese companies such as CATL are also putting their efforts into lithium iron phosphate (LFP, LiFePO) batteries that do not use cobalt, and are trying to increase the price competitiveness of electric vehicles through this. LFP batteries have been mainly installed in electric buses for a long time due to problems such as low energy density and poor yield despite their long life and high stability, but recently, the low production cost has been highlighted as a weapon.

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⁸ Gravimetric density: Weight density, Volumetric density: Volume density, Material availability: Raw material availability. Numbers are superior to lithium-

ion batteries, meaning 0 = inferior, 1 = similar, 2 = excellent, 3 = very good.

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Smart, sustainable and resilient (SSR) healthcare supply chain: A Fuzzy-AHP Approach

Md Kamal Hossain^a and Dr. Vikas Thakur^b

^a*School of Management, National Institute of Technology Rourkela, India 769008, Tel: +91-6294997929, Email: 518sm2001@nitrikl.ac.in*

^b*School of Management, National Institute of Technology Rourkela, India 769008, Tel: +91-6612462807, Email: thakurv@nitrikl.ac.in*

Abstract

The smart, sustainable and resilient (SSR) in healthcare supply chain (HCSC) has been considered as a crucial element in the healthcare industry. However, the existing practices and processes are facing many challenges in the real world scenarios along with the absence of a very few studies in SSR in HCSC. The present study aims to analyze the drivers of implementing SSR in HCSC in the Indian context. The method of fuzzy-Analytical Hierarchy Process (AHP) has been implemented to prioritize the identified factors and subsequently ranking them. The study has found process coordination and integration, flexibilities in HCSC and HCSC information system to be some of the most prioritized factors of implementing SSR in HCSC. Policy makers can make the best of the highly prioritized factors and improve on

the least prioritized one to suit the organizational need. The implications and conclusion has been highlighted in the present study.

Keywords: Smart, Sustainable and Resilient (SSR); Healthcare Supply Chain (HCSC); Fuzzy-Analytic Hierarchy Process (AHP); Coordination and Integration

1. Introduction

The implementation of the contemporary information and communication solutions has aggravated the problems of inefficient practices urging for the implementation of highly advance and innovative technological solutions (Jayaraman et al., 2019). Thus to counter the shortcomings of the contemporary information and communication technologies, the fourth

industrial revolution called as the industry 4.0 can be implemented to achieve innovation for the increased HCSC efficiency (Javaid and Haleem, 2019). The concept of industry 4.0 was first established in Germany in 2011 and since then some countries such as the USA, Japan and China have appropriately applied it in their own plan to revolutionize industries (Gunasekaran and Ngai, 2004; Ding, 2018). Industry 4.0 constitutes of four important components, namely, Internet of Things (IoT), Cyber-physical Systems (CPS), Internet of Services (IoS) and Smart Factory (Hermann et al., 2016). The IoT consists of inter-connected physical objects that are enabled using Radio-frequency Identification (RFID), wireless networks and cloud computing (Trappey et al., 2017). CPS constitute the integration of physical and cyber networks to render more transparent and efficient actions (Zhong et al., 2017). The concept of smart factory involves instituting of robots to automate the processes (Waibel et al., 2017) and cloud computing facilitates recording of all the details being developed across the supply chain through the scanning of bar codes, QR codes and RFID tags (Kache and Seuring, 2017; Alloghani et al., 2018). Hence, industry 4.0 would facilitate the HCSC to perform various integrated and

productive functions to solve various problems multi-dynamic approaches in the HC industry such as: enhanced productivity, quality improvements, improved accuracy and efficiency, managing HCSC data efficiently and an improved information system (Javaid and Haleem, 2019). In carrying out the study very little research works have been carried out providing a window of opportunities to fill the literature and policy gaps in implementing industry 4.0 for designing smart and sustainable HCSC. Hence, the purpose of the current study is to identify and analyze the drivers of implementing the smart, sustainable and resilient (SSR) HCSC. In relation to the pursuance of the study, the following research questions have been developed:

1. What are the crucial drivers of implementing SSR HCSC?
2. How are the selected drivers of implementing SSR HCSC have been analyzed?
3. What are important practical managerial implications of the study?

Based on the above research questions, the following objectives of the study have been derived:

1. To identify the important drivers of implementing SSR HCSC through

literature support and experts' opinions.

2. The selected factors have been processed and prioritized by implementing the fuzzy-Analytic Hierarchy Process (AHP).

3. The practical managerial implications have been highlighted to facilitate implementing the prioritized drivers of implementing SSR HCSC.

The present study proceeds firstly, by identifying the various drivers of implementing SSR HCSC through literature review and experts' support. The experts were consulted to finalize the drivers. The experts consulted include: HCSC experts, procurement officers, medical doctors and hospital managers. The rest of the paper has been carried out by the following ways: Section 2 covers the literature review, Section 3 discusses the solution methodology, Section 4 highlights the application of the methodology, and Section 5 covers results and discussions. Finally, Section 6 highlighted the practical managerial implications and conclusion of the study has been developed in Section 7.

2. Literature Review

In the HCSC, mass customization, shorter lead time and other issues cannot be solved with the existing practices and require incorporating SSR techniques. The technologies of industry 4.0 enables safety, conforming standards and increased information management (Javaid and Haleem, 2019). Implementing industry 4.0 would revolutionize the entire HCSC through the integration of the physical and the virtual realm involving people as well as things (Kagermann, 2015). The big data and advanced analytics perform a crucial role in implementing SSR in the HCSC (Waller and Faucett, 2013).

Some of the research studies of implementing industry 4.0 in HCSC have been conducted to highlight the technical basis and implications in the HC industry (Waibel et al., 2017). The implementation of smart technologies in the manufacturing sector have given birth to the evolution of industry 4.0 helps to decentralize business process (Wiengarten and Longoni, 2015). In order to realize the application of industry 4.0 in the HCSC, process integration is required to achieve expected performances that demands coordination of various stakeholders across the entire supply chain (Gunasekaran and Ngai 2004). Besides, HCSC flexibilities enabled through stakeholder's collaboration is required to

enhance the performance and responsiveness of the supply chain for an effective HC services.

Table 1: The drivers of implementing SSR in the HCSC

Sl. No.	Drivers	References
1.	Coordinating and integrating of processes in the HCSC (HCSC1)	Kowalski (2009); Kagermann (2015); Waibel et al. (2017)
2.	Maintaining HCSC flexibilities (HCSC2)	McKone-Sweet et al. (2005); Wiengarten and Longoni (2015)
3.	HCSC information system (HCSC3)	Datta (2017); Waibel et al. (2017)
4.	HCSC agility and resilience (HCSC4)	Altay et al. (2018); Singh (2019)
5.	Implementing IoT in HCSC (HCSC5)	Gunasekaran and Ngai (2004);

		Jayaraman et al. (2019)
6.	Use of RFID tags (HCSC6)	Kache and Seuring (2017); Hossain and Thakur (2020)
7.	Promoting e-Health services (HCSC7)	Rahmani et al. (2018); Rotich (2018)
8.	Lean HCSC practices (HCSC8)	Hossain and Thakur (2020); Singh (2019)
9.	Adequate HCSC knowledge (HCSC9)	McKone-Sweet et al. (2005); Kasthuri (2018); Lasi et al. (2014)
10.	Managing HCSC quality standards (HCSC10)	Hossain and Thakur (2020); Zhong et al. (2017)
11.	Equitable HC accessibilities (HCSC11)	Kasthuri (2018); Singh (2019)

12.	Infrastructural development supporting cyber-physical systems and smart factories(HCSC12)	Hermann et al. (2016); Zhong et al. (2017)
13.	Investment in HCSC R&D (HCSC13)	Hossain and Thakur (2020); Alloghani et al. (2018)

delivery (Datta 2017). The presence of HCSC viability that is agility and resilience is a critical to implement SSR that enhances required operational performances (Altay et al., 2018). To enhance the HCSC performances, implementing SSR would be considered as a value driven strategy to revolutionize the entire supply chain processes (Kache and Seuring, 2017).

2.1. Literature on solution methodology perspective

The methodology of fuzzy-AHP has been implemented in the study to prioritize the selected drivers of implementing SSR in HCSC. In order to prioritize the drivers, experts were consulted for pair-wise comparison of the drivers. Fuzzy-AHP is an improvement of the simple AHP. Due to the

presence of the inconclusiveness and the biasedness of human judgements in the AHP method, the concept of fuzzy has been integrated to form the methodology of fuzzy-AHP (Hossain and Thakur, 2020). The various studies have been conducted implementing the methodology of fuzzy-AHP. Thakur and Ramesh (2017) have implemented the fuzzy-AHP to sort out complex problems.

3. The Solution methodology

The present study has considered the implementation of fuzzy-AHP to prioritize the drivers of implementing SSR in HCSC. The method of fuzzy-AHP is an improvement of AHP as given by Prof. T. L. Saaty in 1990. The step wise process of calculation using fuzzy-AHP is as follows:

Step 1: Identify the critical drivers of implementing SSR HCSC.

The factors have been identified and finalized through the consultation with experts and support from the existing relevant literatures.

Step 2: Recording experts' inputs on the pairwise-comparison of the drivers of implementing SSR HCSC.

The experts were advised to rate the drivers on the basis of a five-point linguistic scale (shown in Table 2) and subsequently their inputs have been recorded.

Table 2: Fuzzy linguistic variables for pairwise comparison of the factors of SSR in the HCSC

Linguistic Variables	TFN	Inverse TFN
Equally preferred ($\tilde{1}/\tilde{1}^{-1}$)	(1, 1, 3)	(1/3, 1, 1)
Weakly preferred ($\tilde{3}/\tilde{3}^{-1}$)	(1, 3, 5)	(1/5, 1/3, 1)
Strongly preferred ($\tilde{5}/\tilde{5}^{-1}$)	(3, 5, 7)	(1/7, 1/5, 1/3)
Very strongly preferred ($\tilde{7}/\tilde{7}^{-1}$)	(5, 7, 9)	(1/9, 1/7, 1/5)
Extremely preferred ($\tilde{9}/\tilde{9}^{-1}$)	(7, 9, 9)	(1/9, 1/9, 1/7)

The pair-wise comparison of the drivers can be developed in the form as given in Eqn. (1)

$$\tilde{Z} = \begin{bmatrix} 1 & \tilde{a}_{12} & \cdots & \tilde{a}_{1n} \\ \tilde{a}_{21} & 1 & \cdots & \tilde{a}_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ \tilde{a}_{n1} & \tilde{a}_{n2} & \cdots & 1 \end{bmatrix} = \begin{bmatrix} 1 & \tilde{a}_{12} & \cdots & \tilde{a}_{1n} \\ 1/\tilde{a}_{21} & 1 & \cdots & \tilde{a}_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ 1/\tilde{a}_{n1} & 1/\tilde{a}_{n2} & \cdots & 1 \end{bmatrix} \quad (1)$$

Where $\tilde{X}$ is the individual bran-storming session.

Step 3: The linguistic variables were converted into Triangular Fuzzy Numbers (TFN).

After recording inputs from experts, the linguistic variables were converted into TFNs using the Eqn. (2).

$$\tilde{a}_{12}^k = \frac{\sum_{k=1}^k \tilde{a}_{ij}^k}{3} \quad (2)$$

Step 4: Calculating the fuzzy geometric mean using the Eqn. (3).

$$\tilde{f}_m = \tilde{a}_{m1} \otimes \tilde{a}_{m2} \otimes \cdots \otimes \tilde{a}_{mn}^{1/n} \quad (3)$$

Where, $\tilde{f}_m$ is fuzzy geometric mean and $\tilde{a}_{mn}$ pair-wise comparison value.

Step 5: Calculation of the fuzzy weight using the Eqn. (4).

$$\tilde{v}_m = \tilde{f}_m \otimes (\tilde{v}_1 \oplus \tilde{v}_2 \oplus \cdots \oplus \tilde{v}_n)^{-1} \quad (4)$$

Step 6: Defuzzifying the TFNs into crisp values by the center of area (COA) method using Eqn. (5)

$$\text{Center of Area } \tilde{v}_m = \frac{(lv_m, mv_m, uv_m)}{3} \quad (5)$$

Step 7: Normalizing the crisp values using the Eqn. (6) to identify the relative weight of the drivers of implementing industry 4.0 in HCSC.

$$N_m = \frac{v_m}{\sum_{m=1}^n v_m} \quad (6)$$

4. Application of the solution methodology

Table 3: Fuzzy geometric mean value of the drivers of SSR in the HCSC

2.50	3.86	5.51
1.42	1.94	3.21
0.82	1.10	2.16
0.78	1.09	1.89
0.86	1.25	2.02
0.64	0.99	1.64
0.53	0.80	1.32
0.46	0.73	1.10
0.59	0.93	1.40
0.34	0.54	0.82
0.24	0.37	0.56
0.67	1.31	1.59
0.33	0.64	0.84

In the present study, data have been collected from experts having relevant experiences and were analyzed using the fuzzy-AHP method. Initially, the drivers of SSR in HCSC have been compared pairwise by the experts and a fuzzy geometric mean matrix have been developed as shown in Table 3.

After the fuzzy geometric values were calculated, defuzzified weights of the drivers have been calculated. Since, the sum of the defuzzified weights have been found to be greater than 1, normalized weights have been calculated. Finally, the ranks have been developed for the drivers from the normalized weights (shown in Table 4).

Table 4: Normalized weight of the drivers of SSR in the HCSC and their rankings

Drivers	Normalized weights	Rank
Coordinating and integrating of processes in the HCSC (HCSC1)	0.236	1
Maintaining HCSC flexibilities (HCSC2)	0.132	2

HCSC information system (HCSC3)	0.084	3
HCSC agility and resilience (HCSC4)	0.076	5
Implementing IoT in HCSC (HCSC5)	0.083	4
The widespread use of RFID tags (HCSC6)	0.066	7
Promoting e-Health services (HCSC7)	0.054	9
Lean HCSC practices (HCSC8)	0.046	10
Adequate HCSC knowledge (HCSC9)	0.059	8

5. Results and Discussions

The analysis of the study using the fuzzy-AHP has found that ‘Coordinating and integrating of processes in the HCSC’ is the most prioritized drivers of implementing SSR to achieve the desired HC performances and responsiveness (Datta 2017). The drivers of “maintaining HCSC flexibilities” and “HCSC information system” have attained the second and third rank in the prioritization respectively. Consecutively, “implementing IoT in HCSC”, “HCSC agility, resilience”,

Managing HCSC quality standards (HCSC10)	0.034	12
Equitable HC accessibilities (HCSC11)	0.023	13
Infrastructural development supporting cyber-physical systems and smart factories (HCSC12)	0.071	6
Investment in HCSC R&D (HCSC13)	0.036	11

“infrastructural development supporting cyber-physical systems and smart factories”, and “the use of RFID tags” have been ranked fourth, fifth, sixth, and seventh respectively. IoT and cyber-physical systems in HCSC is needed to transform the physical processes into virtualized services (Hermann et al. (2016); Zhong et al. (2017). In order to improve the operational performances of the HCSC, viability in the form of agility and resilience is necessary (Singh, 2019). The drivers, namely, “adequate HCSC

knowledge”, “promoting e-Health services”, “lean HCSC practices”, “investment in HCSC R&D, “managing HCSC quality standards”, and “equitable HC accessibilities” have attained eight, ninth, tenth, eleventh, twelfth, and thirteenth respectively. Limited HCSC knowledge has been an impediment factors and capitalization should be made to enhance the skill set up of the workers (McKone-Sweet et al. (2005). The lean HCSC practices are required to reduce wastage of the limited HC resources and enhance the quality of services at the same time so that much attention can be paid toward providing medical accessibilities to as much population as possible (Kasthuri, 2018; Hossain and Thakur, 2020). The HCSC research and development requires considerable amount investment to enhance the efficiency of delivering HC services (Rahmani et al., 2018; Rotich, 2018) and mainstreaming the e-health services into the realm of the physical HC delivery would alleviate the existing burdening on the HC industry (Gunasekaran and Ngai, 2004; Jayaraman et al., 2019).

6. Implications of the Study

The present research bears important insights for the selected drivers of implementing SSR

in HCSC. The results of the study have been discussed with the experts and the following implications are developed:

- (1) The highly prioritized drivers should be patronized and implemented on priority basis whereas, the less prioritized drivers should be controlled and enhanced to raise their performance levels.
- (2) HC managers should exert much emphasis on coordination and integration of HCSC processes to enhances performance of HC delivery.
- (3) Managers should consider the drivers of IoT, cyber-physical systems, internet of services and smart factory applications into HCSC to drive the implementation of SSR concepts.
- (4) Much of the emphasis should be paid towards mainstreaming the e-health services into the physical real of HC delivery.

7. Conclusion of the Study

The implementation of the concept of SSR in the HCSC can be considered as a paradigm shift in the HC industry. The implementation of the highly prioritized factors of the present study, namely, process coordination and

integration, HCSC flexibilities, CPS, IoT, and RFID can initiate the functioning of a highly cohesive and a responsive HCSC. The implementation of these drivers can lead to an enhanced transparency in the supply chain processes. Executing SSR at the organizational level in the HC industry would facilitate process improvements and subsequently, enhances the performance through the enabling technologies. The promotion of digitalization and automation through implementation of SSR in HCSC would result in problem solving by technical and analytical capabilities to enhance the efficiency at the level of supply chain processes.

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Can e-learning enhance the maximum access to education and quality in a developing country: with special reference to Nepal.

Sateesh Kumar Ojha and Jagadish Chandra Wagle
Lincoln University College, Malaysia

Abstract

This article reviews the concepts and benefits of e-learning over traditional teaching based on physical proximity. It discusses how the education system of developing countries like Nepal, which is characterized by physically and socially divided civilians, can be benefitted with the help of ICT inhibited eLearning. Also discusses its status from the perception of education administrators and managers running online education during COVID 19 and how this system can ensure access and quality in education.

Keywords: e-learning, education system, curriculum, delivery of education

Statement of the problem

One of the main problems of any country how to develop it with the maximum contributions of its citizens. One of the main components for the prosperousness of any country is the level of education and types of being provided to the people of the country. The development principle states that people's development is the root of every development in any society, community, and country. Each people living in the country is expected to maximum productivity so that country can generate maximum productivity. This is possible only when each citizen has access to education according to their interest and intelligence (Howard Gardener multiple intelligence theory, 1983). There are numerous problems as to the access of all to education: topological structure of the country, government policy regarding

free and compulsory, the proximity of education institution, availability of interesting subjects, etc. This research is done to discuss how ICT can be used to maximize the access of the students with enhanced quality.

Objective

The objective of the study is to assess the existing online education practices and explore a model of education system indicating how ICT be intervened in the national education system of the country so that maximum access and quality in education by the individual possible.

Literature review

e-learning

D. R. Garrison & T. Anderson: E-Learning in the 21st Century "unique ability to bring together a community of learners, unrestricted by time or place". The main actors of the societies are researchers, academicians, and social workers, who have been endeavoring to selecting and giving education looking at the issue of development of society and advocating the education system helps to his direction. The root of social development is educational input that comes from the interaction of these actors. Social workers state education is the right of every individual, if this right of an individual is preserved and executed then every human being becomes able to give a full contribution from his developed abilities. The researchers continuously searching the best way of teaching with the emphasis on how a learner learns best and the

educationist [professors, teachers] are the people who are actively involved in teaching directly or indirectly with the focus on how to help the learners so that best learning by him/her is possible. The learners are the people who are learning according to the interest and ability with the intentions that they will contribute to the society for its development. Among these actors, two processes come directly in the field of teaching and learning, ie teaching process and the learning process [1,2,3,4,5].

How fast society can develop depend upon how often the interaction between them takes up. And how they make interact depends on how they think, how they share the knowledge and skill, and how they act with which resource they act. As these are the issues of how these people are being facilitated with the information, so this era is known as the information era with the realization of informational need and tools and techniques that help to fulfill the information need [6,7,8].

The course of development of tools and techniques took some significant shift to the virtual world from the physical world. This is shortening the needed time for teaching and learning significantly. The time one needs to reach the physical location was different for individuals, now changed and discrimination of it has reduced significantly to zero. Similarly, the differences in quality of education due to quality of teaching and teaching abilities from facilitators were also decreased and can be reduced to zero. It is because an instructor with the highest teaching ability can be used by the institutions to deliver his teaching uniformly to all sectors.

A large number of studies, these days, have consensus in one thing that there are two modes of teaching, one is conventional teaching for which physical proximity of actors and facilities are deemed to be

necessary. Another mode distance learning mode where the needs of physical facilities in teaching and learning like institutional buildings, the physical presence of teacher and students, physical libraries, physically made instructional materials, etc. have been replaced by intangibles signals of wireless technologies. A small portable device can be sufficient for the learners and teachers to resolve all types of barriers and bring efficiency in teaching and learning which were not possible in the past [9,10]. Often this is termed e-learning.

Research has concluded that people liked to learn from CD more than books when CD was introduced [11]. Another research compared the learning of e-learning from traditional learning and found that e-learning is 20% to 30% more efficient [12]. Similar another study found that 94 percent of distance learners expressed that they learned more through the distance mode than the trainee who was involved in the traditional model [13]. Why e-learning is better than traditional learning in the context of learning the facts more, researchers found that in e-learning, learners themselves take the responsibility of learning so go to the depth of subjects and problems and builds knowledge to make it meaningful [14-16].

In e-learning, learners have their own pace of learning, schedule, and contents so whenever they are in the mood and feel easy, they read. So, if they feel more responsibility to read and learn they do more [17].

Two important things in learning are freedom of learners and self-determination of learners [15]. These are available in distance learning because learners are freed from the movement of travel, and rigid schedules and learning is done with the help of technology being separated from teachers. [18].

There is evidence of the effectiveness of e-learning in research done with the learners of 100 miles away and 40 years or over, as there were found a positive correlation between satisfaction of learning and ease of application of learning [19].

Researches have suggested using e-learning according to the demands of higher education by providing adequate infrastructure and education design that suits the virtual environment [23].

Now many of the benefits of e-learning, realized by the researchers are: acquiring basic skills, increased training time, support for students with disabilities, expanding access, improving quality of teaching and learning, increasing speed, skill development, saving natural resources needed at macro level [20]. Many of the largest universities have started e-learning systems as their alternative provisions and converted themselves as universities running their education system from both modes [21].

Out of the many advantages, some advantages realized from e-learning are: learning at anytime, anywhere in any field without similar learning prerequisites, individual learning along with cooperative learning, determining the pace of learning process and according to individual needs, 50% savings in time, 60% savings in cost, the possibility of teaching and learning for all people, training and learning bilaterally, getting fast results in teaching and learning, learning by using multimedia features and conservation of resources and reduction of environmental and noise pollution. [23].

The disadvantage of e-learning is: it may not be able to replace the teacher, emotional human interaction, and face-to-face interaction that can be created in the classroom [22]. This method requires appropriate infrastructure and broadband

communications to transmit and receive data [5].

Education system

An education system consists of how learners, teachers, and administrators, interact with each other to impart education (knowledge, skill, and attitude) to the people. For learners, the system encompasses formal and informal systems. For the teachers, it encompasses varieties of techniques and strategies which are to be used according to the learner's ability, interest, and situation. Similarly, administrators formulate and enforce different policies based on the national priority, so that the learner will contribute to the organization and nation in terms of quality and productivity.

<https://tophat.com>, a blog devoting to education states an education system is a coordination of individuals (among teachers, administrators, and students), infrastructure (including safe facilities and transportation), and functioning institutions and processes. (<https://tophat.com/glossary/e/education-system/>)

Methodology

The methodology used in the study is descriptive based on a review of the literature and reflection derived from the 25 administrators running online education and trainings (including universities and different institutions). Based on the average opinion on some statements as given by them in the Likert's scale, 1 to 5 from strongly disagree to strongly agree, their confidence to run online education effectively was measured. Based on the average opinion of aggregate score the status is evaluated as whether there is doubt, or no-doubt to run online education regularly. And the researcher's own experiences on curriculum formulation and implementation is used to develop a model

how ICT is to be used. The interpretation focused on access to education and quality to education with the help of ICT uniformly in the country.

Models of delivery

It has developed a model of how an individual can be developed to their fullest potentials.

Table 1: level of educational delivery through ICT

Delivery of learning	Core subjects	Specific subjects
Central delivery	More on Knowledge of the country, government policy,	Less on Specific subjects required by the students based on/her interest and local needs
Field delivery	Less on Knowledge of the country, government policy	More on Specific subjects required by the students based on/her interest and local needs

Education Curriculum

Education in any nation is segregated by different programs and levels. For each level, there is a detailed plan for the instruction set by policy-makers, which is known as curriculum. There are three types of curriculum for an education program.

Nation oriented curriculum that a nation should impart to every individual to impart necessary information so that learner understands his country. Such courses can be history, geography, religious and cultural practices of the country.

The second type of curriculum will be the curriculum related to the field of interest of the learner. This can be logical, spatial, linguistic, musical, natural, interpersonal, intrapersonal, and kinesthetic. These things must be developed in a person from the local educational body.

The third type of curriculum is the specialized course that an individual should learn to have depth knowledge so that his delivery of service to the nation and mankind can be best. It must be the specific area of learners' interest and intelligence.

Table 2: Use of ICT in connection with curriculum types in a nation

Curriculum types and levels	Use of ICT for the learning process
Nation oriented curriculum [centralized curriculum system]	The central level authority will deliver to all the parts in a scheduled way. The provision of interaction can be made with the help of software
Curriculum-based on the interest of the learners [decentralized curriculum system]	Learning takes place when the individual takes a learning interest. His interest can be from his internal motivation or external motivation. His interest needs to be matched with intelligence which is

	called multiple intelligence theory. An individual can develop his full potential only when his intelligence and interest are matched. Local and social support is then used as per the needs.
The third level of curriculum to make on the best performer [decentralized curriculum system for developing the learner to outstanding performer]	When one goes deeper, then only his service becomes the excellent service in the society. Wide ranges of data and expert services can be essential for this level which can be provided by ICT, even such knowledge and skills should be brought abroad

Assumption of education regarding individual, community, and nation

1. Every individual is productive and, in some area, he/she is more productive
2. According to development psychologist like Gardener (1983) people are intelligence in 8 areas, but not in equal amount. These areas are:
 - Interpersonal intelligence
 - Intrapersonal intelligence
 - Kinesthetic intelligence
 - Linguistic-verbal intelligence
 - Mathematical intelligence
 - Musical intelligence
 - Naturalistic intelligence
 - Visual-spatial intelligence
3. An individual can contribute to the community and society more in

the area where he/she has more intelligence.

4. A country's total of development means the performance of each individual in a nation performed with the development of his/her potentialities, even if one individual is left to develop means the country's development lags to that level.

Functions of ICT towards education

1. Tracking the total number of people with their age, address, qualification, and intelligence
2. Developing programs and curriculum based on the potentialities [intelligence they have]
3. Developing central and field relation as to recognizing the individuals
4. Implementing the programs and furnishing database for each individual
5. Monitoring the programs supporting the programs to enhance their implementation
6. Involving a person in the job to society and recording it.
7. Maintaining regular conversation on how to improve the individual for the best performance

Prerequisites of e-Learning

A recent definition of e-learning by Koper is "can be defined as the use of information and communication technologies (ICTs) to facilitate and enhance learning and teaching" [24]

Better e-learning requires:

1. Well-equipped modern ICT instruments
2. Well trained staffs at the central who must lead from the central describing vision, mission, objectives, policy, etc. to the field staffs

3. A group of well-trained teachers and staffs at the field who can implement the policies designed from the center and report the center
4. ICT enhanced mechanism that can foster central field relation as to understand the individual's interest, aptitude, and intelligence
5. Application of a balanced approach on its design with educational psychology, distance education, education technology, and instructional design.

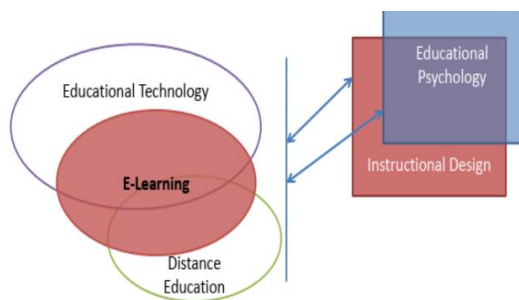


Figure 1: E learning components for effectiveness

Institutional confidence

The institutional confidence towards the online training system was found doubtful mostly. The summary is presented in the table below. The score is based on the interview with structured questions with administrators of Twenty-five organizations, during the lockdown period, including non-formal to fully formalized university organizations. training institutions to currently running online training institutions were asked whether doubt or not. The scales were 1 to 5 beginning from fully doubtful to implement to the surety to implement the online education. The remarks were as follows. The primary responsibility of the education department seems to strive towards developing administrators and changing their attitudes and readiness towards learning.

Fully doubtful= less than, doubtful= 2.5 to 3.75 and no doubt= 3.75 or above.

Table 3: Confidence level of institutions towards online training

Statements	Mean	Remarks
you are able to run computer programs or mobile apps for online education/ training.	3.75	No doubt
You think online teaching/training work is appropriate	3.00	Doubtful
You are satisfied with the student/trainee's class participation in education / training	2.75	Doubtful
There is adequate interaction between students/trainees during teaching/training	2.25	Doubtful
Adequate textbooks are available to students/trainees online?	2.75	
students/trainees understand the textbooks provided by the teacher/instructor online?	2.50	doubtful
Students/trainees can do homework and send for testing online	2.75	doubtful
you are satisfied with the homework done by the students/trainees?	2.00	Doubtful
Participation of students/trainees in any work done by the teacher/instructor in the class is satisfactory.	2.50	doubtful

You are satisfied with the evaluation of the online exam?	2.50	doubtful
Students/trainees can interact in writing with the teacher/instructor using the Nepali / English medium	2.75	doubtful
you are confident that students/trainees can learn enough from online teaching/training?	3.25	doubtful
you are satisfied with experimental learning through online means	3.00	doubtful
Exams conducted with students/trainees to evaluate online education are effective and reliable.	2.25	Doubtful
Students/trainees have been found to have maintained the dignity of the examination in the online examination	2.25	Doubtful

Discussion

How the use of ICT in education can be catalysts to solve the problem of access to education by the poor and quality in the education can be understood clearly in the instances of present crises of developing country like Nepal. These instances are discussed in the following paragraph.

A national daily Rising Nepal has published the educational status on Friday, 12 February 2021, about some Districts of Nepal, Manang, and Sindupalchowk. About Manang, it writes, In Manang, there are 28 schools in the district and 600 plus

students are studying in these schools. Children in the remote parts of the Manang district are deprived of school education for six months. Few children in areas with internet access have been studying online at home, the children without internet access are deprived of education, which is a matter of concern.

From development perspectives, many parts of the country are still remote. Quality education has not reached there. These regions are remote also because civil code provisions do not make any sense when it comes to sit together, eat together, walk together to school and eat lunch together with so-called 'untouchable' neighbors of the 'touchable' ones. Remote is not only a physical, geographical reality; it is a mental feeling and attitude. Another case comes from Humla, Jumla, and other remote districts, where the positions of schoolteachers are filled in by the teachers from the Terai and hill regions. First, a teacher from the hot plains would find it unacceptable to spend time in the areas upon the advent of the very cold season, particularly snowfall. Even after the melting of snow and opening of schools, teachers do not feel it their responsibility to report to the duty and move slowly up around. How would they complete the courses and prepare the students for promotion to higher grades?

Two-thirds of Nepal's population is illiterate; only 22% of the girls are literate. Schools in villages are grim with a high dropout rate. Schools don't have sufficient teachers; the ones they have are poorly trained, and schools lack educational materials. School-aged children migrate to urban areas to work as domestic servants or laborers. These situations could have been solved or minimized if timely ICT and e-learning were incepted and developed in the country.

Conclusion

Installation of ICT and inception of e-learning can be the cheapest and reliable means to make all people access to education by all people. It is only the education that touches everybody without discrimination in a developing country. Nepal is in the practice of e-learning and has to focus on it for better and quality education for all citizens.

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[25] Rising Nepal, 12 February 2021

The Impact of Knowledge Sharing on the Organizational Innovation among Private Universities in Malaysia

Ali Ameen*, Pradeep Bastola, Dhoha Younis, Neupane Chanda, Osama Isaac

Lincoln University College, Selangor, Malaysia

* Correspondence: ali.ameen@aol.com

Abstract

It has been observed that innovation in governance leads to many positive results. It helps in better utilization of resources and capacities and promotes a more open culture in the government which leads to good governance. The main objective of this study is to examine the impact of Knowledge Sharing on the Organizational Innovation within the educational organization in the private universities in Malaysia. This study has adopted questionnaires to collect data. PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilizing the software SmartPLS 3.0. Results reveal that Knowledge Sharing has a significant impact on the Organizational Innovation. Variance explained by this study was 32%. The results of the current study have the potential to give further insights into innovation of organizations strategies of the educational organization in the private universities.

Keywords: Knowledge development; knowledge sharing; learning access; organizational innovation

1. Introduction

Organizational Innovation creates a better image of the government which builds trust amongst its citizens. Another major advantage of innovation is that it has a domino effect wherein a successful innovation in one sector opens the doors for innovation in other sectors. One successful innovation leads to a series of innovations which leads to a favourable environment (A. A. A. Ameen & Ahmad, 2012; A. A. B. Ameen & Ahmad, 2013; A. Ameen, Al-Ali, Isaac, & Mohammed, 2020; A. Ameen, Alshamsi, Isaac, Gazem, & Mohammed, 2021). The idea of innovation is to seek opportunities in order to capitalize them to gain a competitive edge (Schumpeter & Elliott, 1934). The opportunity seeking and advantage seeking behaviours are the practical form of innovation

(Tidd & Bessant, 2014). The better understanding of knowledge allows an individual or education organizations to come up with better innovative ideas (Dewar & Dutton, 1986). The innovative ideas also need to practically survive and prosper in their environment as external environment of any educational organization is not static. The concept of innovation evolves therefore it has a better chance of survival in an external environment. Several studies show that the organizations that are capable of implementing innovative ideas are the most successful ones in the business (Calantone, Cavusgil, & Zhao, 2002). The innovative culture of the whole educational organization is very important as some organizations simply do not identify opportunities while others fail to capitalize those opportunities (SKerlavaja, Dimovskia, Mrvarb, & Pahora, 2010).

Simpson, Siguaw, & Enz (2006) suggest that continuous innovation can increase sustainability of a firm. The implementation of innovation within an educational organization is a difficult task as the whole educational organization needs to share same beliefs. It is important for an organization to first understand the concept of innovation before implementing it (Dombrowski et al., 2007), an innovative culture is the base of success of any firm or organization (Hamel, 1999). The organizations that are innovative have different properties than the ones that are less innovative (Subramanian & Nilakanta, 1996). Communication and collaboration are two of the most important components in an innovative workplace. It is imperative that the educational organization acquires services of talented individuals who can help the educational organization to gain a competitive edge. The collaborative innovation is important for any educational organization as it helps the employees to work with each other (De Long & Fahey, 2000)(Al-Obthani & Ameen, 2019b, 2019a; Albreiki, Ameen, & Bhaumik, 2019; Albreiki, Ameen, & Bhaumik, 2019; Alghawi,

Ameen, & Bhaumik, 2019; O. Alshamsi, Ameen, Isaac, Khalifa, & Bhumic, 2019; O. Alshamsi, Ameen, Nusari, et al., 2019; R. Alshamsi, Ameen, & Isaa, 2020; A. Ameen, Al-Ali, et al., 2020; A. Ameen, Alfalasi, Gazem, & Isaac, 2020). The collaboration helps the employees to capitalize on opportunities. The educational organization also needs to reward employees on their innovative work.

The research conducted by Easterby-Smith, Araujo, & Burgoyne (1999) pointed on the role of learning in the process of innovation along with identification of various levels on which an empirical investigation can be developed. While the relationship between the organization's learning & performance of innovation has been subject to conceptual evaluation in the literature concerning organizational innovation and learning, little or negligible research evidence was found with the phenomenon largely being under-examined (Bontis, 2002; Pérez López, Manuel Montes Peón, & José Vazquez Ordás, 2006; Saru, 2007; (Alkatheeri, Ameen, Isaac, Al-Shibami, & Nusari, 2020; Alkatheeri, Ameen, Isaac, Duraisamy, et al., 2020; Haddad et al., 2020). In addition, a limitation was observed in terms of the factor Knowledge Sharing and their effect on innovation at various levels. Therefore, the main problem statement for this research study is "To identify the factors or challenges which affect innovation in private universities".

2. Literature Review

2.1 Knowledge Sharing (KS)

In a broad sense, Knowledge Sharing is a business concept, which includes concerted, coordinated, and deliberate efforts to manage the organization's knowledge through the processes of creating, structuring, disseminating and applying it to enhance organizational performance and create value. The Knowledge Sharing strategy of an educational organization is predicated on shared learning, collaboration, and the sharing of knowledge (Holsapple & Singh, 2001; Liebowitz, 1999; Nonaka & Takeuchi, 1995; Quinn, Anderson, & Finkelstein, 1996; Rhodes, 1996)

An organization's knowledge is only as useful as its ability to be enhanced (Carneiro, 2000). Moreover, knowledge can increase in value over time (Carneiro, 2000) and the advantages that are brought forth by human capital can decrease over time as well (Cabralés, Pérez-Luño, & Valle, 2009). Working through innovation processes requires the harnessing of new acquired knowledge regarding the sub-processes put in place (Nonaka & Takeuchi, 1995; A. A. B. Ameen & Ahmad, 2013; A. Ameen & Ahmad, 2011, 2013, 2017; A. Ameen, Alfalasi, Gazem, & Isaac, 2020; A. Ameen et al., 2021; A. Ameen, Rahmah, et al., 2020). This means that incubating knowledge is an important factor to create innovative ideas and demonstrating them through a specific project. Knowledge-based absorptive capacity can point out the extent to which an enterprise can nurture this innovation.

Knowledge Sharing empirically connected to incremental as well as radical innovation (Darroch, 2005; Darroch & McNaughton, 2002). Awareness of an enterprise's human capital as well as providing opportunities for employees for sharing of information as well as communication are termed as key necessities that facilitate the management of knowledge (Prajogo & Ahmed, 2006). Some of the practices for knowledge-based human resources that encourage innovation can include appraisal and compensation practices (Cabralés et al., 2009), as well as providing new sources of knowledge and incentives that create new knowledge both in external as well as internal habitats (Mumford, 2000) fall under the scope of people management.

Hence, based on relevant practice, the adaptive of knowledge by employees and the resulting success and failure, add to the collaborative efforts of the team learning objective (Kolb, 1984). However, creating more mistakes can lead to more uncertainty and panic among employees (Courvisanos, 2012). Knowledge Sharing and its nurturing require stringent and robust assessment and evaluation of decisions and actions that can all be achieved through internal infrastructure. A hypothesis is therefore suggested:

H1: Knowledge Sharing has a positive effect on organizational innovation.

2.2 Organizational Innovation (OI)

Crossan & Apaydin (2010) defined innovation as the product of a deliberate and successful realization of a new idea that provides advantages to the firm. Moreover, it has a procedure from innovation as a result and recognizes three categorizations: process vs. product, radical vs. incremental, and technical vs. managerial

Numerous scholars and practitioners from varied fields have been showing increased interest in the innovation in the private universities (Borins, 2014; Brown & Osborne, 2013; Damanpour, Walker, & Avellaneda, 2009; Hartley, Sørensen, & Torfing, 2013; Osborne & Brown, 2011; Walker, 2014). There is growing endorsement in the belief that innovation can play a significant contributing role in improving the value of public services alongside also enhancing the problem-solving prowess of governmental outlets to tackle societal obstacles (Damanpour et al., 2009; Walker, Damanpour, & A. Devece, 2010). In many scenarios, private universities innovation has been lauded for spearheading reform movements like New Public Management (Hood, 1991; Llewellyn, 2009; Pollitt & Bouckaert, 2011), e-governance (Bekkers & Homburg, 2005), the makeover-shift from government towards governance (Rhodes, 1996), and, presently, talks pertaining to the (minimizing) participation of government in a 'Big Society' (Lowndes & Pratchett, 2012).

There are also a lot of factors which prove to be a hindrance to private universities innovations. Chief among them is the lack of adequate financial motivation and the other is the lack of genuine competitors. Probably the most important of the lot is the lack and deficiency of adequate resources. This includes not just financial investment but also the lack knowledge sharing and Knowledge Sharing. Innovation requires adequate personnel to being about the necessary changes. There is also a lack of the opportunity to make use of supporting services (Bloch, 2011).

3. Research Method

3.1 Overview of the Proposed Conceptual Framework

Isaksen & Tidd (2006) highlight innovation as being the ability of the enterprises to identify the new technologies and current trends and by studying them closely enough to exploit the knowledge and information from them to create new technologies and processes. This essentially highlights the importance of the Knowledge Sharing as being part of innovation (Lichtenthaler, 2013). In figure 1, the conceptual framework is depicting the relations suggested by this study based on the literature review.

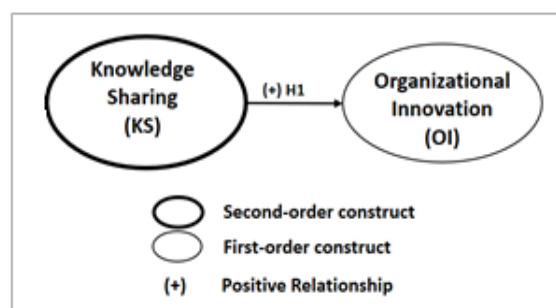


Figure 1: The conceptual framework

3.2. Development of Instrument and Data collection

This study has adopted questionnaires to collect data. It was divided into two sections, the first measuring six core constructs using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (please refer to Appendix A for the instruments), while the second covered the demographic profile of respondents, measured using a nominal or ordinal scale. PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilizing the software SmartPLS 3.0.

4. Data Analysis and Results

PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based)

was employed to assess the research model by utilizing the software SmartPLS 3.0 (Ringle, Wende, & Becker, 2015). Analyzing Data through the second-generation multivariate data analysis technique which is SEM offers a simultaneous analysis which leads to more accurate estimates (Osama Isaac, Abdullah, Ramayah, Mutahar, & Alrajawy, 2018; Osama Isaac, Abdullah, Ramayah, & Mutahar, 2018; A. Ameen & Ahmad, 2014; A. Ameen, Almari, & Isaac, 2019; A. Ameen, Almari, Isaac, & Mohammed, 2019; Isaac, Abdullah, Aldholay,

Ameen, & Ramayah, 2019; Sudhana, Ameen, & Isaac, 2020).

4.1 Measurement Model Assessment

The individual Cronbach's alpha, the composite reliability (CR), The average variance extracted (AVE), and the factor loadings exceeded the suggested value (Kline, 2010; Hair, Black, Babin, & Anderson, 2010) as illustrated in Table 1.

Table 1: Measurement model assessmen

Constructs	Item	Loading (> 0.7)	M	SD	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
Knowledge Sharing (KS)	KS1	0.879	3.657	1.024	0.922	0.942	0.763
	KS2	0.893					
	KS3	0.831					
	KS4	0.867					
	KS5	0.896					
Organizational Innovation (OI)	OI1	0.826	3.576	0.890	0.888	0.917	0.688
	OI2	0.862					
	OI3	0.860					
	OI4	0.858					
	OI5	0.734					

Note: M=Mean; SD=Standard Deviation, α = Cronbach's alpha; CR = Composite Reliability, AVE = Average Variance Extracted.

Key: KS: Knowledge Sharing, OI: Organizational Innovation.

The degree to which the articles distinguish among concepts or measure different constructs is demonstrated by discriminant validity. Fornell-Larcker was 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

Table 2: Fornell-Larcker criterion

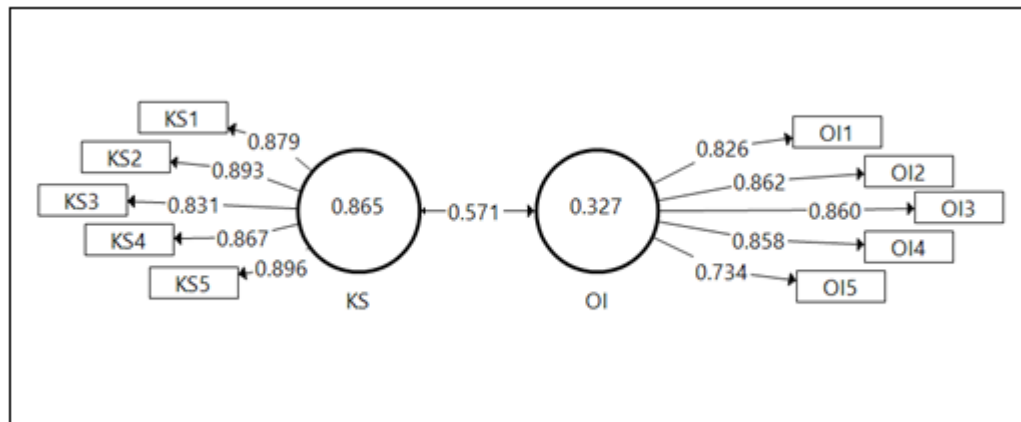
	KS	OI
KD	0.923	
OI	0.782	0.874

Note: Diagonals represent the square root of the average variance extracted while the other entries represent the correlations.

Key:KS: Knowledge Sharing, OI: Organizational Innovation

4.2 Structural Model Assessment

The structural model can be tested by computing beta (β), R^2 , and the corresponding t -values via a bootstrapping procedure with a resample of 5,000 (Hair, Hult, Ringle, & Sarstedt, 2017).



Key: KS: Knowledge Sharing, OI: Organizational Innovation

Figure 2: PLS algorithm results

Figure 2 and Table 3 depict the structural model assessment, showing the results of the hypothesis tests. Knowledge Sharing positively influence organizational innovation. Hence, H1 is accepted with ($\beta = 0.571$, $t = 14.354$, $p < 0.001$).

Knowledge Sharing explains thirty-three percent of the variance in organizational innovation. The values of R^2 have an acceptable level of explanatory power, indicating a substantial model (Cohen, 1988; Chin, 1998).

Table 3: Result of Direct Effect Hypotheses

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	Decision	R^2
H1	KS→OI	0.571	0.040	14.354	0.000	Supported	0.33

Key: KD: Knowledge Sharining, OI: Organizational Innovation

5. Discussion

The main objective of the current study is to examine the impact of Knowledge Sharing in term of (knowledge development, knowledge sharing, and learning access) on the organizational innovation within the Private universities in Malaysia . One hypothesis was proposed to be examined.

H1 assumes that there is positive impact of Knowledge Sharing on the organizational innovation. Results revealed through the SEM analysis that Knowledge Sharing has a significant direct positive impact on the organizational innovation with ($\beta = 0.584$, $t = 14.896$, $p < 0.001$). Thus, H1 is achieved. The researcher examined the existing theories and literature and was able to establish a significant relationship between

knoweldge management and innovation. Knowledge Sharing relates to organizational. The integration of better knowledgeable workforce in the Private universities will lead to enhanced integration and sharing of knowledge across all departments, allowing the human capital to learn new skills and be a part of the development. It also boosts productivity and innovation that in turn leads to new knowledge creation. In a similar fashion, the results of the research indicated that there is a significant impact of knowledge sharing on the innovation execution.

6. Limitation and Future Work

This study was conducted by the researcher in Malaysia and therefore its approach is limited. The researcher faced several limitations while conducting the study.

Firstly, time was a great issue to complete the study with accurate results. While the researcher had an adequate time period to complete the study, time constraints were experienced since government entities were involved. The researcher was not able to get permissions easily to conduct the study.

After collecting the data, the researcher faced certain issues in analysing them since a few replies were inconsistent and in many cases it was understood that the respondents did not get the meaning of the questions. The researcher had to therefore spend time in making the respondents understand the questions in order to ensure accurate replies were received for analysis of data. The focus was on receiving the precise data that would enable the researcher to meet the aims and objectives of the research.

Although the researcher has presented a revised conceptual framework which is based on the data analysis and has undergone validation, it might be difficult to generalize the framework for other countries until it has been tested and validated for the said country. Although the good practices framework would act as a framework to help in the implementation.

In the opinion of the researcher there is a need to study the topic from the change management perspective since it has a significant impact on the innovation and creativity execution in any organization. Change management is an important aspect during implementation of innovative business into different views and opinions of organizational innovations The

proposed hypothesis was supported statistically. The conclusion derived from the present study is that knowledge management positively and significantly contributed to the organizational innovation within the educational organization sector in Malaysia. These factors are relatively important techniques that contributed to the innovation in the private universities in Malaysia, since their explanation of the total variance 32%. As a result, this study empirically reveals that private universities in Malaysia ought to

processes and therefore if there is resistance to change it can have effects on the implementation. Therefore, there is a need to study change management in detail with respect to innovation and creativity. Furthermore, it is also important to note that change differs from educational organization to hence the approaches to change management must be customized according to the requirements of the educational organization and thus the impact of change management needs to be studied and recorded further.

While the study was specific to the private universities organizations in Malaysia, the researcher has generalized the frame of reference such that the framework can be applied to a wider context. This was especially because the factors affecting the innovation and creativity execution vary from region to region. Additionally, the key actors and their roles and responsibilities have an impact on the tasks and activities that are carried out during the implementation of innovative business processes or during the development of new, innovative, technology-driven products and services.

7. Conclusion

The researcher conducted this study in view of the fact that more detailed picture about organizational innovation and their critical factors can statistically be investigated by using questionnaire method as it provides an insight

critically employ the effective knowledge management practices (knowledge development, knowledge sharing, and learning access) (to cope with business environmental changes). The result further showed that Knowledge Sharing is important for private universities. Particularly in Malaysia. Results would give insights for private universities in Malaysia to improve the organizational innovation focusing on Knowledge Sharing management.

Appendix
Appendix A
Instrument for variables

Variable	Measure	Source
Knowledge Sharing (KS)	KS1: Our educational organization culture facilitates the sharing of information.	(Amabile, 1983; Nonaka & Takeuchi, 1995; Youndt, Subramaniam, & Snell, 2004)
	KS2: Sharing of information is provided at all levels	
	KS3: Through sharing of knowledge, we have retained top talent	
	KS4: Sharing of knowledge has allowed our educational organization to build creativity.	
	KS5: Our educational organization has tools in place to enable the sharing of knowledge across all individuals and teams.	
Organizational Innovation (OI)	OI1: Our educational organization always tries applying a new idea/technology at our organization.	Sufian & Noor (2009) Khrawish (2011)
	OI2: In our organization, new technology is adapted for improving the work processes.	
	OI3: Our educational organization is quick to respond to the changing needs of its customer.	
	OI4: In our organization, employees are hired on their creativity.	
	OI5: In our organization, we believe in the open communication environment.	

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Organizational humor, work space and time

HeeSun Kim

Department of Business Administration, School of Government and Business Administration
Yonsei University, Wonju, South Korea
Tel: +82 33 760 2315, E-mail: hs-kim@yonsei.ac.kr

Abstract

Organizational humor is generally perceived as a phenomenon that helps to develop happy feelings and positive workplace atmosphere. While humor may affect organizational members in diverse ways, the ambiguous nature of humor may create uncertainty and unexpected outcomes. In particular, humor used between organizational members during non-work time and space (including through technological mediums) may create further confusion to communicators. Connectivity between work colleagues may increase through the use of humor, as the light and fun nature of humor creates difficulties for individuals to disconnect. Findings suggest that such experiences via humor may slowly blur the boundary between work and personal life by creating confusion between what is work and non-work, and help to reconfigure the idea of time and space. In an age of hyper-connectivity, organizational humor may provide insights into how workers interact, and manage work and personal space and time.

Keywords:

Boundaries, communication, Confucian values, connections, humor, Korean workplaces, organizational space

Introduction

In an age of constant connectivity, workers experience continuous linkages to work and work colleagues through Information and Communication Technology (ICT). This has blurred the boundaries of work and worker relationships, where individuals are unable to fully separate personal and professional lives. Work may no longer mean 8 hours in office spaces. Continuous connections to work may seem to encourage productivity but it may also lead to inefficiency [25], as individuals are required to redefine when, where, and how they work. In this process, humor may be helpful to smooth communication processes and develop positive workplace relationships [9]. The ambiguous nature of humor means that individuals may respond to humor more easily than other communication medium as the fun and light nature of humor serves as a safety mechanism in organizational interactions [20]. Boundaries in terms of work and work

relationships may be pushed through humor [38], and thus humor may help to understand how individuals respond to the changing work environment in terms of work time and space. This study attempts to explore the relationship between humor and boundaries, and provide insights into the changing definition of work and personal time and space, through investigating three South Korean (hereinafter Korean) workplaces.

Literature Review

Organizational humor

Organizational humor is a contextual phenomenon [1] that is perceived as a form of interaction that provokes enjoyment and laughter to users [5][39]. However, humor may be difficult to define. Humor may be described as a mental process that identifies a feeling of amusement, leading to other emotional outcomes [32]. However, humor may also be suggested as a multi-faceted phenomenon which includes unexpected situations, amusement, laughter, but also negative feelings [37]. Despite such complexities, humor may be an effective communication medium by delivering the communicator's intent [20].

Organizations often emphasize the positive role of humor in the workplace, and thus humor is frequently encouraged to be used between workers [35]. Humor may help to develop interpersonal relationships by emphasizing similarities and constructing positive experiences. Cooper's relational process theory (2008) suggests that humor may help to influence the quality of organizational relationships through processes of affect-reinforcement, similarity-attraction, self-disclosure, and hierarchical salience. This means that individuals may develop positive work relationships regardless of hierarchical differences, as they create a feeling of similarity and attraction through laughter [36], while also sharing a non-work (humor preferences) aspect of their individual identity [9].

Humor may also perform diverse roles within the workplace. This includes developing social norms

[16] (Duncan, 1985), cultivating identities, and reinforce power relations [21]. Humor may be used as a medium to display authority and control [33], but also a way to contest management [38]. However, as past experiences, relationship between communicating individuals, and underlying cultural values of the communicators shape how individuals understand a particular humor interaction [13], the outcomes of humor may be unpredictable, and individuals may interpret the same humor instance differently [40]. Formality and organizational constraints may be blurred through humor [43] and at the same time ensure safety of workers who contest such boundaries[20] (Holmes, 2000) by utilizing the ambiguous nature of hour that embeds both fun but dark contents[31] (Martin, 2003). Regardless of the intention of the joker, sharing laughter through humor may help individuals to develop familiarity [6] by finding similarities and emotional connections with others [8].

While humor interactions are highly influenced by the communicators and their cultural values, organizational humor is also affected by the organizational [37] and societal culture [11]. Values and beliefs of the wider society influence how individuals communicate and structure their relationships, and thus leading to different approaches towards humor [1]. In particular, humor perception between Western and Eastern contexts seems to differ, where humor is perceived as positive in the Western contexts, but humor is often considered as an uncommon interpersonal characteristic in Eastern contexts [45][46]. This may depend on the different cultural values and how interpersonal relationships are structured. For example, many East Asian countries are influenced by Confucianism which values hierarchy and harmony [44]. Appropriate communication depends on the relational status (hierarchy) of the communicators, where obedience [41] and silence [29] is recommended for those in lower hierarchical positions. Hence environmental factors should be considered [12] which may include cultural or other contextual influences to humor in the workplace [23].

Therefore, humor may be an inappropriate behaviour within East Asian contexts, such as Korean workplaces. Similar to other East Asian cultures influenced by traditional Confucian values, Korean society values hierarchy and harmony [15], and humor may be considered as an informal form of communication that harm the hierarchical

structure within the society[7]. However, this does not mean humor does not exist in Korean organizations. Studies such as Lee (2015) and Kim and Lee (2016) show that humor occurs actively in Korean workplaces, and especially by those in managerial positions. Therefore, humor is not simply rejected with Korean workplaces, but perceptions towards humor are highly dependent on the context- especially between 'work' and 'non-work' situations.

Work space and time

Development of technology and the increase in remote work (work from home) have shifted the idea of work space. Individuals are no longer bound to the physical office to perform work tasks, and have expanded the boundary of work to their homes. The use of ICTs means that individuals may connect to work anywhere and at any time. While this change suggests that individuals may be able to gain flexibility in where and how they work, it also means that workers are (potentially) constantly connected to work regardless of their intentions.

The idea of work 'space' describes physical space such as office structure and building, but also includes the notion of private (personal) and public (work) areas where individuals can work. Baxter and Kroll-Smith (2005) suggests that the boundary between work and private space also correlates with time, where work space links with work time and private space with personal time. Traditional notion of work and space were clearly divided and thus ideas of private and public space were portrayed as two ends of a continuum [4], and only a few professional occupations such as medical doctors were considered to have more flexible, but integrated life [47]. However, the work environment is rapidly changing (i.e. due to Covid-19) and this need of flexibility is now a necessity for most workers. Flexibility in this sense does not only mean work is taken to home settings- but 'personal' activities such as taking naps are also introduced to work space[3][14] to further blur the boundary between work and private space.

Virtual work environments may be created by adopting technological mediums at home (such as online meetings) and this may surpass the traditional idea of work 'space'. Workers mentally construct the idea of work with their colleagues through online connections and collaborations, to build trust and surveillance that act as a source of control for work performance [28]. This means that this subjective experience of workers of being connected with other workers alters the notion of work space, and individuals may experience their private homes as work space indifferent to company offices. Baxter and Kroll-Smith (2005) suggest that behaviors

which were traditionally identified as deviant behaviour may be the key to reconfigure the relationship between home and work, and private and public space and time. Such change may assist in creating more flexible work environment, which may serve an important role in times of organizational change. Taylor and Spicer (2007) summarize the idea of organizational space into three areas of physical distance, display of power relations, and lived (subjective) experience. Under this integrated review, organizational space may no longer mean physical walls, desks, and building. Organizational space may display ideas of power and surveillance between workers, where each individual may experience and create 'space' differently. Therefore, organizational space embeds physical, relational, and subjective interpretations than the traditional static view of space [17].

Humor, boundaries, and work space

Martin's (2004) study of women in middle management suggests that workers may bring in their non-work role (i.e. mother) into the workplace through humor, in order to cope with the organizational role. This suggests that while non-humorous communication that reflects individual's personal role may be perceived as unprofessional, humor may help to blend these identities and spaces to the joker's advantage. Similarly, Heiss and Carmack (2012) suggest that humor may be an effective medium to adjust to organizational change, and make sense of new norms between workers.

Digital environment provides a new form of decontextualized platform where there are higher chances of misinterpretation of information between individuals [18]. This problem also applies to humorous interactions, and thus the online medium used by many companies may deepen existing social gaps. Organizational members that experience new platforms of work are required to adjust and find the 'right' way to work. For example, while organizational negotiations may traditionally be performed in person, problems such as distance and time have force workers to negotiate online instead. Kurtzberg, Naquin, and Belkin (2009) suggest that the quality of interpersonal relationships between negotiators may be enhanced through the use of humor via e-mail prior to the negotiation, to increase trust and satisfaction between the negotiators. Similarly, Imlawi and Gregg (2013) suggest that the use of humor through online social networks helps to increase user engagement, as the humorous post serves as a form of self-disclosure that improves the writer's credibility. Therefore, humor interactions may help individual to communicate and work more effectively outside the traditional office space, by creating a sense of 'sharing' (information or

relationship) and extending the boundaries of work and personal life.

Methodology

This study adopts a qualitative research approach to investigate humor interactions and perceptions in different work spaces. In particular, multi-voiced interpretivist approach [2] [10] is used to explore diverse interpretations of humor by individuals, and to capture their unique perceptions in humor events. Participant observation and semi-structured interviews were used to collect data across three Korean organizations. For anonymity purposes, these three participant companies were renamed as Truscene, Mintrack, and Wisepath. The researcher spent 1 month in each of the participant companies (in full emersion) to observe humor instances and participant behaviour. Duration of the interviews was approximately 1 hour per participant, and questions with regards to workplace humor interactions, individual perceptions in diverse situations, and cultural values were asked. All participants were provided with information sheet and consent form about the research, and all communication with the participants were conducted in Korean language. Individual participants were also given pseudonyms, and a total of 46 individuals were interviewed across the three companies. Details of the participant companies and interview participants are summarized below.

Table 1- Summary of participant companies

Company	Industry	Size	Employee's age group (range)
Wisepath	Manufacturing	63	20 - 60
Mintrack	Online Gaming	33	20 - 60
Truscene	Information Technology	49	20 - 40

Table 2- Details of interview participants

Company code name	Wisepath	Mintrack	Truscene	Total
Gender				
Male	5	10	20	35
Female	2	4	5	11
Age range				

Below 30	0	7	12	19
30- below 50	2	7	13	22
50 and above	5	0	0	5
Organizational hierarchy				
Junior staff	4	7	15	26
Middle manager	0	7	9	16
Senior manager	3	0	0	3
Top management	0	0	1	1

The data was recorded using field notes and audio recording methods, and then transcribed after the data collection period. The collected data was then analysed using thematic analysis to outline themes and categories that illustrates unique stories. Data analysis was conducted in four steps, where initial analysis occurred during the data collection period. Second, the analysed categories were organized for each of the participant company after the data collection period. Third, data across the three participant companies were combined and coded, and last, themes were arranged and some recoding of data was conducted using NVivo program.

Findings

Context

The organizational culture and characteristics of the participant companies provide important information in understanding the data, as context influences worker perceptions and behaviors significantly. The three participant companies operate in different industries and have different organizational culture. First, Wisepath is an Information Technology (IT) company with 49 workers, and the workers were observed to use some humor in the workplace. However, this was limited to those in superior positions, or shared between individuals at the same hierarchical level. Second, Mintrack is an online gaming company with a relatively young average age. With 33 workers, employees in Mintrack used humor most actively across the three participant companies. While the style of humor differed, individuals at diverse hierarchical levels employed humor in everyday

conversations. Last, Wisepath is a manufacturing company that operates two different divisions of factory and office. With a total of 63 workers, Wisepath displayed most patriarchal behaviors, such as using full honorifics to seniors and showing full obedience to managers.

Themes and categories

Three broad themes emerged from the collected data. First theme *deviant behaviour* discusses how humor is perceived as an inappropriate behavior within the workplace, and may harm professionalism and productivity. Second theme *uncertain and situational humor* suggests that individuals may interpret humor instances differently according to the context, and also create various uncertainties especially in unfamiliar situations. Last theme *social co-creation* discusses how humor interactions may help to reconfigure the idea of space between the interacting individuals by temporarily altering the quality of interpersonal relationships. These are deviant behaviour, uncertain and situational humor, and social co-creation. Table 3 below provides a summary of these themes.

Table 3- Themes

Themes	Description
1. Deviant behaviour	Humor is perceived as an inappropriate workplace behavior
2. Uncertain and situational humor	Interpretations of humor can differ according to the situation, and thus create uncertainty in different contexts
3. Social co-creation	Humor may help to socially redesign space and interpersonal relationships by blurring work-personal boundaries

Deviant behaviour

In discussing humor used within the organizational context, participants suggested that although humor occurs within the workplace, it is generally perceived as a negative behaviour that is incongruent with the societal cultural expectations. 37 interview participants suggested that humor is an inappropriate form of communication within the workplace:

Humor isn't crucial. Not having it won't stop you from having decent conversations

Turquoise, 35, Truscene

Work is the focus, when you come into work. Not things like humor and joking around.

Opal, 24, Mintrack

Examples above imply that humor and work does not fit well, and is an unnecessary part of organizational communication. Similarly, another participant suggested that humor does not fit with Korean culture:

It doesn't fit with Korean culture. A workplace needs to be formal. Mixing (humor) with work makes you look arrogant, so it doesn't suit workplace settings.

Agate, 30, Truscene

Agate discusses humor as an unfavourable personal characteristic t work ('makes to you look arrogant'), and also implies that within Korean culture, workers should behave in a humble manner.

Uncertain and situational

Although many participants suggested that humor should not be used in the workplace, 233 humor instances were observed across the participant companies. However, how humor should be used seemed to differ according to the situation, such as in formal and informal situations. Humor may be interpreted differently according to the context or space, and thus lead to uncertain outcomes. 11 participants suggested that there are situational boundary differences in using humor, especially depending on work or non-work hours:

Work is usually formal and serious [...] so people usually joke during lunchtime, breaks.

Citrine, 33, Mintrack

The interviewee suggests that work hours should involve communication that is 'formal and serious' (thus no humor) but non-work hours such as 'lunchtime' and 'breaks' are considered as appropriate situations to use humor. Thus, this implies that humor may be approached and interpreted differently according to the when and where humor is used- whether its during working hours and within work spaces- or not. However, this division is unclear and rather confusing.

This confusion is suggested to create uncertainty in humor outcome and approaches to humor. 28 interview participants suggested that the different interpretations to humor seem to escalate outside the office space. Expectations towards humor were suggested to change outside the physical office space. One of the interview participants explains his confusion in understanding humor communication in diverse work space and hours:

During work, it's not good to use humour because then you can't concentrate. But when we go out for coffee or something, then I like the whole liveliness and joking and all. But then again when it's associated with work, I don't like the loud and lively... no, I do like it. It's kind of confusing.

Peridot, 31, Mintrack

One of the observation examples also illustrates how workers may respond to humor interactions in ambiguous situations. This example involves workers at Mintrack attending a company 'workshop' during the weekend. This workshop involved young workers spending two days at a holiday house to play games, drink alcohol, and socialize. All expenses were paid by the workers and no support was provided by the company. This particular example focus on the behaviour of Tourmaline, a young male worker that was frequently pranked (target of humor) within the workplace:

While everyone is still eating and drinking in the outdoor BBQ area, Diamond stands next to the BBQ grill, where Iolite is cooking the last few sausages left. They discuss about religion, and Diamond suddenly questions Iolite in a loud voice, holding up a bottle of beer in his hand.

Diamond: Of course I believe in God! I was born a Christian! Do you even know who Abraham is?

Tourmaline: Lincoln.

Tourmaline, who is passing by the BBQ grill with an empty plate in his hand answers Diamond's question. Diamond looks startled, as Tourmaline has suddenly appeared behind him. Diamond and Iolite frown, stare at Tourmaline for a few seconds, and both laugh hysterically. Diamond nearly drops his beer bottle, and then grasps the bottle with both hands while breathing heavily in an exaggerated way. Iolite laughs while shaking his head from side to side, as if disapproving of the situation, but continues to cook the sausages on the grill.

May 23, Mintrack Observation notes

In the above example, Tourmaline voluntarily responds and engages in humor with his seniors (by saying 'Lincoln' to Diamond's question and creating an incongruity). In normal workplace situations (i.e. in office) Tourmaline does not react to any humor initiated by the managers, even if he is the target of the joke. Therefore, such abrupt engagement may not be acceptable to Diamond and Iolite who are positioned at a more senior level than Tourmaline. However, rather than rejecting Tourmaline's statement, Diamond and Iolite both laugh and signals consent to Tourmaline's action. This observation suggests that humor initiated in non-

work space may be used and interpreted differently to normal work situations, and thus influence the boundaries of work and non-work relationships.

Social co-creation

The third theme discusses how humor interactions may help to reconfigure the idea of space between interacting individuals by using the 'light' nature of humor, and allow individuals to interact smoothly. For example, one interviewee explains how humor used during work hours and space leads to a non-work engagement, as her superior jokes about her personal issues which would not usually be shared within the workplace:

The CEO talks a lot about my age, and when I will get married. I guess he's concerned about my personal life (marriage), so he often comments about it in a jokingly way. Honestly, he's just using humor to be nosey about my personal life [shakes head], but because he's laughing and joking, it seems weird to get back at him.

Citrine, 33, Mintrack

Citrine suggests that the CEO uses humor to talk about her 'personal life' which is unrelated to work. Citrine also displays body language that seems to disapprove the CEO's jokingly action ('shakes head'). Although this humor interaction did not seem to lead to an aggressive conflict, it implies that the uncomfortable humor used by the CEO creates a temporal space outside of work. Similarly, another participant describes an experience where a manager's text message after working hours creates a sense of 'work' even at home:

Sometimes the manager sends us a funny link (webpage). Sometimes it's funny, sometimes not so much. It's not work, but I still have to respond back even during weekends. At least a short phrase like LOL (laugh out loud- original translation 'ㄱㄱ' which describes a laughing sound)

Topaz, 24, Truscene

This example suggests that when superiors contact subordinates after working hours (i.e. weekends), subordinates are unable to completely separate themselves from their work roles, but feels obligated to respond as a 'subordinate'. This immediate shift in roles (from personal to professional) implies that humor may play a complex role in merging work and personal space. While the casual nature of humor may feel as if it is not work ('it's not work'), the fact that this perception (that it's not work) persuades Topaz to connect with his manager implies that humor may perform as a 'lure' to increase connections between workers during personal time. Another interviewee explains his experience of how this blurred boundary may affect his week:

We joke, talk about dating and non-work stuff. It's fun [...] then it leads to us meeting during the weekend, go for a drink, karaoke. Then back to work on Monday.

Turquoise, 35, Truscene

By enjoying humorous interactions with work colleagues, participants above imply that such casual or light-headed conversations lead to increased amount of connections with other workers, and even sharing personal time ('during the weekend').

Discussion and Conclusion

Humor is a contextual phenomenon that may be interpreted differently within organizations [1]. This study suggests that although humor may not be a preferred form of communication within the wider Korean society, humor occurs actively within organizations to help blur workplace boundaries. Within the studied workplaces, humor is perceived as a non-work behaviour that crafts a sense of personal time and space, regardless of the physical location of the communicator. This extends Baxter and Kroll-Smith's (2005) study of public and private space and time, where traditional non-work behaviour becomes normalized within organizations to help blur boundaries of appropriate behaviors at work. Humor observed in this study not only changes the idea of appropriate workplace behaviour, but also contributes to developing workplace relationships beyond that of work colleagues by increasing the level of interaction between individuals after working hours and outside of work space. The 'fun' nature of humor means that workers may connect whenever and wherever more flexibility, and subconsciously merge work and private time and space.

This may be significant as the increased need to work from home, and adopt flexible working hours have creased problems in terms of balancing work and life, where individuals desire to separate their work and personal domains. However, this separation may be difficult, and from the organizational perspective, increasing the connectivity of workers to work may be necessary in maintaining work performance in an era of change. Therefore, utilizing humor may help to subconsciously connect workers with the organization, and blur the work-private life boundary in both time and space. Humor may help to understand the process of boundary recreation (work and personal space and time) and the risks involved in using humor as a method to reconfigure time and space for workers. The ambiguous nature of humor means that humor may be interpreted differently and thus result in unintended outcomes,

especially when the humor interaction occurs in unfamiliar spaces (such as online).

There are various limitations to this research. First, the qualitative nature of this study means that the findings may not be generalizable to other Korean organizations. Second, as only three companies were examined for a short (1 month) period of time, investigating a larger number of companies for a longer duration may help to understand humor and space further in depth. Future research may consider these limitations and study a larger number of company, and perhaps those in other Confucian-based cultures (such as Japan or China) to analyse the influence of Confucian values to humor interactions in East Asian contexts. Furthermore, developing a quantitative research design may also help with increasing the generalizability of the research findings.

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Attaining Self-Transcendence through Self-Kindness: The mediating role of Humanity

Rahul Khurana^a and Santosh Rangnekar^b

^a Department of Management Studies, IIT Roorkee

Uttarakhand, India 247-667

E-mail: r_khurana@bm.iitr.ac.in

^b Department of Management Studies, IIT Roorkee

Uttarakhand, India 247-667

E-mail: santosh.ragnekar@ms.iitr.ac.in

Abstract

Aim The current study is focused on identifying the relationship between self-kindness, humanity and self-transcendence.

Background. Humans have become self-centred and have feelings of just self-enhancement rather than self-transcendence. In this context, it becomes evident to develop tools to enhance the feeling of self-transcendence. Self Kindness is identified for the purpose which affects self-transcendence through humanity.

Design. Data in this survey was collected using a self-reported google form questionnaire.

Methods. A random sample of 110 employees in North India was collected. Statistical analysis of the model was done using Structural Equation Modeling.

Results. Structural Equation Modeling showed that Self-Kindness was positively associated with Humanity and Self-transcendence, that humanity was positively associated with self-transcendence and that humanity mediated the positive relationship between Self-Kindness and Self-transcendence.

Conclusion. The present study highlights humanity's mediating role as an underlying mechanism between

self-kindness and self-transcendence. The theoretical and practical implications and the limitations and future scope of the present study are also discussed.

Keywords:

Self-Kindness, Humanity, Self-Transcendence, Kindness, Transcendence

Employees' intention to leave job – The case of Micro finance institution

Rabin Subedi^a, Dr.Surendra Neupane^b and Raju Ram Adhikari^c

^a PhD Scholar, Lincoln University College, Malaysia (Email-rusubedi3@gmail.com)

^b Tribhuvan University-Lincoln College, Kathmandu (Email-snpworld3@gmail.com)

^c PhD Scholar, Tribhuvan University, Nepal

Abstract

The main purpose of this study is to examine the factors that influence the employee's intention to leave the current job. A descriptive survey design was conducted and primary data were collected by using questionnaire. The study was based on random sampling; a sample of 200 was drawn from the employees who work in different micro finance institutions in Nepal. For the data analysis percentage analysis and chi square-test were used. The study revealed that salary, working condition, career growth, supervisor behavior and outstation influence the job quitting process. The study also defined the association between the reasons for leaving job such as salary, working condition, career growth supervisor behaviour & outstation and satisfaction, time spent in the organisation, training & development facility, frequency of changing job & encourage from immediate boss. This study establishes the importance of intentions of employees to quit job and provides further evidence in revealing the intentions to quit among the employees.

Keywords- Turnover, retention, job, reasons, microfinance, intention

Introduction

Managers in microfinance institutions are focusing the human as an intellectual capital and implementing policies, strategies and processes to

satisfy them. They know human resource is prepared through different human resources practices such as, appropriate remuneration packages, training and development, work life balance ,flex working hours, flex places, good working environment, effective communication so that the employee feels comfortable, which helps to retain employee in current organisation and minimize employees turnover. Generally employee turnover is the proportion of a firm's workforce that leaves the job cause of different factors during the course of a year.

Large numbers of factors that seem to be repeatedly associated to employee turnover in micro finance institutions in Nepal. Turnover intention is one's behavioural intention to quit. The turnover intention among microfinance employees refers to the conscious and deliberate effort of the employees to leave the microfinance institution. Employee turnover occurs when employees leave/quit their jobs. The number of employees that leave the organisation largely determined by pay, promotion, the work itself, working condition, tenure, satisfaction, encourage from immediate boss, work load and salary, training and development, behaviour of supervisor, out station and career growth.

Employee turnover has become a worldwide issue that has puzzled organizations, researchers and practitioners for years. Currently, employee turnover permeates most of the organizations in both developed and developing countries (Tariq, 2013). Employee turnover can be conceptualized in terms of different categories which include: demographic (e.g. gender, age, educational level), occupational (e.g. skill level, experience, tenure, status), organizational related factors (e.g. firm size, industry, job content, working environments, style of leadership, type of organizational structure, pay scale, reward, advancement opportunity, job security and job involvement (CIPD, 2011).

Some employee may leave their job because of lack of freedom while they work. However, even with the widespread recognition of the importance of facilitating the relationship between job satisfaction and motivation in facilitating organizational commitment, there are varying perspectives on the means of doing this. The earliest strategy is to use wage increases to link job satisfaction and motivation to organizational commitment (Ellickson, 2002). In the words of Asad, Jorge and Bhupesh Kumar in their study on employee' intentions to resign from job in luxury hotels in India where they considered two aspects; firstly, the employees' enthusiasm for the profession and organization, the nature of the work and its impact on social and family life and Secondly, their level of satisfaction with the job in terms of organizational loyalty, relationship with supervisors, job security, earnings and additional benefits. They suggested that when considering intentions to resign from the job, a negative relationship is found between professional and organizational enthusiasm and perceptions about

the work being stimulating. No support was found for a positive relationship between the extent work impacted social and family life and the intention to quit. However, results supported the notion that the employees' organizational loyalty has a negative effect on their intention to resign from the job (Asad Mohsin, 2013).

Training is crucial and fruitful for both employee and organizational improvement. Employee training provides prospects to employees broaden their knowledge and capacities. When employees attended to training programs, they achieve self-confidence to perform their jobs, they observe career development opportunities and they think that companies make investment in them. As result of this positive situations, employee satisfaction increases. Many authors claim that job training is an important predictor of employee positive attitudes (Schmidt, 2007). Milne reported that rewards and recognition are two useful tools that are applied in different organizations to appreciate the hardworking employees for their job performance and for their effective contribution to the overall organization's achievement. The extrinsic rewards are those that the employees receive from their organizations as a kind of gratitude and appreciation of their excellent performance. Extrinsic rewards can be offered in different forms such as promotion opportunities or outstanding performance appraisal (Milne, 2007). The employee turnover also creates negative influence to the organization's performance if the management cannot be fully aware and manage in terms of work load of employees. The decision to leave of one employee may cause pressure and bad emotional effect to the remaining employees since

they may feel stressful about the workload or think that the company may in unstable status (Beardwell, 2014).

Most of the scholars emphasized that the lack of job satisfaction led to think about quitting current job. According to Chan M. Hellman on the study on Job Satisfaction and Intent to Leave, concluded that the relationship between job satisfaction and intent to leave was significantly different from zero and consistently negative. Furthermore, across levels of job satisfaction, employees from a large U.S. federal agency were less likely than employees within the private sector to leave the organization. Subsequent analyses on the federal agency studies showed that career stage indicators (age and tenure) moderated the relationship between job satisfaction and intent to leave (Hellman, 1997).

The experience of job related stress ,factors that lead to job related stress, lack of commitment in the organisation; and job dissatisfaction make employees to quit (Hassan, 2016). The job satisfaction and organizational commitment has organic relationship with intention to leave organization and profession, and these two phenomena relate to intention to leave consistently through almost all determinants and outcomes. The study suggested that by intentionally bringing satisfiers and commitment stimulators, organizations can benefit by controlling or eliminating such intentions totally, as they have dangerous effects on individual and organizational performance. (Halwai, 2014). One study from Pakistan tried to fill up gap by exploring the turnover intentions of female employees in the commercial banks of Faisalabad, Pakistan. Intent to quit has been tested empirically for its association with work-to-family conflict and family-to-work

conflict. The analysis proved that intent-to-quit is positively and significantly associated with work-to-family conflict and family-to-work conflict. (Saira Ajaz, 2015).

Inefficient organizations have a high level of staff turnover (Tziner, 1996). Therefore, in different situations where organizations are not stable, employees tend to quit and look for stable organisations because with stable organisations they would be able to predict their career advancement. The imposition of a quantitative approach to managing the employees led to dissatisfaction of staff and hence it leads to labour turnover. Therefore management should not use quantitative approach in managing its employees (Morrell, 2004). In the case of academic institution, pay and supports were significant and negatively related to faculty intention to quit behaviour in any condition. However, the relationship of job security and faculty intention to quit depends on control variables (Mohd Hasanur Raihan Joarder, 2015). If high performers are insufficiently rewarded, they quit. If jobs provide adequate financial incentives the more likely employees remain with organization and vice versa. There are also other factors which make employees to quit from organisations and these are poor hiring practices, managerial style, lack of recognition, lack of competitive compensation system in the organisation and toxic workplace environment (Griffeth R. W., 2000).

More factors contribute to high employee turnover in the sense that there is no proper management practices and policies on personnel matters hence employees are not recruited scientifically, promotions of employees are not based on spelled out policies, no grievance

procedures in place and thus employees decides to quit. There is a crucial need to have more comprehensive studies on the factors that influence the intention to quit among micro finance employees. The results of this study will give a new perspective to the findings of the previous studies on the issue of intention to quit of the micro finance employees. The significance of this study was to extend or contribute to the existing knowledge of employee turnover in the micro finance industry. The main purpose of this research is to explore the factors influence the intention to quit among micro finance employees in Nepal. The study also examined the relationships between reasons for leaving job and time spent in current organization, work load and salary, training and development, encourage from immediate boss, frequency of changing jobs and satisfaction. Therefore, research on intention to quit job can help the organization to identify main factors that can contribute to the turnover intention and rate of turnover. Based on finding of study an organization can make remedy action in order to create favourable working

conditions that can enhance the rate of retention and minimize the job leaving phenomena.

Methods

This study was based on the descriptive and exploratory research design. Total 200 respondents were selected through simple random sampling technique. Questionnaire was administered for collecting data. For the data analysis percentage analysis and chi square-test were used.

Result and Discussion

The reasons for quitting job such as low salary, bad working condition, low career growth, supervisors behaviour, out station and job switching factors such as satisfaction from the job, encourage from immediate boss, work load and salary, training and development facility, time spent on previous job were analysed. Also the association between reasons for leaving job and time spent in current organisation, work load and salary, training and development facility, satisfaction, encourage from immediate boss & frequency of changing job were tested.

Table No. 1: Job switching factors

Variables	Group	Frequency	Percentage
Satisfaction	Fairly satisfaction	64	32
	Dissatisfaction	28	14
	Satisfied	98	49
	Completely satisfied	10	5
Encourage from immediate boss	Not at all	19	9.5
	Sometimes Yes	96	48
	Always	65	32.5
	Usually not	13	6.5
	Neutral	7	3.5
Work load and salary	Yes	58	29

Training and development facility	No	142	71
	Yes	152	76
Time spent on previous job	No	48	24
	Before 3 months	16	8
	3 – 6 months	26	13
	7 – 12 months	43	21.5
	13 – 24 months	13	6.5
	2 – 3 years	23	11.5
	4 – 5 years	8	4
	Over 6 years	5	2.5
	First job	66	33
	0	66	33
Frequency of changing job	1	62	31
	2	52	26
	3	15	7.5
	4	4	2
	5	1	0.5

Source: Field survey, 2019

According to field data, 32% were fairly satisfied with their job, 14% were dissatisfied from their job, 49% were satisfied from their job and 5% were completely satisfied from their job. Similarly, 9.5% were not getting encouragement from immediate boss, 48.0% were getting some level of encouragement, 32.5% were regularly getting encouragement, 6.5% were usually not encouraged by their immediate boss and 3.5% were neutral about it. The field data also revealed that 29% felt that there was perfect match between work load and salary , whereas 71% were not satisfied with work load and salary . The field data also showed that 76.0% of respondents were getting training development facility and 24.0% were not getting training and development facility.

Whereas 8.0% left their previous job before 3 months, 13.0% left in between 3 – 6 months , 21.5% left their previous job in between 7 – 12 months, 6.5% left their previous job in between 13 – 24 months, 11.5% left their previous job in between 2 – 3 years, 4.0% left their job in between 4 – 5 years, 2.5% worked for over 6 years in their previous job and 33.0% were doing their first job similarly 33.0% haven't changed their job, 31.0% have changed their job 1 time, 26% changed their job 2 times, 7.5% changed their job 3 times, 2.0% changed their job 4 times and 0.5% changed their job 5 times. The result reveals that the majority of respondents were satisfied from their job but there was a room for dissatisfaction, employees were getting some level of

encouragement but they were expecting more encouragement from their boss in regular basis, employees were feeling discomfort with work load and salary, majority were getting training and

development facility, minimum number of respondents were working long term in a single organisation, and there was high frequency in changing job.

Table No. 2: Reasons for leaving previous job

Factors	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%
Salary	102	51	61	30.5	21	10.5	11	5.5	5	2.5
Working condition	48	24	92	46	29	14.5	21	10.5	10	5
Career growth	58	29	98	49	29	14.5	11	5.5	4	2
Supervisors behaviour	28	14	98	49	51	25.5	16	8	7	3.5
Out station	27	13.5	99	49.5	54	27	12	6	8	4

Source: field survey 2019

The data depicts that 51.0% of respondents were strongly agree, 30.5% were agree, 10.5% were neutral, 5.5% were disagree and 2.5% were strongly disagree with their salary. Similarly, 24.0% were strongly agree, 46.0% were agree, 14.5% were neutral, 10.51% were disagree and 5.0% were strongly disagree with their working condition. According to data, 29.0% were strongly agree, 49.0% were agree, 14.5% were neutral, 5.5% were disagree and 2.0% were strongly disagree with their career growth in current organisation. Whereas 14.0% were strongly agree with the behaviour of supervisors, 49.0%

were agree, 25.5% were neutral, 8.0% were disagree and 3.5% were strongly disagree. For the outstation working area, 13.5% were strongly agree, 49.5% were agree, 27.0% were neutral, 6.0% were disagree and 4.0% were strongly disagree. The above table reveals that the employees getting satisfactory salary from their organisation, majority were agreed for working condition, employees always looking for career growth opportunity in the job, the support from supervisor plays the major role in the organisation and out station job also influence the leaving process.

Table No. 3: Association between reasons for leaving job and time spent in current organisation, work load and salary and training and development facility

Reasons	Pearson Chi square(Time spent in current organisation)			Pearson Chi square (work load and salary)			Pearson Chi square (Training and development facility)		
	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)
Salary	29.639 ^a	16	.020	4.410	4	.353	9.026	4	.060
Working condition	33.069 ^a	16	.007	3.057	4	.548	8.314	4	.081
Career growth	37.222 ^a	16	.002	1.979	4	.740	7.317	4	.120

Supervisors behaviour	24.433 ^a	16	.080	3.130	4	.536	11.757	4	.019
Out station	21.077 ^a	16	.176	3.615	4	.461	3.968	4	.410

Source: Field survey 2019

The computed value of Chi-square statistic between times spent in current organisation and reasons for leaving job is compared with table value for 5% level of significance. Since the calculated value for salary ($0.05 > 0.020$), working condition ($0.05 > 0.007$) and for career growth ($0.05 > 0.002$) is less than the table value and for supervisor behaviour ($0.05 < 0.080$) and for out station ($0.05 < 0.176$) is higher than the table value. Similarly for work load & salary and reasons for leaving job, since the calculated value for salary is ($0.05 < 0.353$), for bad working condition ($0.05 < 0.548$), for career growth ($0.05 < 0.740$), for supervisor behaviour ($0.05 < 0.536$) and for out station ($0.05 < 0.461$) is higher than the table value. For training and development facility and reasons for leaving job, the calculated value for salary

($0.05 < 0.060$), for working condition ($0.05 < 0.081$), for career growth ($0.05 < 0.120$) and for out station ($0.05 < 0.410$) is higher than the table value and for supervisor behaviour ($0.05 > 0.019$) is less than the table value. So there was significant relationship between time spent in current organization and salary, working condition & career growth of employees and not significant relationship supervisor's behaviour and out station. Similarly, there was not significant relationship between work load & salary, and reasons for leaving jobs. As well as there was not significant relationship between training and developments and salary of employees, working condition, career growth and out station of job and significant relation with supervisor behaviour.

Table No. 4: Association between reasons for leaving job and satisfaction, encourage from immediate boss, frequency of changing job

Reasons	Pearson Chi square(satisfaction)			Pearson Chi square(Encourage from immediate boss)			Pearson Chi square (frequency of changing job)		
	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)
Salary	42.287 ^a	12	.000	37.169 ^a	16	.002	28.430 ^a	24	.242
Working condition	32.894 ^a	12	.001	34.227 ^a	16	.005	60.431 ^a	24	.000
Career growth	19.793 ^a	12	.071	30.050 ^a	16	.018	49.535 ^a	24	.002
Supervisors behaviour	17.350 ^a	12	.137	18.476 ^a	16	.297	41.931 ^a	24	.013
Out station	14.765 ^a	12	.255	27.199 ^a	16	.039	32.136 ^a	24	.124

Source: Field survey, 2019

The computed value of Chi-square statistic between satisfaction and reasons for leaving job is compared with table value for 5% level of significance. Since the calculated value for salary ($0.05 > 0.000$), for working condition ($0.05 > 0.001$) is less than the table value and for career growth ($0.05 < 0.071$), for supervisor behaviour ($0.05 < .137$) and for out station ($0.05 < .255$) is higher than the table value. Similarly encourage from immediate boss and reasons for leaving job were compared. Since the calculated value for low salary ($0.05 > .002$), for working condition ($0.05 > .005$), for career growth ($0.05 > .018$) and for out station ($0.05 > .039$) is less than the table value and for supervisor behaviour ($0.05 < .297$) is higher than the table value. And for the frequency of changing job and reasons for leaving job, the calculated value for salary ($0.05 < .242$) & for out station ($0.05 < .124$) is higher than the table value and for working condition ($0.05 > .000$), for career growth ($0.05 > .002$), for supervisor's behaviour ($0.05 > 0.013$) is less than the table value. So there was significant relationship between satisfaction and salary & working condition and not significant relationship with career growth, supervisor's behaviour and out station for employees. Similarly there was significant relationship between encourage from immediate boss and salary, working condition, career growth & out station and not significant relationship with supervisor's behaviour. In the same way there is not significant relationship between frequency of changing job and salary & out station and significant relation with working condition, career growth & supervisors behaviour.

Conclusion

The intention to quit from job is an important area of research for the companies, government, HR experts. This study proposes thoughtful and precautions use of satisfiers and boosters, which can be utilized in order to diminish the risk and expected harm from bad intentions like planning to leave. The present study provides further evidence in revealing the intentions to quit among the employees. Employees getting satisfactory salary from their organisation, agreed for current working condition, always looking for career growth opportunity, regular support from supervisor, and out station job influence the job quitting process. It also reveals that there was a room for dissatisfaction, expecting more encouragement from their boss, feeling discomfort with work load and salary, training and development facility requires to develop themselves. Minimum number of employees was working long term in a single organisation, and there was high frequency in changing job.

Likewise, the reasons for leaving job such as salary, working condition & career growth of employees were relates with time spent in the organisation and not relates with supervisor's behaviour & outstation. Similarly, the reasons for leaving jobs recite with work load & salary. As well as training and developments facility has no any connection with salary, working condition, career growth and out station and has strong connection with supervisor behaviour. In the same way, satisfaction level of employees relates with salary & working condition and not relates with career growth, supervisor's behaviour and out station. Also, encourage from immediate boss supports salary, working condition, career growth & out station and not support supervisor's behaviour.

Moreover, frequency of changing job was determined by working condition, career growth & supervisor's behaviour whereas there was no any effect of salary & out station.

For managers who are concerned about the impact of intention to quit and possible turnover, these factors over which they have some control and can be adjusted. This may reduce intention to quit, and subsequent turnover, therefore it helps the microfinance institutions to reduce a considerable amount of financial cost and effort involved in recruitment, induction and training activities.

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Co-Worker Support and Communities of Practice: Examining the mediating role of employees' Personal Interaction

Anjali Dutta^a and Santosh Rangnekar^b

^aDepartment of Management Studies, Indian Institute of Technology, Roorkee,
Uttarakhand, India.

E-mail- ac_dutta@bm.iitr.ac.in

^bDepartment of Management Studies, Indian Institute of Technology, Roorkee,
Uttarakhand, India.

E-mail- santosh.rangnekar@ms.iitr.ac.in

Abstract

The present study examines the relationship between Co-Worker Support and Communities of Practice with the mediating role of Personal Interaction. The data was collected from 178 respondents representing various Indian Organizations. In accordance with the hypotheses developed in the study, the findings supported the mediating role of employees' Personal Interaction on the relation between Co-Worker Support and Communities of Practice. The structural equation modelling showed that the path from co-worker support to communities of practice mediated by Personal Interaction with highly significant results. The results also showed a positive relationship among the constructs under study. The theoretical and managerial implications concerning the importance of support, most importantly co-worker support, are mentioned in the study. Future scope of research is also suggested based on the current findings of this study.

Keywords: Co-Worker Support, Communities of Practice, Personal Interaction, Mediation, Indian Organization.

Quality Assurance in Engineering Education: Provision and Practices in Nepal

Basanta Chandra Marahatta

PhD Scholar, Department of Engineering,

Lincoln University College, Malaysia

E-mail: basantamarahatta@yahoo.com

Abstract

Higher Engineering Education in Nepal was started only in 1978. With the liberal policy of the Government of Nepal, 43 private engineering colleges were established after 1994 and are in operation. Due to the globalization, the mobility of engineers from one country to another is increasing every year. International mobility of the engineers compelled engineering colleges to enhance the quality of engineering education through the introduction of various quality assurance and accreditation processes. This research paper aims to analyze provision and different practices that are being adopted by different institutions of Nepal for quality assurance in engineering education. For this purpose, different literature in regards to the quality assurance and accreditation of engineering education was collected as a secondary data and reviewed from one side, and from the other, information on quality assurance and accreditations were collected from the website and reports of colleges, universities, Nepal Engineering Council (NEC) and University Grant Commission (UGC). The colleges and universities that are providing engineering education have developed and implemented their own system for quality assurance. NEC as per its checklist is regularly monitoring engineering colleges to know whether they are keen to maintain quality of engineering education or not. UGC from another side has started quality assurance and accreditation of Higher Education Institutions based on its QAA Guideline.

Keywords:

Engineering, Education, Norms & Standards, Quality, Assurance, Accreditation, Globalization,

Introduction

From very ancient to modern, an Education is taken as basic needs like food, shelter, and other economic needs. Without Education, no society could last more than a generation. Aristotle declared that “*educated men as much superior to uneducated as the living are to the dead.*”

The meaning of the Education is a conscious effort of the state towards the welfare of the growing child to mould him fit in the society, where he lives.

Engineering Education is to prepare a technically competent graduate, and to add several dimensions of broadening the knowledge of planning, implementation, controlling and communication of development projects. Engineering is the application of creativity and teamwork using math and science principles as tools to solve problems. It is “Science” to describe electromagnetic radiation, but it is “Engineering” to build a radio or TV. Engineering Education develops technically sound engineers, who can solve different technical problems through the application of creativity and teamwork using math and science principles.

There is great importance of engineering education. The engineering profession is very sensitive. One minor mistake done by an engineer can cause high casualty. Engineering is applied science. Science provides theoretical knowledge and theory of science is changed in practice by engineering. It is done through the development of new technology. The

technology is changing very fast in the world. Engineers are the one who develops and uses new technology. The change of the technology is possible only through research and development activities.

Different factors like physical infrastructure of engineering institutions; Curriculum; minimum requirements of the student to apply for admission and admission procedure adopted by the institutions; qualification, experience and number of faculty involved in the institutions; laboratories and library facility; and others are considered as major determining factors of the quality of engineering education.

Some time the terms "quality control" and "quality assurance" are taken as synonymous. But they are different in meaning as well as in purpose. Quality control detects the problems that occur, while quality assurance prevents detected problems (Emeasoba, 2015).

Quality control is described as the process of ensuring a certain set level of excellence that have to be met either in service or in product. Quality Control compares the achieved results with expected. So the quality control can only be done after doing the work (Emeasoba, 2015).

Quality assurance involves different parameters like the quality of teaching personnel; quality of available instructional teaching materials, equipment, college environment, students, and quality education delivery. It includes all functions and activities that will ensure quality of the academic (teaching, curriculum, etc) and structures (buildings infrastructures etc.) which will allow an objective review of the quality of the program/instructional delivery. Quality assurance is a way of measuring, improving, and maintaining the quality of any human activity that has a value. Quality assurance principles regulate both the external and internal activities of an educational institution. It is done by expert having supervisory capacity over the person doing the work and can decide on means, methods, and materials (Emeasoba, 2015).

Quality Assurance makes sure the right things are done on right way. The aim of the both quality

control and quality assurance is to improve the quality of education for all students.

The globalization and mobility have created unique opportunities for the flow of technology, knowledge and ideas of people across the borders. Engineering education has become an integral part of this globalization as engineering graduates from a country can undertake employment in another country (Harun Chowdhury, 2013). This international mobility of engineering graduates has compelled educational institutions to enhance the quality and standard by introducing various quality assurance and professional accreditation processes. The educational institutions, employers, and professional organizations have a keen interest in the quality of education received by engineering graduates who aspire to be internationally mobile especially in today's globalised economy. This quality assurance and professional accreditation are more important for countries which rely on human resources export and import.

Quality assurance mechanisms for engineering education vary considerably from country to country ranging from strong peer-run accreditation programs to large government bureaucracies. The accreditation methods used by the Washington Accord signatory countries are considered to be the best developed and most well respected systems for the accreditation of engineering education in the world.

Engineering Education is comparatively new in Nepal. It was started only in 1978 through Institute of Engineering (IOE) under Tribhuvan University (TU). The government of Nepal, particularly, after the dawn of democracy in 1990, has given major priority to the privatization. Consequently many private institutions in educational sector have come into existence. For the first time in 1994, private engineering college was established in Nepal. Now there are 43 different private engineering colleges affiliated to four different universities. Now, there are 11 universities in Nepal. Out from 11, six are providing engineering education through their constituents and private affiliated colleges.

There are already 51 (8 constituents and 43 affiliated) engineering colleges in Nepal. Annual intake capacity of these colleges is about 9500 and about 7000 student complete engineering study each year and goes for either further study or job. Hence, the big number of engineers, the product of these engineering colleges, is performing professional practice inside and outside the country.

There are three separate governmental entity formed under separate act namely Nepal Engineering Council (NEC), Universities and University Grant Commission (UGC), who are responsible for the quality assurance and accreditation of engineering education in Nepal. The NEC was formed under Nepal Engineering Council Act 1998. In 1999, NEC has developed and approved the norms and standard to run engineering colleges. The major objective of the Norms and standard is to have basic guideline to monitor and evaluate engineering institutions to maintain quality of engineering education compatible to the international standard. The universities, providing engineering education have also their separate Norms and standard aimed at maintaining quality of engineering education at par of international standard. In 2007, UGC had established separate Quality Assurance and Accreditation (QAA) division to perform regular activities related to QAA of higher education institutions.

This research paper aims to identify provision and process adopted by different governmental and non governmental entities of Nepal and abroad to assure the quality of engineering education inside the country. This paper would be useful for the colleges and universities that are being involved in engineering education.

Literature Review

In Nepal, Nepal Engineering Council (NEC) and the concerning universities are responsible to provide approval to run the engineering colleges and monitoring and evaluation of these colleges. For this, they have their own Norms and Standard, but almost similar. The Norms and Standard of the NEC was thoroughly reviewed. Similarly, different research papers prepared by different scholars, books and technical journals about the quality assurance and factors affecting quality of engineering education and steps taken to enhance the quality of education by different colleges was collected and reviewed. Some of them are given below

In the year 1999 through Nepal Engineering Council Act-1998, NEC is vested with the formulation of norms and standards, monitoring and evaluation, and ensuring co-coordinated and integrated development of engineering education in Nepal. Some of the functions of Nepal Engineering Council to ensure maintenance of standards are (Council, 1995):

- To lay down norms and standards for courses, curricula, physical and instructional facilities, staff pattern, staff qualifications, quality instruction and examinations;
- To grant approval for starting new technical institutions and for introduction of new courses or programs in consultation with the agencies concerned;
- To take all necessary steps to prevent commercialization of technical education;
- To set-up a National Board of Accreditation to periodically conduct evaluation of technical institutions or programs on the basis of guidelines, norms and standards specified by it and to make recommendations to it or to the affiliating universities regarding recognition or de-recognition of the institutions or the programs.

Accordingly, NEC has developed and approved the norms and standard to run engineering colleges. The major objective of the Norms and standard is to have basic guideline to monitor and evaluate engineering institutions to maintain quality of engineering education compatible to the international standard.

The Norms and Standard of NEC are developed based on salient features of an engineering college with an annual intake capacity of 300 students. There are eight different indicators with weightage of each indicator as given below (NEC, 1995):

Table 1: Weightage of indicators

S.N.	Description of infrastructure	Weighted
1	Lands and building space	15%
2	Laboratory equipments	20%
3	Library books and journals	15%
4	Permanent faculty	25%
5	Administrative staff	5%
6	Faculty development program	10%
7	Furniture	5.5%

8	Other: health, sports, canteen	4.5%
Total		100%

Source: Nepal Engineering Council (1999)

In India, All India Council for Technical Education (AICTE) is responsible to provide approval to run engineering program in deferent discipline. The Norms and standard to provide approval to run the institutions and to regulate the approved institutions is developed by AICTE. In the Norms and Standard of AICTE, quantity of following six parameters are mentioned that has to be fulfilled by the engineering institutions to run the program (AICTE, 2018):

1. Land requirement
2. Built up Area of the institutions
3. Books and Journals
4. Lab Equipments
5. Faculty requirement
6. Faculty cadre and qualification

The Accreditation Board for Engineering and Technology (ABET) has been responsible for the assurance of quality in engineering education in the United States from 1932. ABET has developed in new criteria for the evaluation of engineering programs, *Engineering Criteria 2000 (EC2000)*, which was implemented as the standard for accreditation from 2001 in United States. This new approach replaces previous guidelines and criteria that had become increasingly lengthy and prescriptive over the years, and were often seen as a constraint on curricular innovation. Thereafter, all U.S. engineering departments have started to demonstrate that besides having a firm grasp of science, mathematics and engineering fundamentals, the engineering graduates must have to possess communication, multidisciplinary teamwork, and lifelong learning skills and awareness of social and ethical considerations associated with the engineering profession.

Recently, ABET has developed Criteria for Accrediting Engineering Programs 2020-2021 for Baccalaureate Level Programs. It is based on eight criteria namely Students; Program Educational Objectives; Student Outcomes; Continuous Improvement; Curriculum; Faculty; Facilities; and Institutional Support mission, (ABET, 2021). There are definitions of each criterion to get the accreditation.

Based on the facts of establishment of big number of Higher Education Institutions (HEIs) inside the country from one side and from the other not relaying these HEIs, draining of big numbers of students for getting better quality education abroad, Quality Assurance and Accreditation Division Of University Grants Commission (UGC) has developed “A Brief Guideline on Quality Assurance and Accreditation for higher education in Nepal” in 2013 (UGC, 2013). There are three sections and nine appendixes in the guideline. The first section provides general information about QAA and procedure for application. Section two describes Criteria and benchmark for QAA and Section three is about Accreditation process.

Rajendra Kumar Joshi and Milly Joshi had jointly written a paper on “Quality Assurance in Engineering Education in Nepal: Issue and Challenges” and presented in 7th International Forum on Engineering Education (IFEE2015) that was held on 17-19 March 2015 at the University of Sharjah, UAE. Mentioning about Quality Assurance in Engineering Education, they highlight that Strict follow of academic calendar, regular conduction of classes, students admission on merit basis, continuous internal evaluation, well equipped labs, latest journals/books, research work etc are the basic requirements of internal quality assurance of education. Above all, there should be monitoring mechanisms within the system. Quality of education is evaluated with the infrastructures and its quality, environment of teaching and learning, faculty strength, class room facilities etc. Describing about the external assurance, they highlight about the role of Curriculum Development center (CDC) under Tribuvan University (TU) which is authorized body of Nepal

to provide equivalency and recognition of national and international degrees; Ministry of Education (MOE) that provides Letter of Intent (LOI) to run engineering program to the institutions and Nepal Engineering Council (NEC) that provides certificate of license to practice as an engineer within Nepal. Besides the engineering colleges within Nepal need recognition of NEC (Rajendra Kumar Joshi/Milly Joshi, 2015).

As a regulatory mechanism of quality of higher education, quality assurance focuses on both accountability and improvement, providing information and judgments (not ranking) through an agreed and consistent process and well-established criteria (UNESCO, <https://elkanacenter.ceu.edu>, 2007)

European Association for Quality Assurance in Higher Education (ENQA) prescribes some functions and procedures that have to be covered by higher education institutions for the operation of an internal quality assurance system. The areas of concern are as follow (ENQA, 2005):

- Policy and procedures for quality assurance;
- Approval, monitoring and periodic review of programs and awards;
- Assessment of students;
- Quality assurance of teaching staff;
- Learning resources and student support;
- Information systems;
- Public information.

Accreditation in higher education was started from the beginning of the twentieth century in the USA. Accreditation in the United States is more than 100 years old, emerging from concerns to protect public health and safety and to serve the public interest (CHEA, 2011). The medical professions in the UK started an accreditation process of their

professional education, and it was disseminated to other professions (Ramadan, 2011).

In Europe, the external quality assurance of higher education is done normally by expert agencies. In Europe the criteria and processes used by the external quality assurance agencies normally are expected to include (EAQAHE, 2005):

- A self-assessment or equivalent procedure by the subject of the quality assurance process;
- An external assessment by a group of experts, including, as appropriate, (a) student member(s), and site visits as decided by the agency;
- Publication of a report, including any decisions, recommendations or other formal outcomes;
- A follow-up procedure to review actions taken by the subject of the quality assurance process in the light of any recommendations contained in the report.

The Asian countries have started assessing and accrediting higher education institutions, following the western movement on it. India established the National Assessment and Accreditation Council (NAAC) in 1994 as an autonomous body to assess and accredit institutions of higher education. This was an outcome of the recommendations of the National Policy on Education (1986), and the Plan of Action (POA-1992) which advocated the establishment of an independent national accreditation body. The Chinese authorities have also introduced a more strict system of quality assessment in Chinese universities - starting from "211Project" and "985 Project" -. These projects were initiated to develop high-level research and "world class" universities. Consequently in 2004 the Higher Education Evaluation Center (HEEC) was set up by the Ministry of Education. The Center implements assessment of the quality of education in all higher education institutions in 5-year cycles.

The Washington Accord began with a group of countries in 1989 that agreed to have an accreditation system for undergraduate engineering degrees that was 'substantially equivalent'. Companion accords were also formed for accrediting engineering technologists, in the Sydney Accord in 2001 and for accrediting engineering technicians, in the Dublin Accord in 2002. Over the years, Accord members have been moving towards the accreditation of courses based on 'outputs' rather than on 'inputs' (for example, skills developed rather than curriculum content). They have also instituted a system of peer inspection of each other's accreditation processes.

Accreditation of engineering courses is aimed at ensuring consistency across educational institutions. The mutual recognition of Washington Accord signatories is intended to preserve consistency across national boundaries. (UNESCO, 2010)

Methods

The study is descriptive and is based on an analysis of available secondary sources of information on quality assurance and accreditation activities in the Nepalese context of higher education system. Such information on quality assurance and accreditations will be collected from some colleges, universities, Nepal Engineering Council (NEC) and University Grant Commission (UGC).

The study also relies on primary data. Different colleges were visited and conducted informal meeting with relevant and concerning persons of the colleges to know about the internal quality assurance system adopted by the concerning colleges. Similarly, UGC and NEC were also visited and met with responsible dignities to know about their external quality assurance system used in evaluating engineering institutions. Besides, it was also discussed with them about the provision and

practices in Nepal about Quality assurance in Engineering Education.

For secondary data relevant and appropriate documents were collected from some colleges, NEC and UGC from one side and from other related documents, research papers and articles were downloaded from different website about quality assurance of engineering education and analyzed thoroughly.

Result/Discussion

The Engineering profession in Nepal is treated as one of the prestigious profession because of the potential effects of its work in the society. It covers everything from buildings, roads, dams, bridges, airports and railways to industries, computers, software, aircrafts and satellites. Its works cover the entire spectrum of the nation, from the most affluent and urban to the most backward. Engineers have been commanding high respect in the society. Besides, due to the high demand in golf countries and in western countries Nepalese engineers are getting international jobs. So the demand of engineering study is substantially increasing. Hence, to meet the increasing demand of the engineering education, private engineering colleges were established. With the establishment of these colleges, access in engineering education has been increased substantially, but at the same time the quality of education seems deteriorating. Therefore, the issue of quality assurance and accreditation of all engineering institutions seems essential and of great importance.

With the review of documents and discussion with relevant persons of different engineering colleges, universities, NEC and UGC, the provision and practices in Quality assurance in engineering education in Nepal is summarized below.

Different colleges have their own system of operation of the institutions. Most of the colleges have their own policy and procedure on faculty recruitment, faculty development, lesson planning, and provision of extra classes in particular subjects for student upon their request, conduction and coverage of curriculum on time; all are oriented to quality assurance of the education. Most of the institutions

have the provision of separate unit like Research and consultancy, Student support and Guidance.

Acme Engineering College has developed and implemented Acme system for smooth operation of the college's activities and aimed at quality assurance of engineering education. The following given are the systems developed and implemented by the college:

1. Procurement System.
2. Item Issue from Store.
3. Communication System.
4. Class Allocation.
5. Gate pass.
6. Sell of practical components.
7. Maintenance Reporting System.
8. Reporting by the person, who attends workshops or seminar.
9. Field Visits.
10. Audio-Visual equipment handling.
11. Remunerations
12. Leaves
13. Medical and Dashain Kharcha.
14. Teachers Evaluation.
15. Students Evaluation.
16. Class Monitoring Format.
17. Monitoring and Evaluation System for Teachers and Staff.
18. Disciplinary monitoring of Students.
19. Teacher / Staff Recruitment System.
20. Guardian Coordination System.
21. Commitment from Full time Teacher.
22. Commitment from Staff
23. Commitment from Students.
24. TOR of Teachers and Staff.

The universities have also the system of periodic monitoring and evaluation of the colleges. They have developed their own checklist for this purpose.

Nepal Engineering Council has developed Check List as per the Norms and Standards for monitoring and evaluation of Engineering Colleges. In the checklist the requirements on different thirteen facilities is mentioned. The first one is Physical Infrastructure. Under this facility, there are 13 components and required areas of each component. They are Land area of the institutions; Rooms (class room, Tutorial room and Drawing hall) area; Laboratory area (10 general lab area and for five specific programs, Civil, Electrical, Electronics and Communication, Mechanical and Computer/IT engineering). Each program has different laboratories and the required area of these laboratories. For Civil engineering there are 11, for Electrical there are five, for Electronics and Communication there are seven, for Mechanical engineering six and for Computer/IT engineering six. The fourth one is Workshop area. The fifth one is Library area, sixth is administrative space, seventh is other amenities, eighth is hostel (optional), ninth is staff accommodation (optional), tenth is play field (minimum two); and last one is area for future expansion.

The second facility is Laboratory equipments. Under this facility number of laboratory requirements and details of equipments and their quantity of each laboratory is given. The laboratories are divided in two major parts namely General and program specific for five different programs. Under general there are seven different laboratories namely: Physics, Chemistry, Communication, Thermal Science, Basic Electrical Engineering, Basic Electronic Engineering and Workshop Practices. The name of equipments and their quantity is given in each of the above mentioned seven laboratories in checklist. Under specific there are five programs mentioned earlier. There are 10 laboratories (Civil Engineering Materials and Concrete Technology; Strength of Materials; Hydraulics; Fluid Mechanics and Hydrology; Surveying; Analysis of Structure; Soil Mechanics; Transportation Engineering; Environmental

Engineering; Structural engineering; and Hydropower engineering) and name of equipments and their quantity of each laboratory under civil engineering program. Under electrical engineering program, there are five laboratories (Maintenance Shop; Electrical Machines Laboratory; Measurement, Instrumentation and Control; Basic Circuits; and Power System Engineering) along with the name of equipment and their quantity of each laboratory. There are six laboratories (Electronics Engineering; Advanced Electronics; Electromagnetic & Microwave; Communication; Printed Circuit Board; and Project Work (Optional)) with the name of equipments and quantity of each laboratory under electronics and communication engineering. The forth program is mechanical engineering. There are five laboratories (Thermodynamics & Heat Engineering; Fluid Mechanics and Fluid Machines; Mechanics of Solid; Mechanism and Machine Dynamics; and Instrumentation, Control and Measurement) together with the equipments and their quantity. Under computer engineering, the checklist mentions that the colleges should manage additional required software.

Based on the need and demand for accreditation due to the rapid growth in the number and variety of Higher Education Institutions (HEIs) and programs since the 1990s in Nepal, Quality Assurance and Accreditation Committee (QAAC) was formed for the development and implementation of Quality Assurance and Accreditation (QAA) activities in higher education in Nepal in 2007. The QAA Division in UGC has been established as the permanent functional entity to undertake quality assurance and accreditation related matters and to facilitate QAAC and to perform regular activities related to QAA. The QAAC is responsible for executing quality assessment and accreditation of higher education programs and institutions. The objectives of QAA are to:

1. Facilitate higher education programs, institutions and universities to develop quality assurance mechanisms by providing formats for self-assessment, peer reviews and quality audits,

2. Recognize the contribution of the various professional councils,
3. Certify the quality of the programs and (HEIs) on the basis of reviews, assessments and audits of the programs and the HEIs,
4. Offer quality advocacy in relation to measuring the equivalency of the various academic degrees earned from the universities across the world,
5. Help the HEIs to assess their strengths, weaknesses, opportunities and threats through an information processing system, and
6. Make QAA a publicly popular move for an overall development of higher education in the country.

As per UGC, participation in QAA is a voluntary process. At present, UGC is running only Institutional Accreditation. Any HEIs which meet the following eligibility criteria can participate in the QAA process:

- HEIs must have at least 50% full time teachers
- Designation of the academic posts listed by the HEI must have been approved by the respective affiliating university.
- Executive head and Head of Departments (HoDs) must be full time teachers
- HEIs must have produced at least 2 batches of graduates or have run graduate programs for 5 years
- In the case of professional HEIs, they should be recognized by the respective professional councils and meet the minimum requirement of the councils.

The scope of QAA covers quality audit, quality assurance and accreditation on the basis of voluntary participation of various higher education institutions

including public, communities and private institutions.

QAA procedure consists of a following four-stage process, which is a combination of self-study and peer review:

Submission of a Letter of Intent (LoI)

The HEIs willing to participate in the QAA process have to submit a Letter of Intent in the specified format (LoI format is given in the website of UGC: www.ugcnepal.edu.np). QAAD will then send the manuals and guidelines to the eligible institutions to complete the entire process of self-assessment.

2. Preparation and Submission of Self-Study Report (SSR)

The eligible institution itself has to prepare the Self – Study Report (SSR). Preparation of SSR is an internal exercise for the participating institutions expected to be done with honesty, self-trust and confidence. It aims at providing an opportunity for the institutions to measure their effectiveness and efficiency, and to identify core strengths and weaknesses.

3. Peer Review

After receiving the formal SSR report from the participating institution, QAAC forms a Peer Review Team (PRT) to evaluate the QAA status based on the SSR and visit the institution and inspect the patterns of evidence to validate the SSR through observation and interaction with the people concerned in the respective institution. The team also checks the validity and reliability of the information reported in SSR. It also provides a confidential score to facilitate the final grading. The PRT report and the assessment will be discussed in the Technical Committee and will be submitted to QAAC.

4. Final Decision for Accreditation

QAAC reviews the PRT report and recommends to UGC for the accreditation status. UGC gives final decision. In case of the accreditation the certification will be valid for a period of five years. The institutions will have to apply for Accreditation and undergo a fresh QAA process after five years. However they may

apply it even before the maturity of this period and the process will be started accordingly.

QAA process is completed through the process of Self- Assessment and Peer Review using defined criteria. As currently UGC is undertaking only institutional assessment and accreditation. It has defined generic criteria only. The following given are eight different generic criteria, based on which assessment of institutions are being done by UGC:

1. Policy and Procedures
2. Curricular Aspects
3. Teaching-Learning and Evaluation
4. Research, Consultancy and Extension
5. Infrastructure and Learning Resources
6. Student Support and Guidance
7. Information System
8. Public Information

Conclusion/Recommendations

Higher Engineering Education in Nepal is still young. It has a history of about 30 years. Due to the lack of sufficient experiences, it is not progressing as per expectations. To develop engineering education at par of the international level and enhance the quality of education, quality assurance and accreditation of engineering education in Nepal is essential. Based on this reality, the initiation taken by University Grant Commission (UGC) in this regard is very commendable. Some out from 51 engineering colleges has already got QAA from UGC and remaining engineering colleges are in the process of getting QAA, based on the UGC guideline. The engineering colleges as well as the universities providing engineering education are also taking necessary actions to enhance the quality of engineering education by introducing various quality assurance and accreditation processes.

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Effectiveness of School Dropout Prevention Practices in Nepal

Jayaram Wagley

PhD Scholar, Faculty of Social Science

Lincoln University College, Malaysia

E-mail: wagley.jayaram@gmail.com

Abstract

Lots of primary school and high school students drop out each year. School dropout phenomenon has been a serious issue in the current scenario which poses a major challenge in the educational commitment of a country. The main objective of this article is to study the effectiveness of school dropout prevention practices in Nepal. The secondary data has been used in this article to find out how effectively the preventive practices are put in place and the gaps if any. So preventing school dropout has been a crucial task and campaigning successful completion of school education has been a prime concern of each and every country. Therefore the students who are at the greatest risk for dropping out of school can be identified and proper methods of bringing them back to school can be applied. The government should also start the most effective intervention programmes to reduce the dropout rates. It is equally important to track students who are at risk for school failure and to maintain a focus on students' progress toward educational standards. Various factors and indicators responsible for school dropout have to be addressed to impact enrollment status. The school dropout process is directly related to educational and socioeconomic status of the parents as well as child labour and school environment. So it is important to look upon the issues associated with dropout factors. To leave no child out of school, government as well the educators must emphasize the issues related to student mobility, alternate routes to school completion, and alternate timelines for school completion. The paper highlights the role of

government policies on positive action as well as effective public awareness programmes which will help in the reduction of the number of dropout students which ultimately keeps the students in the school and contributes to the nation's educational development.

Keywords: school dropout, preventing, intervention, effectiveness, education

Introduction

The number of students that enroll to basic level education in Nepal is very high but the number that graduate is not considerably high. Many students cannot complete the basic level education or secondary level and most of them are constantly repeating the classes. So this article is focused on the primary and school dropout phenomenon, the factors related to it and the various preventive measures put in place in Nepal.

Education

It is the basic right of every child to get education which develops their mental and physical abilities as well their personality and talents. Education is essential for the overall development of an individual as well as the nation. It is an important tool due to which people are empowered and become well-off economically and socially. Children are the future workforce and the leaders.

The constitution of Nepal ensures the right to education and every citizen is supposed to get the free education upto the secondary level. Since the school year 2009, the government of Nepal has begun to implement the School Sector Reform Programme and has restructured the education system primarily in three groups, i.e. early childhood development classes, Since the school year 2009, the government of Nepal has begun to implement the School Sector Reform Programme (SSRP), which aims at restructuring school education with basic education; grade 1-8 and secondary education; grade 9-12 (MoE, 2011)

School Dropout

It can be observed that a quite big number of students are dropping out of the school every year before they complete their education.

Dropouts are learners who temporarily or permanently stop attending school before completing an education cycle, for example, primary level or secondary level. Lekhesa (2007) view dropouts as those learners who leave school before the ultimate year of the learning cycle during which they're enrolled, which might be the initial level or secondary level or college levels. Dropouts from school are defined as young children, who enroll in class and for a few reasons apart from death leaves school before completing the grade and without transferring to a different school (Chugh, 2011).

School Dropout and its Reasons

Dropping out of children from school has become a solemn problem in many countries around the world (Young & Chavez, 2002), especially in low earning countries like Nepal. According to Lewin & Sabates (2012), although substantial number of youths has started grade school than ever before, the speed at which children drop out from school had remained high in poorer countries. More than half of the children who start primary school do not complete the full cycle of education. Nepal is a primary example where large number of children dropout from schools due to poverty and social backwardness. The school dropout simply refers to

an individual who does not complete his or her primary or secondary level education due to some reasons. Many children enter the primary school but are unable to complete their education.

Dropout Causes

Students drop out of school for a variety of reasons, including (a) poor socioeconomic condition of the parents (b) academic failure, (c) poor relationships with teachers, (d) pregnancy and other medical reasons, and (e) family or job obligations and child labour (Bridgeland et al., 2006; Croninger & Lee, 2001; Shuger, 2012). Due to the variety of reasons students drop out, school completion interventions must include multiple components, with efforts to increase student engagement at their core. It has been found that student outcomes are most likely to improve when a caring and supportive school environment is combined with a focus on learning and high expectations for student achievement (Dynarski et al., 2008).

Other factors associated with school dropout include low educational and occupational attainment levels of parents, low family income (Ekstrom et al., 1986; Chan et al., 1984). Poverty was the main reason for dropout, as a result, they work for supporting the family economy (Umesh R. Dixit, 2010). Jayachandran (2006) indicate that the major factor of dropout are children and parents who are not interested in studies, unable to cope, work for wages, salary, participation in other economic activities, attend to domestic duties and financial constraints. Another study also found out the reasons for the school dropout of girls was to take care of a home and younger siblings as both parents were working (Patel & Gandhi, 2016). A similar study associated with school dropout emerges from children's household situations such as child labour and poverty. (Sabates, 2011)

The children dropouts from school due to lack of interest in their studies; reasons the cost of a fee was too high for which they need to earn outside work for payment at the same time they need to do household work (Gouda & T.V. Sekher, 2014). Dropout was more from the families when they give a full permissive lifestyle to children of making their own decisions

about their behaviour and activities (Rumberger et al. 1990; Steinberg et al. 1989). The peer pressure influences student's dropout (Omollo & Yambo, 2017). The most frequently reported reason by scheduled tribe, scheduled caste parents for drop out of their wards is due to earning compulsion, household work, lack of interest in continuing education and failure in their examinations (Arindam Banik and Debasis Neogi 2014).

Sebatane (2009) considers disability as one of the contributing factors to primary school dropout. They stated that the lack of initial access to school for learners with disabilities and special educational needs (SEN) means most of them are able to drop out of school.

UNESCO (2011) stated that some schools in Nepal are situated so far away that travelling to and from school every day is difficult and tiring for the disabled learners and consequently they drop out of school.

Perrin (2007) maintains that the physically abused learners exhibit lower intellectual and cognitive functioning compared to learners with average intellectual and cognitive functioning on general intellectual measures. They also experience problems in specific measures of verbal facilities, memory, dissociation, verbal language, communication ability, problem-solving skills and perceptual motor skills. Academic performance is another area of substantiated difficulty in physically abused learners. Compared with non-abused learners, victims of physical abuse display poor school performance and adjustment. These abused learners also receive more special education services; score lower on reading and mathematics tests; exhibit more learning disabilities and are more likely to repeat a grade. A learner may thus feel obliged to drop out of school (Perrin 2007).

Pridmore (2007) explains those long term effects of health and nutritional status of younger learners, the implications of school enrolment; dropping out and school achievement may negatively influence learners. School-aged learners who suffer from lack of protein, energy, malnutrition, hunger or lack of certain micro nutrients in their diets do not have the same potential for learning as healthy, nourished

learners. According to Perrin (2007) these disadvantaged learners attend school less frequently, are more likely to repeat grades, dropout early, fail to learn adequately due to poor levels of attention and display little motivation and poor cognitive function.

The school environment also contributes towards dropouts due to the lack of appropriate facilities for learners with disabilities such as school toilets or play grounds which are accessible for the learners in wheelchairs.

Lack of interest, even with high rates of return from educational investment, also appears to be a strong factor influencing a student's decision to drop out from school

Dropout Prevention Practices–Worldwide

The challenge of school completion is not confined to the developed countries such as United States or the West European countries. Millions of children and youth around the world are denied or have limited access to education. For those who are fortunate to have the opportunity for some level of public schooling, it is often limited to a primary education and they don't get a chance for further education. For those who attend school, the promise for a future based on their education is dim, causing countless numbers of students to drop out of school and look for some other alternatives such as child labour or to survive on the streets.

The following points describe the various dropout prevention practices around the globe.

Mentoring

Students who are at risk of dropping out often have a variety of personal, academic, and family problems that hinder their likelihood of succeeding in school. These problems may also negatively impact students' attendance at school and when students are frequently absent, it can affect their ability to bond with others in the school environment. Having a connection to an adult in the school setting can increase students' sense of belonging in school. The teachers can play effective role in mentoring the students in explaining the importance of education.

Research on mentoring indicates that even informal relationships with caring adults can increase the likelihood that students with disabilities will graduate (Ahrens, DuBois, Lozano, & Richardson, 2010; Dunn, Chambers, & Rabren, 2004; Murray & Naranjo, 2008). Some American businesses have established partnerships with schools in an effort to upgrade the quality of education. They have counselling services which will help in preventing the students from dropping out of students and increase the number of skilled workers for the future. In these partnerships, business employees act as mentors to help develop human and social capital in at-risk children beginning at an early age so that they will graduate from high school and be prepared for post-secondary education. (Einolf 1995)

Family Engagement

When families are engaged in their children's education, children are more likely to be successful in school (Epstein, 1987, 2001). It is important that schools create a welcoming atmosphere for families and convey the message that family participation is wanted and valued. It is particularly important to reach out to parents who have low rates of participation in school activities. Holding informal school functions, such as potluck dinners, usually draws many family members and provides a relaxed setting in which teachers can develop relationships with parents. Such functions also provide opportunities for parents to network with one another. It should not be assumed that parents have the information and skills needed to help their children succeed in school. Schools should provide parents with materials that explain school rules and expectations, and adapt materials for families from culturally and linguistically diverse backgrounds (Bae & Clark, 2005). A Study was done among the 1,010 fourteen-year-old students (51% female) from the population of students attending the ninth grade of a public school in the capital city of Iceland. It is found that the students from the more authoritative families were less likely to be disengaged at school at age 15 and therefore more likely to have completed upper secondary education at age 22. Therefore there exists a relationship between parenting

practices and school dropout/graduation rate. (Blondal & Adalbjarnardottir, 2014).

Academic Intervention

Low academic performance and frequent absences may result in students being retained a grade. Falling behind with work and being retained significantly increase students' likelihood of dropping out (Jimerson, Anderson, & Whipple, 2002). Students who fail courses need support to develop academic skills as well as accumulate credits. Providing academic supports, such as tutoring, academic enrichment, and credit recovery, can help students catch up with work, improve their academic skills, and increase the chances that they will pass the required courses and high school exit exams needed to graduate (Wilkins, 2011a).

Class/School Restructuring

Students who attend large schools may feel lost and disconnected from school. When students feel little attachment to school, it is usually not a difficult decision for them to drop out. Some school restructuring programs involve smaller classes and block schedules in which students have fewer teachers. In such learning environments, teachers can focus on building relationships with students and between peers. A personalized learning environment promotes a sense of community and has long been associated with students' increased sense of belonging in school and improved academic performance (Cotton, 1996; Oxley & McCabe, 1990; Raywid, 1998). Small learning environments also enable teachers to interact with students on an individual basis, which gives teachers the opportunity to target students' interests to motivate them and be more attentive to students' areas of difficulty. Some of the European countries have developed the Personal Learning Environments (PLE) which help the students take control of and manage their own learning. They can set their own learning objectives by taking help with their teachers. Such learning requires interactive classrooms with personalized ICT solutions.

METHODS

This article mainly uses secondary data from various sources and finds out what preventive measures have been applied in the reduction of dropout students from the school. Various journal articles have been studied to discover the effectiveness of the preventive measures of school dropout.

Government Policies and Practices for the Reduction of School Dropout

This topic discusses the key government policies and preventive measures implemented to control the barriers to education.

Poverty

Poverty is a major issue in Nepal. Approximately 41.8% of the Nepalese population live below the poverty line (NLSS 2011). More than 60% of out of school children belong to this portion of population (Census 2011). Around 3.5 million girls, Dalits, Janajatis, children with disabilities, children affected by conflict, and other disadvantaged students are in a condition of being out of school status. Existing policy of government is to provide free education up to secondary level, including free textbooks. It has also provided scholarships for socially disadvantaged groups and the girls. Action plan of making education compulsory for this disadvantaged group has been endorsed. The government has provided free and regular midday meals in public primary education schools in 19 districts.

Social exclusion linked to caste/ethnicity

The non-Dalit Muslims have the highest number of school leaving students, accounting for 14.3% of total out of school students. Dalit castes such as Dom, Musahar, Halkhor, Pasawan etc. have high proportion of children not attending school. The constitution of Nepal has specified that there will be no discrimination based on religion, race, gender, caste and tribe. Vulnerable Communities Development Plan 2007 reemphasizes commitment to free education for girls and Dalits. There has been a policy which hires teachers from Dalit, Madhesi and Janajati groups. There has been the provision of scholarships for Dalit children from Grade 1 to 8 to cover stationery and uniform.

Disability

Children with physical and mental disabilities are more likely to drop the school. 30.6% of the total disabled students are not attending the school. Constitution of Nepal ensures that every citizen even the person with disabilities have right to education. The government has also provided scholarships, Braille books and other required materials provided for free. Special and integrated schools are also set up to overcome such problems.

Child labour

37% of children in the age group 5-17 years are engaged in child labour. The children in work are more likely from the poorest sector (MICS 2014). According to Annual Household Survey, 2014, 8.3% of children aged 5-9 years and 38% of children aged 10-14 years are engaged in child labour. Therefore Child Labour Act 1992 have made legal restrictions on employment of children. Kamaiya system was also banned in Nepal since 2002. The government has established various commissions and bodies to monitor and prevent child labour.

.Social norms and gender biases

Gender biasness can be observed in Nepal. Girls are discriminated than boys. The dropout number is high among girls and especially dalit girls. The government had started scholarship for girls since 1971. Girls were made specific target group in the Education For All (EFA) National Plan of Action 2001-2015. Legislation against child marriage has been adopted.

School infrastructure and staffing

The school infrastructure is not same in terms of quality throughout the country, particularly in the Terai and Mountain areas. Nepal has the highest dropout and repetition rates in South Asia at both primary and lower secondary education levels, leading to inefficiency and wastage of human resources. So a standard of number of students in each class and classroom size has been stipulated in School Sector Reform Plan 2009. After the 2015 earthquake, the infrastructure of the school has been improving. Plan for nationwide policy and implementation for education safety and making

buildings safer to different kinds of disasters, and improving the infrastructure and facilities of new schools.

Language

The non-Nepali speakers have learning difficulties. The language can be the barrier to education. So the constitution has recognized the right to education in mother tongue. Different types of 21 text books have been developed.

Emergency and Natural Disaster

Over 1 million students were affected due to 2015 earthquake. Over 1 million children in the Terai region were affected by the prolonged protests and economic blockade. The families and children vulnerable to disasters caused by natural hazards in Nepal (like floods, landslide, drought, cold wave, disease outbreaks and earthquakes) have also been affected. It has been committed nationally that schools have been declared as 'zones of peace.' Comprehensive Disaster Risk Management Plan has been put in place.

Governance

Nepal has been transformed into a federal democratic republic following the declaration of the new Constitution in September 2015. The government became decentralized and local government was also formed. The school level education has come under the responsibility of local government. So extra attention has been given on school education. (UNICEF, 2016)

School Dropout Prevention Practices in Nepal

National ECD initiatives

The EFA National Plan of Action and the EFA Core Document 2004-2009 programs in Nepal (NNC-UNESCO 2003 and MoES 2003) committed to expanding and improving ECD centres in Nepal. The ECD strategy paper (2004) and the SSRP (MoE 2009) set the target to provide ECD services to 80 percent of 3–5-year-old children by 2015. The ECD strategy also targeted to have 80 percent of new entrants at Grade 1 with ECD exposure by 2015. The government's Tenth Five-Year Plan (2002–2007) and

the three-year interim plan (2007/08–2009/10) had ECD centers as a strategy for increasing school enrolment, retention and reducing repetition and dropout rates of students. The number of ECD centres in Nepal were 35,121 as of the 2014-2015 school year (Van Ravens, 2009; FLASH Report 2014).

Constitutional Right

Nepal's 2015 constitution declared that every citizen had the right to free education up to the secondary level. The constitution also protects the right to instruction in the mother tongue up to secondary level. Grades 1 to 8 are kept under basic level education while grades 9 to 12 are kept under secondary education in Nepal. Apart from this, there are various scholarships, free textbooks and free meals.

Teacher training

In 2015/16, there were about 95.3 percent fully trained secondary school teachers. It is also found that Compared to lower grades, it is spotted that Grades 9 and 10 have lower drop out and repetition rates (3.3 percent for girls, 3.2 percent for boys). Teacher training plays important role in reducing dropout rate. (NIRT, 2016)

Non-formal Education and Lifelong Learning

The distinction between formal and non-formal education is often based on where learning takes place. Formal education primarily occurs in training establishments and often leads to recognized outcomes and qualifications. Non-formal education has intended learning outcomes, but the learning often happens in places where teaching is not the primary business. In the face of a situation in Nepal of high school dropout rates, high numbers of out-of-school children, and a high percentage of low skilled workers, and the low fit between tertiary education and labor market needs, non-formal education and lifelong learning are increasingly important in Nepal. The ability of Nepalese to adapt their knowledge and skills to the needs of the modern labor market at home and abroad will significantly determine the extent to which they can secure gainful jobs and

break the cycle of economic vulnerability. Most non-formal education happens through labor market programs, on-the-job training, professional associations, work experience and volunteer organizations. Informal education comprises learning that comes because of participations in clubs, libraries, museums, family activities, playground activities, volunteering and other arenas. In Nepal, it seems that technical education and vocational training (TVET) is conflated with non-formal education and lifelong learning. While, the overlap is justified in the cases of non-formal settings, it is important to underscore that when TVET is delivered as part of vocational streams in formal learning institutions, it is really a part of formal education. (Dahal, 2020)

Effectiveness of School Dropout Measures

Most of the dropping out students in Nepal come from the poverty and they have to work harder to make earning for the family. Nepal's adult literacy rate is low. Almost half of its population has not completed basic level education. After the abolishment of Panchayat system in 1990, Nepal has leapt tenfold in education after the establishment of many educational institutions. The dropout rate is in decreasing trend but it is not satisfactory. (Lillian Zmarzly, 2019)

There are still many things to be done. Education has not been made compulsory yet. The scholarships provided may not reach to the targeted group and the indirect costs involved make education expensive for the poor people and dropout still exists. Low education status of parents also affect the children to drop the school. The number of Dalit students in primary level is more than the number of Dalit teachers. All the students with disabilities have not been identified. Disability is still an issue for dropout since the infrastructures lack facilities for disabled students. Child labour act and different regulations are there in place to stop children to work and go back to school but in practice, these rules and regulations are not functioning well. Gender biasness is making students out of school. One-third of the school still lack the separate toilet facilities for girls. The child marriage is prevalent in many parts of the

countries. Many classrooms were destroyed due to the earthquake in 2015. There are so many things still need to be solved. Even though there are many plans and policies applied to reduce to school dropout rate, the change is rather slow.

Conclusion

It is hence studied that many students are leaving the school due to various reasons. Dropping out of school has been very common among the children from economically deprived communities. The governments in the third world countries like Nepal are trying to increase the number of enrolment in the primary and secondary level and retain them in the school until they proceed to the next level of education, but the school dropout has been a serious problem especially in the public schools in Nepal. Poverty, child labour, distance to the school, parents' intention towards education, early marriages, social deprivation, etc are the major reasons which have to be solved first and then, keeping the children in the school will not be a difficult task. Solving the contributing factors of school dropout will help to make the public policies effective.

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Integrating Values in Education: Managing Learning Crisis for Sustainable and Holistic Achievement

Romkanta Pokhrel

Ph.D. Scholar, Lincoln University College, Malaysia

romkanta@gmail.com

Abstract

This paper attempts to explore the need and importance of values integration in educational activities to mitigate learning crisis and promote sustainable learning achievement. The traditional approach, commercial motive, focus on instrumental knowledge coupled with many other contemporary issues have collectively smothered the fundamental humanistic principles of education. To avert the situation and execute the core objectives, we need to shift our focus: a shift from instrumental knowledge to humanistic-transformational knowledge; a shift from the traditional approach of supplying and storing information

to learning to deal with the real-world problems; a shift from head to heart. Values integration is an attempt to initiate and promote this shift. Rather than teaching values and moral principles under a particular subject heading, values need to be a part of everyday in-school and out-school activities. To concretize this concept, a model is proposed in this study as a holistic model of values integration via whole school ambiances and community support.

Keywords: Learning Crisis, Values Integration, Holistic Education, Sustainable Learning

Background

The International Commission on Education for Twenty-first Century writes, “Education should contribute to every person’s complete development - mind and body, intelligence, sensitivity, aesthetics, appreciation, and spirituality” (Delors et.al, 1996). This holistic approach incorporates the broader spectrum of knowledge, skills, and values as the fundamental aspects of learning. The report also recommends that an effective education builds on the four pillars of learning: learning to know - knowledge, learning to do - skills, learning to live together- relationships, and learning to be- an integrated personality. It envisions the development of a complete human capable of understanding the self and the others.

Education in its holistic approach does not focus only on acquiring knowledge and information; it focuses on developing values and intelligence for transformation. Psychologist Abram Maslow claims that “the purpose and function of education in its humanistic goal is to prepare a person for self-actualization” (Maslow, 1956). The self-actualized person can seek the meaning of life, the purpose of ‘being’ -who he is. Maria Montessori (1953) adds on this as “the best preparation for teaching is to nourish the spiritual embryo of students and make them aware of their potentials and cultivate a good attitude and moral values” (65). To achieve the holistic goal of education, our educational practices need to integrate the fundamental values in their in-school and out-school activities. Danah Zohar (2010) argues,

As an educator, we need to encourage students to think about the broader implications of why and how they can contribute to society in substantial and ethical ways that add values to our communities. I think the purpose of education– which we have lost largely in our society today– is fully to develop human beings who are good people, good citizens, good parents, and good servants to whatever they choose to pursue. (4)

Statement of the Problem

Despite being fully aware of the needs, goals, objectives, and functions of education, educators and educational institutions have limited the educational practices to an act of collecting information. The comprehensive approaches of developing students’ physical, social, intellectual, emotional, and spiritual needs are grossly ignored. This has eventually prepared a child to pass the test without any awareness of what he is learning. Bass and Good (2004) quote “a student schooled just to pass the standardized tests, however, is ill-prepared to cope with the today’s rapidly changing world” (163). This is the major problem in our education system at present.

When the focus lies in collecting and storing information, education ultimately becomes a “banking concept-students being the depositories and the teachers the depositors” as Paulo Freire (1987) argues. This concept ultimately infects teaching and learning with a ‘narrative sickness’, dehumanizes the entire process. Such an approach kills every potential and creativity of a student and creates confusion that memory is intelligence, compliance is the virtue. A student ultimately takes learning as an act of gathering information; it has nothing to do with transformation. This is another problem in our system.

John Dewey (1993) opines that teaching students just by dictating or lecturing is finally restricting the learner’s potential, intelligence, and imprisoning the spirit. When this becomes a pedagogical approach school is a bad place for children as John Holt writes. He argues that school – with a traditional approach – is a place to pacify a curious, determined, enthusiastic, energetic, skillful learner - a place to dehumanize a human and the place where what is counted and has important is what the teacher likes him to do and be.

Need and Significance of the Study

We shape our tools and afterward, we are shaped by our tools. – Marshall McLuhan

A cursory review of the literature reveals a fact that there exists a noticeable gap in our practices so far as the goal of education for holistic and sustainable learning is concerned. To revive this loss, we need to focus on the integration of values in our educational practices. This study is an attempt to add a brick on the foundation of a values-integrated approach to learning for holistic goals. Study on such a topic bears an urgent need and a great significance to make all the stakeholders aware of the fundamental objectives of education. It is equally important to make people know and realize how values help in addressing the problem of learning crisis and promote the holistic education.

Limitations of the Study

This paper is limited to qualitative studies based on information from secondary sources like – books, journals, news articles, and online sources. Due to lack of time and resources, it has a shallow coverage of the topic despite the in-depth and comprehensive nature of the topic.

Objectives of the study

The study aims to:

1. introduce learning crisis and sustainable learning
2. explore the importance of values-integration in educational activities
3. design and propose a model of values integration

Research Question

1. What role does integration of values play to achieve sustainable and holistic learning goals? And how?

Methodology

As the study attempts to answer a qualitative research question by describing and analyzing a situation or a phenomenon, I have chosen the content analysis method. This method helps me to bring the ideas on the floor and answer the – ‘what’ and ‘how’ of my research question.

Conceptual Framework

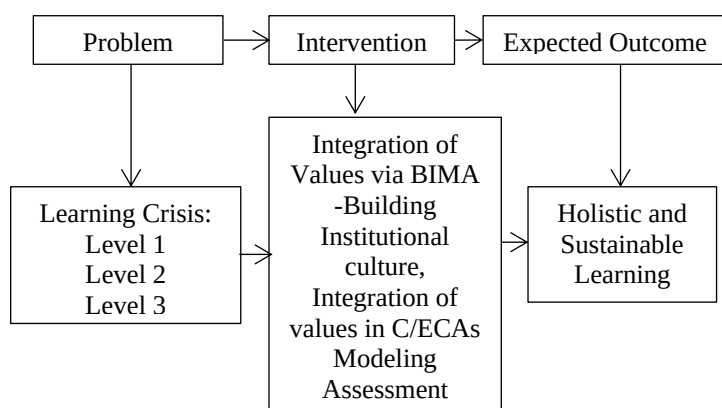


Figure 1: Conceptual Framework

Review of Related Literature

Learning Crisis and Sustainable Learning

A learning crisis is a crisis or situation where a child does not have access to learning nor an effective and conducive learning environment. This crisis takes place at three levels- *Level 1*: A significant number of children are deprived of school enrollment. World Development Report (WDR, 2018) states, “258.4 million children are out of school globally”. *Level 2*: A noticeable number drop without the basic skills of literacy and numeracy. “More than 40% of school attendees are below the basic achievement level of literacy and numeracy.” *Level 3*: Those who pass certain levels lack the fundamental values and life-skills that they are expected to learn. Following this situation, the WDR 2018 concludes that “in many countries and communities learning is not up to the standard. Mere school enrollment without effective learning is a terrible waste of precious resources and human potentials.” – a state of learning crisis.

Exploring the determining factors of this crisis, the World Bank Team in its comprehensive research has outlined four primary responsible factors for this crisis: learners’ preparation, teachers’ skills and motivation, availability of relevant institutional inputs, and the school management cum governance that bring these together. It is true in most of the situation that children do not arrive at school with readiness to learn. For different reasons – economic situation, family issues, physical and emotional issues, discriminatory attitudes, caste, color, gender, and many more – children are ill-prepared for active learning in school as well as at home. Another crucial factor causing a learning crisis is the teacher. Teachers are the most trusted person and are also considered moral agents in the learning process. Unfortunately, ‘teaching’ in many countries like Nepal, is not still a chosen profession as a result they often lack the motivation and do not even attempt for needed skills. WDR 2018 reports the shortage of high skilled motivated teachers in developing countries. In addition to learners and teachers, lack of proper management skills, insufficient infrastructural development and resources, inefficient school inputs - training and teaching materials, lack of innovative approach, and many others including family and community environment are largely responsible for the global learning crisis.

Sustainable learning is an inclusive approach aimed at producing a responsible social citizen by providing knowledge, skills, and values that address real-life problems. The concept of sustainable learning contrasts with the narrow, utilitarian, market-oriented, instrumental approach of learning. It is an educational framework for life-long, transformative values; a new and different idea of learning to make it useful to the life-process. Sterling in his 2010 publication *Sustainable Education* provides us with four worthy criteria for sustainable learning. He says,

Sustainable learning sustains people, communities, and ecosystems; is ethically defensible, working with integrity, justice, respect, and inclusiveness; is itself a viable system, nurturing healthy relationships and emergence at different system levels; and it

works well enough in practice to be able to keep doing it. (127-40)

Sustainable learning is more relevant as the goal of education is not only to acquire information and knowledge but more importantly the transformative power via its right application in a real-life situation. David Orr says, “We must recognize that the goal of education is not the mastery of knowledge but the mastery of the self through knowledge” (Orr, 1996). Here, self-mastery of learning involves developing skills of inquiry, discovery, critical thinking, problem-solving, reasoning, judgment, imagination, collaboration, and other higher-order capacities, including and especially reflection, and the disposition and discipline to make the most of them. In particular, education should equip students “with the skills, disposition, and discipline to continually learn and to apply that learning toward ends that contribute to long-term global survival, if not flourishing” (Brundiers and Wiek, 2017). This is what sustainable education aim at and for this mere delivery of content is not sufficient. We need to help students and ourselves to integrate and practice the fundamental values in the context.

Values and Values Education

Oxford dictionary defines values as “the belief about what is right and wrong, and what is important in life” (OLD). Scholars like Shaver and Strong define values as “our standards and principles for judging worth. They are the criteria by which we judge ‘things’ (people, objects, ideas, actions, and situations) to be good, worthwhile, desirable; or, on the other hand, bad, worthless, despicable” (Shaver and Strong, 19796). In this sense, values are not mere ideal prescriptions to be followed rather the principles and criteria by which we evaluate, choose, prioritize what is worth adopting and act in a just way.

In a broader spectrum, Arjo Klamer defines values from three different domains: In standard economics, he equates values with the price of goods (having use value, exchange value, and a social value). In the culturalist domain, he relates values to the quality of the work of art. The value of any work of art lies in its form –how it looks – the aesthetic part; and the content - as to how it contributes to the recipient or general public. His third domain of discussion is on moral philosophy where he links values with the moral implication of human behavior with the qualities like respect, benevolence, solidarity, honesty, etc. For Klamer, “a value-based approach should never see these aspects in isolation rather integrate them”. (Klamer, 2005)

David Throsby (a cultural economist) prescribes a set of six values that a work of art possesses or people perceive in it. Values such as aesthetic value, spiritual value, social value, historical value, symbolic value, and authenticity value determine the quality of artwork (qtd. In Klamer, 2005). Besides economic and cultural aspects, values are also associated with the pleasure that an individual experiences at different levels. Edward C Hayes writes “The things that give satisfaction, happiness, or pleasure to an individual in physical, emotional, intellectual, and spiritual domains are the real values to be adopted” (Hayes, 1913).

Hayes mentions physical pleasure (comfort and warmth or gratification of physical appetite), aesthetic pleasure (the experience of the beauty of nature, work of art, home, personality, morality), intellectual pleasure (the joy of comprehension, perceptions, insights, gratification of the instinct of curiosity), social pleasure (pleasure of our association with others like friendship, the pleasure of loving others and being loved, praising and being praised), and personal pleasure (personal satisfaction, sense of one’s personality, moral standards, success, and worth) as the five ultimate values of an individual. (Hayes, 1913)

Nature of Values: Universal vs Relative

One of the fundamental questions the literature on values asks whether the values are universal or relative. Some scholars opine we cannot have universal values common to all. For them, values are not precise especially at the individual and social level in a multicultural setting. Various scholars also claim that certain values are intrinsic, common, and irrefutable to every human so far as the role of values in behavioral change is concerned. Nick Tate argues that a pluralist society entails common values. He says, “the idea - increasingly widely accepted - that because this is a pluralist society, we have no common values, is false” (Tate, 2005). When we think beyond a narrow domestic wall, there are values common to all humanity, they are everyone’s values. Klaus M. Leisinger writes,

A core set of universal values and binding normative imperatives valid over time and across geography, cultures, and religions is available. ... Global values such as nonviolence, reverence for life, solidarity, fairness, justice, truthfulness, tolerance, equality, sustainability, respect for human rights, and integrity have no cultural boundaries – these are everyone’s values. (Leisinger, 2014)

It is not easy to make an exhaustive list of everyone’s values. However, based on the review of the literature and personal experiences, a set of values is prepared and proposed here (Table 1) in three categories: personal, social, and global. The classification is purely subjective. It is done to consolidate what values we need to integrate into our pedagogical practices.

At the personal level, everyone possesses a unique personality accomplished with physical, emotional, intellectual spiritual and moral progression. Personal values have a relationship with oneself, be it on a physical, emotional, or intellectual level. They help in the understanding of our characters, strengths, and weaknesses. Once we share our values with the outer circle, they become a part of socio-cultural values or the values of relationships. We value our relationship with other members of the community. We have shared norms, moral beliefs, and principles that are accepted by all the members that make a society function. Social values help us internalize our responsibility, relationship, and interconnectedness with various aspects of society. Moving beyond the personal and social level we realize our connectedness at the global level. *Mahaupanishada* states that we all are the members of a

global family. [अयं बन्धुर्येनेति गणना लघुचेतसाम् उदारचरितानां तु वसुधैव कुटुम्बकम् ॥] This verse states, ‘this is my own and that a strangers’ is the construction of the narrow-minded people.

For the generous hearts, the entire earth is a family. All other narrow walls of religion, geography, and politics are the construction of the narrow minds and shrunken hearts.

Table 1: Values and Value Components

Area	Values	Core Components
Personal (the Values of the Self)	Values of physical development	physical fitness, wellbeing, comfort, longevity, holistic health, reverence to life
	Values of intellectual development	curiosity, creative and critical thinking, reflective thinking, multiple intelligences, emotional intelligence, wisdom
	Values of spiritual development	peace in mind, harmony, unity, connectedness, coordination of 3H i.e. head, heart, and hands
Social (the Values of Relationship)	Values of ethics and morality	love, compassion, honesty, integrity, empathy, kindness, self-sacrifice, sharing and caring, forgiveness, righteousness
	Aesthetic values	adoring the beauty, creativity, flexibility, imagination, appreciation of work of art
	Values of social development	relationship, trust, recognition, justice, peace, tolerance, non-violence, altruism, collaboration, forgiveness, problem solving, interconnectedness, humility
Global (the Values of Common Good)	Values of global harmony	responsibility, democracy, interdependence, respect of human rights and dignity, global solidarity, world peace, mutual respect, law and order, unity in diversity, shared responsibility
	Values of environmental sustainability	human-nature relationship, interconnectedness, sustainable development, environmental health, conservation of biodiversity, climate change
	Values of economic development	quality of life, the sustainability of the resources, equity and equality, integrated development

Need and Importance of Values in Education

To educate a person in mind and not in morals is to educate a menace to society -Theodore Roosevelt

Education, in its core objective, is inbuilt with values. It is to prepare the young minds to be responsible adults. Its need and importance are felt everywhere as a tool to improve the eroding individual lives, mounting social, political, and environmental problems, and many more. “Values education can alleviate the social problems caused by youth misbehaviors and brings the positive difference in students’ moral behaviors” (Lickona, 1993). For these and many other reasons, values education - though not the panacea of all contemporary ills - is a strong tool to correct the situation. It is because “students’ behavior, performance, choice-making are directly related to the values students place upon a particular task or learning situation” (Eccles, 2005). To materialize this, we need an appropriate approach that can best impart values to students.

Bill Puka believes that values education program emphasizes two key activities as the methods of transmitting values to the students: first, nurturing the moral virtues and second promoting moral literacy – the basic knowledge of right and wrong. He prescribes six key methods of imparting values:

Instructing students directly in certain basic values and ideals; Establishing behavioral codes and enforcing them; Telling stories with moral lessons; Modeling desirable traits and values; holding up moral exemplars in history, literature, and current-day communities, extolling their traits; providing in-school and community outreach opportunities (service projects) through which students can exercise good traits and pursue good values. (Puka, 2005)

Values can be imparted explicitly and implicitly or in simpler words – teaching values directly as a subject and

integrating with curricular and extra-curricular activities. Scholars agree that it has been a mistake in the past, where teachers have been teaching morality, ethics, values, good character as subjects. Learners memorized them and passed the examinations, but they failed to put them into practice in their daily lives. As a result, there seemed to be a general decline in morality in individuals. Transformation of a person cannot take place by mere teaching but can be achieved through self-realization values from within the learner.

Models of Values Education

In response to certain philosophical and pedagogical questions regarding how can values be integrated and how do individuals internalize values, I have briefly reviewed few models followed by a proposed model.

Values Clarification Model: Developed by Lois Rath and associates in 1978, this model provides an individual with smart values selections through choosing, prizing, and behaving. This model has four key elements: i) A focus on life: students are encouraged to how their priorities reflect a hierarchy of values; ii) Acceptance of what it is: students should be encouraged to accept themselves as well as the situation around them as such. iii) An invitation to reflect further: after accepting the self and the situation as what it is, the students should be helped and encouraged to reflect on the values they have accepted under teachers' guidance; iv) Nourishment of personal powers: after a constant process of clarification of values, the practitioner gains a sense of personal direction and fulfillment. But this model doesn't speak about the role of school, teachers, pedagogy, content, methods, and peer behavior regarding how they influence values internalization. The ultimate impression this model creates is that all values are primarily matters of personal perspective, preference, or taste – a relativistic model.

Values Discussion Model: This model is based on Kohlberg's cognitive theory model. It aims at developing the reasoning and judging skills of the students in a team. More particularly, this model develops the ability to support one's viewpoints with reasoning and justification along with admitting others' supporting ideas. It works in five phases: presenting the dilemma, dividing on the action, organizing small group discussion, conducting a classroom discussion, and closing the discussion. Students conclude their moral dilemma through these processes. However, concluding classroom discussion by children is not so easy. Bill Puka writes in the possible failure of this model as "obviously, arguing for viewpoints is not the end-all of moral reasoning. Indeed, it can frustrate thoughtful understanding, jumping to speak before it hears"

Rational Building Model: Introduced by James Shaver, this model emphasizes the critical reflection on the part of the teachers and students alike in values education. Rather than imposing certain values, we need to teach specific analytical skills. Shaver has proposed some techniques of teaching values education as identification and clarification of values (what are our actual values? what we prefer to do),

label generalization (putting the chosen value in the context of moral norms), value conflict analysis (analyze the situation where two values have competing claims- for instance, while respecting the decision of majority it is equally important to listen to the voice of minority), and qualified decision making (analyzing all possible consequences of all possible criteria/alternatives and taking a rational decision). It is more directly concerned with teachers' moral decision making and seeks to clarify how teachers can help their students develop meaningful ways of dealing with moral issues.

Social Action Model: This model aims at bringing social change by active participation in public affairs. Fred Newmann introduced it to teach students how to influence public rule by developing in them the environmental competencies. According to Newmann, morality does not merely comprise judging or caring at an individual level. Actual morality is the ability to affect the desirable social changes so that the social injustice rooted in the system at the macro-level is minimized, and people develop a caring attitude and-do not overlook their moral obligations. In general, children start acting as moral agents. A moral agent according to Newmann is one "who deliberates upon what he ought to do in a situation that involves possible conflicts between self-interest and interests of others" (Newmann, 1996).

Values Analysis Model: This model is based on the cognitive development theory of moral development. The origin of value analysis is related to the philosophical ethics, moral reasoning, and application of rational problem-solving methods to current social problems. Value analysis provides a detailed step-by-step process for analyzing value questions. More specifically it is concerned with helping students to gather and weigh the facts involved in value judgments. D.H. Coombs, in *Value Education: Rationale, Strategies, and Procedures* give a detailed account of the value analysis model. This model goes through seven different steps or phases in a classroom situation: presenting the dilemma, identifying and clarifying value conflict, asking for conceivable alternatives, asking for possible consequences of each alternative, asking for evidence to support the likelihood of consequence occurring, asking for an evaluation of likely consequences, and asking for judgment as to which alternative seems the best and why. This model possesses considerable limitations as "The basic questions of where values come from, how they are internalized and how some values are determined to be better than others were never fully addressed in values analysis theory." (Zohar and Marshall, 2000)

All the models discussed here share certain commonalities but are not free from limitations. Being said there are limitations of values theories and models, we can't throw up our hands in discontent. Williams (1985) writes "a child must be educated with values no matter what. Values education will go on in the classroom whether wanted or not. To ignore values education is to ignore a major factor in the formation of what people ultimately become." (82) With this realization, this study attempts to propose a new model

of values integration – BIMA – with an assumption that values are embedded in institutional and community culture, subject matter, the pedagogical processes, the kind of role model they have, and the way students are assessed.

BIMA: A Proposed Model of Values Integration

‘BIMA’ stands for **B**uilding Institutional Culture, **I**ntegrated Pedagogical Practices, **M**odeling by teaches and community, and the **A**ssessment on KAB. It is taken as a multifaceted model of values integration in education. I believe an active implementation helps materialize the educational goals in more effective and efficient ways.

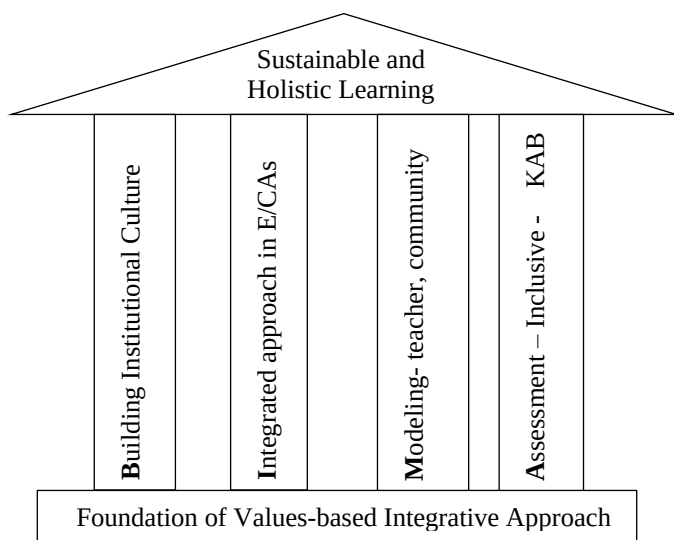


Figure 2: BIMA- A Model for Sustainable Learning

Building a whole school culture or institutional culture

Human values will not be internalized if the environment is not conducive to them. Moreover, “honest discussion of values education is sterile and counter-productive without robust reflection on the potential of teachers and their host institutions” (Hunter 1991). Hunter suggests the collective efforts of all stakeholders. Classroom discussion of values in a single subject by a single teacher will be a futile act. It is a continuous and collective process needing a great deal of practice, perseverance, and consistency. The overall environment of a school needs to have a positive influence. Schools fail to transmit values to the students if their environment (which includes all animated and unanimated aspects of school premises) is not conducive to values learning. Schools and the school environment should act as the safeguard against the forces that demoralize and decivilize an individual like poor parenting, community, and media influence.

Since values are acquired or learned better from the reflection of the surrounding, the school environment must be exemplary. If we want our children to act in a civilized manner, we need to reflect on it first. To make school a

moral or ethical place, the policies, motive, and collective approach of all the stakeholders need to be ethical and moral. Predictably, poor school culture reflects the poor values to the students.

Modeling by Teachers and Family/Community

Home is the first school and school is the second home. There must good coordination between the two. Any practice, if contradicts, negatively affects the child. So, one must be cautious to be a good role model. Among the stakeholders, the teachers play a more significant role as the students spend most of their time in direct interaction with them. For students, teachers are the best role models- a person to be trusted and followed. Values are reflected in every act of the teacher. The way he comes in, speaks, interacts, responds, and exits. Every activity and teacher’s personality has to be a role model to students. Besides, the community- family, relatives, and neighbors play a greater role in influencing a child’s behavior. The values that a child learns at school should not be contradicted with the community practices.

Integrating values with co-curricular activities

Co-curricular activities ranging from morning assembly to different club activities, house activities, seminars, workshops, elocutions, yoga and meditation, cultural programs, sports, field works, community services, and others help students gain practical knowledge and socialization. In doing so, they also learn various values connecting to real-life situations. Researchers have discovered a positive value component in co-curricular activities. Lickona, based on his studies of character education in schools, opines that by facing challenges outside the classroom “students develop a practical understanding of the requirements of fairness, cooperation, and respect” (Lickona, 1993). Holland and Andre concluded from their study that students can learn cooperation, participation, and respect for others when they participate in extra and co-curricular activities.

More importantly, every student cannot do equally well in curricular activities and might feel inferior. Extracurricular activities can help teach positive values to this group and overcome their inferiority complex. This is the greatest value that one learns by exposing the self via an activity of his choice. Many extra-curricular activities like relief and rescue activities during calamities, a campaign against disease or any social evils, service in orphanages/ old age homes, community sanitation campaign, scout camps, rallies for awareness programs, etc. can be the best medium to inculcate values. The values associated with their personal development and relationship with others can thrive via all these activities.

Community Service cum Experiential Learning

Mere understanding the concept of values does not guarantee its internalization no matter how beautiful the concept is. To internalize the concept, one must integrate the concept into the real-life situation—experiential learning. Experiential learning is done by the first-hand experience of

the learner. The values learned via experiences become life-long, meaningful, and actualized as one's own. Experiential learning is far better than imperative learning in terms of values internalization. Values cannot be forced upon the learners though with a good intention of the imparter. It is more internalized if the learner agrees with the value said and experienced by the self. Values can be shared and argued but cannot be imposed. They should be learned by interaction, observation, questioning, and practice- truly experiential learning.

Community service learning, as a part of experiential learning, can also be made a pedagogical tool as it can capture the values of social responsibility while reinforcing academic learning. It contributes to a perfect socialization process of the students. It entails a community activity or project that links hands-on experience to course concepts. According to Kolb (1984), "the first hand or concrete experience transforms into knowledge through reflection, it develops a meaningful framework for new knowledge and the testing of this knowledge in different situations."

Experiential learning or service seeks to foster civic values. It helps students to have an active intellectual and emotional engagement. The body of knowledge gained in the real-life situation is the main aspect of experiential learning.

Disciplinary Integration

As every educational activity is values-laden, all academic disciplines are the potential of imparting values in varying degrees.

Language and Literature: Language and literature can best connect the texts and their characters to real-life situations of the learners. Teachers can associate and at the same time disassociate the students from the character to teach certain values. Questions like do you think character 'A' is right in doing so? What would you do if you were in character 'A' or 'B's place? Students can identify what is wrong in the content and character and correct the wrongs. In doing so, they learn values of right conduct, responsibility, and many more. They learn what is fair, what the right way of doing things is, what behaviors people generally don't like, and how others are to be treated. These aspects ultimately help students develop their codes/values - the crux of values in education.

Social Science: Contents of social sciences are directly related to the social, cultural, economic, environmental, and political aspects. Social values and the values of relationship can best be integrated via these subjects. Values of family life, community responsibilities, environmental sustainability, patriotism, sustainable economic development and equality, cultural diversity, the beauty of harmony and connectedness, etc. can be imparted in different courses under social science.

Natural Science: Everyday science can help connect the theoretical concept with our every activity and add values to them. While teaching animal dissection, they can be asked to think about the values of reverence to life, respect to the non-human world and in the due course find the

alternatives of animal dissection. Similarly, the advantages and disadvantages of modern medical science like genetic engineering, human cloning, its ethical aspects, etc. can also be discussed in science classes. Besides, the physical and environmental health, healthy habits, physical fitness, and the comfort that science has brought to human life, etc. can help students internalize the recent updates and also the negative impacts the development of science and technology in society can be discussed in science classes.

Performing Art: Fine arts, music, drama, dance, paintings, etc. help students develop aesthetic values and capable of artistic expression of a different dimension of human culture. The values of connectedness, beauty, harmony, fairness, respect to culture, tradition, and practices, promote multiple intelligences and emotional intelligence. Values can best be imparted through various genres of Performing Arts.

Assessment

Assessment is generally taken as a tool cum process to evaluate the learning achievements of students. It is also an effective medium to integrate values in teaching-learning activities. Moving beyond cognitive evaluation, priorities need to set on evaluating the affective domain of human personality. Berman and Graham (2018) mention three tiers of assessment:

Assessment *of* learning occurs when teachers use evidence of student learning to make judgments about student achievement against goals and standards. Assessment *for* learning occurs when teachers use inferences about student progress to inform their teaching. Assessment *as* learning occurs when students reflect on and monitor their progress to inform their future learning goals or when the assessment task is also a learning task. (p. 97)

Students' assessment, particularly concerning promoting holistic and sustainable learning, should focus on the knowledge, attitude, and behavioral aspects of students. Project-Based Learning, case studies, situation analysis, etc. can help in evaluating students' attitudes and behavior along with knowledge in a better way. The projects directed towards connecting the text with the context, help students solve academic as well as real-life problems.

Conclusion

Values education is not a separate discipline to be included into national curriculum. Instead, it is an approach or an educational philosophy to be integrated into our pedagogical practices to bring the fundamental aspects of being human into the real life situation. It is not an educational program to be graduated to join a profession in life rather a means to pursue the purpose of life. Integration of values in education, in a long run, helps to improve student's learning, develop an integrated personality, interpersonal relationship, self-management, progressive school outcomes. To a great extent, it helps to minimize the learning crisis (the third level of crisis) and achieve the basic functions and educational goals. When values integration

becomes a part of everyday school activities, it prepares a student to deal with the outer world in a more humanistic way. The proposed model inculcates values explicitly and implicitly. But the most important thing every educator and teacher needs to internalize is imposed and instructed values cannot be life-long. Students learn and also pretend of following just for academic purposes but never make it a part of their lives. To make the values a part of life, they should be reflective of every in-school and out-school activity.

Effective values integration ultimately helps overcome the educational ills brought to us by the modern sense of progress and rationality. It also helps to minimize the learning crisis at different levels as it makes students and parents feel the importance. In this process, the fundamental human values that are dormant need to be activated via different models and approaches possible. An individual who is guided by values doesn't only do well in his study and career but also transcends the individualistic, self-centered lifestyle, can manage his life in a better way, becomes fully aware of his responsibilities, and maintains a good relationship with others. Moreover, to materialize the educational goals set by UNESCO and many other national and international policy documents, the national curriculum, and local needs, values integration plays a significant role. For all these reasons, the foundation of all these traits i.e. schooling can never deviate from values-based approaches, all our educational practices need to be values-laden not only policies.

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The pricing is a tool of controlling the alcohol consumption

Yeak Narayan Sharma

Lecturer Tribhuvan University, Nepal

Phd. scholar, Lincoln University, Malaysia

Email:sharmayeknarayan@yahoo.com

Abstract

Background: Increasing the price of alcohol means sinking the affordability of alcohol, it is a most effective strategy for controlling alcohol consumption and minimizing harm.

Uses of data: the data are review meta-analyses and systematic reviews of alcohol

tax/price effects from a decade and recent evaluations of tax/ price policies in the UK, Canada, Australia and Nepal.

Areas of covenant: Whereas the amounts of price effects differ by sub-group and alcoholic beverage type, it has been constantly shown that increases in price enforce on reductions in alcohol consumption.

Areas of argument: There remains, however, a lack of consent on the most suitable taxation and pricing is vary in many countries because of concerns about effects of consumption level and income level and disagreement on policy design between parts of the alcoholic beverage industries.

Emergent points: Emerging developments in research highlight the significance of gaining accurate alcohol price data, reducing bias in assessing price sensitivity, and investigative the impact on the substantial drinkers.

Further developing the research: There is a need for further research focusing on the

substitution effects of taxation and pricing policies, estimation of the true tax pass-through rates, and empirical analysis of the supply side response (from alcohol producers and retailers) to various alcohol pricing strategies.

Key words: Pricing policy, price elasticity,

alcohol taxation, minimum unit pricing

Background

Detrimental use of alcohol results in 3.3 million deaths in world every year and represents 5.1% of the global problem of disease.¹ While there is not a singular determinant of this problem, it is broadly known that alcohol has not ever before been as manageable, available and reasonable as it is throughout the world today.² A level of scientific research has proven that sinking the affordability of alcohol (by increasing its price) is the most effective and least costly strategy for consumption of control alcohol and decreasing the associated health harms.^{3,4} World Health Organization (WHO) recommends that governments should implement taxation and pricing policies which increase the relative cost of alcohol as an essential part of a comprehensive public health response to alcohol-related harm.⁵

Recent year, interest among on policy makers making a tool, pricing policy support or controls consumption and reducing harm of alcohol. In Canada, the level of implementation and the health effects of decades old policies that regulate minimum prices for alcohol are now well documented.⁶⁻¹¹ The great appeal of these policies from a public health perspective is that they reduce the availability of the cheapest alcohol often favored by the heaviest drinkers.⁶ Importantly, several Canadian provinces set minimum prices based on the alcohol content of the product, thereby discouraging consumption of higher-strength products while encouraging consumption of lower-strength products.⁶ Similar policies have been implemented in a small number of other countries, such as Russia for example, where a minimum price for vodka was introduced in 2010.¹² Legislation has also recently been passed in Scotland to implement a 50p per unit minimum price on alcohol, though it has not yet been applied due to a legal challenge led by the Scotch Whisky Association.¹³ In some US states, such as Kansas and Ohio, governments have set minimum mark ups or profit margins for wholesalers and retailers of alcohol, which effectively establishes a minimum price.¹⁴ Around the world, many governments are also continuing to use traditional alcohol tax systems to increase the price of alcohol. In 2015, the government of Belgium increased taxes on beer, wine and spirits by 8%, 31% and 41%, respectively.¹⁵ Across Eastern Europe, the negative health and social consequences of alcohol have already reached epidemic proportions,¹ and in other parts of the world, particularly China, the worst may be yet to come as consumption levels begin to rise, while adequate taxation and pricing policies lag well behind.¹⁶ The prevalence of drinking, patterns of use, and rates of alcohol-related harm in the population are shaped by a mix of micro and macro-level

determinants such as the age and sex of individual drinkers, the historical, religious and cultural place of alcohol in society, and 'upstream' modifiable factors such as the affordability, availability and marketing of alcohol and the policy and regulatory context (see Fig. 1). A public health approach draws attention to these upstream sources of problems, and the upstream solutions, rather than concentrating exclusively on the individual behavior of the drinker. A focus on role of prices is an especially important part of this approach because prices can be directly modified through government policy intervention and can effectively change both total population and individual drinking behavior. Taxing alcoholic beverages according to alcohol (ethanol) content (known as volumetric taxation), the beverage size, or its value, is the most commonly applied policy intervention designed to alter prices.⁵ However, the extent of the price change depends not only on the method and rate of taxation, but also the extent to which the full cost of the tax is passed through to real prices faced by consumers.⁴ The effect of taxes on real prices also depends on whether tax rates are adjusted over time with inflation.⁴

Taxes can represent a substantial component of the price of alcoholic beverages. However, production costs, tax rates and retail prices often vary considerably between alcohol beverage categories, resulting in large price differences between beverage categories regardless of their alcohol content and propensity to cause harm.² While this is the reality of free-market competition in many countries, in some jurisdictions there are policy controls that regulate the minimum retail price of alcohol.

For example, in all Canadian provinces, except for Alberta, government controls off-premises sales of at least one type of alcoholic beverage, and under these arrangements it is therefore able

to regulate the floor price beneath which products may not be sold.⁶ Nordic countries (Finland, Iceland, Norway and Sweden), several US states and a number of Indian states as like Nepal also operate partial state monopolies on the sale of alcohol.²

This review summarizes the findings of recent meta-analyses and systematic reviews on the estimated effect of taxes and prices on alcohol consumption published over the past decade. Combined, these include more than 1000 estimates from more than 200 studies. We also draw upon recent examples of alcohol

tax/pricing policy evaluations from the UK, Canada, Australia, USA, India and Nepal noting that these represent a small, albeit important, selection from the large body of international literature. We focus on the UK, Canada and Australia because they are jurisdictions where minimum pricing policies have received considerable political and research attention in recent years. We highlight some areas of controversy and methodological developments in the empirical research and suggest specific areas for timely and policy relevant research.

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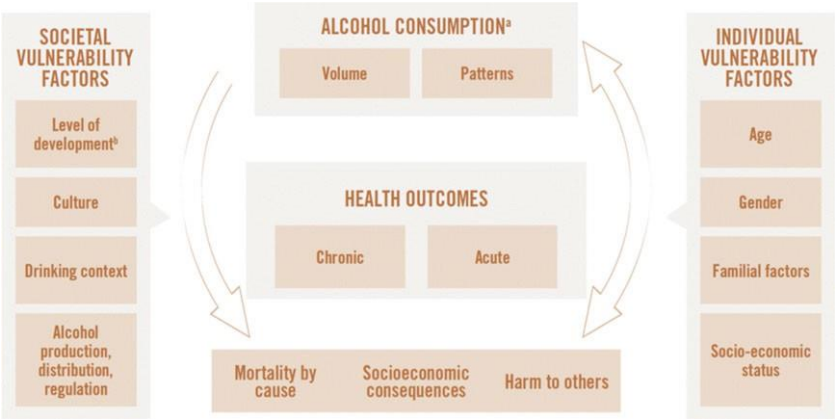


Fig 1 Conceptual causal model of alcohol consumption and health outcomes. (a) Quality of the alcohol consumed can also be a factor. (b) Development of health and welfare system, and economy as a whole. The figure is based on references ^{17,18} and originally appears in refer- ence ⁵. Reproduced with permission.

Areas of Covenant

Alcohol price increment reduces its consumption

The empirical literature has consistently found that increasing the price of alcohol leads to a reduction in consumption.^{4,19–21} The magnitude of reduction is captured by price elasticity of demand, the change in consumption of alcohol as a result of a unit change in its price, keeping all other factors (e.g. income, prices of other products)

constant. Accurate estimates of price elasticity represent a critical input for the design of alcohol taxation and pricing policies, because they indicate how much prices must increase in order to achieve the intended reduction in consumption.⁴ Meta-analyses and reviews of estimates from a large body of international empirical research show that a one per cent increase in the price of alcohol will, on average, reduce demand for alcohol by around half of one per cent (see Table 1). The magnitude of elasticity differs for different population

groups, but its sign is always negative. Meta-analyses show that price increases are slightly less effective at reducing drinking among young people compared with the general population, and male drinkers are slightly less responsive than female drinkers to price increases.¹⁹ Despite a perception that the heaviest drinkers may not be affected by tax and price increases, Wagenaar's meta analysis of estimates from 10 studies found that, overall, heavy drinkers are price responsive, albeit less than the general population, with a mean price elasticity of demand of -0.28 .²¹ However, other reviews of research findings in this area obtain mixed results, with Nelson's recent review finding that only two of the 19 studies he includes show heavy drinking adults to be significantly and substantially responsive to prices.²²

Response on price variation with beverage type

The evidence from several meta analyses suggests that beer has the most inelastic demand (i.e. is the least responsive to price changes) among different types of alcoholic beverages, with an average own price elasticity close to -0.3 . This reflects that beer is almost treated as a staple 'food' in populations where most published estimates have been derived.² On the other hand, the estimated own-price elasticity of demand for wine and spirits are relatively larger (around -0.7), indicating greater responsiveness to price changes compared to beer. The estimated price elasticity of demand for ready-to-drink (RTD) spirits is generally similar to that for all spirits.^{23,26} The price elasticity of alcohol may also vary depending on the place of purchase, with studies showing alcohol purchased off-

trade (i.e. consumed away from the licensed premises) is more price-responsive than alcohol purchased on-trade (i.e. purchased and consumed within a pub, bar, restaurant).^{26,27} In summary, the empirical evidence consistently shows that an increase in the price of alcohol leads to a reduction in the quantity consumed, and this effect holds for different population groups, different categories of alcohol, and for off-trade and on-trade purchases.^{19–21,26} The magnitude of reduction, however, differs considerably.

Areas of Argument

Lack of consent on the most suitable taxation and pricing policy

Globally, it is well established that increasing the price of alcohol is an essential strategy for reducing alcohol consumption and harm; more than 90% of countries impose some form of taxation on alcohol.¹ Yet, in practice, there remain considerable disagreements on the most appropriate taxation or pricing policy to apply in different contexts, and hence policy implementation is uneven around the world. In countries such as England and Australia, for example, much of the disagreement originates from concerns about the potential for disproportionate increases in the financial burden of taxation and pricing policies on the lightest drinkers, whose consumption is considered to pose relatively small individual health risks and negative externalities to society compared with the heaviest drinkers.^{28,29} In addition, concerns are raised that any increases in financial burden from higher taxes and pricing policies may be borne disproportionately by poor households.^{30–32}

Table 1 Estimated own-price elasticity of demand for alcohol: findings from meta-analyses and reviews of international estimates

	Total alcohol	Beer	Wine	Spirits
Collis <i>et al.</i> (UK only) ²³		-0.40	-0.86	-0.72
Elder <i>et al.</i> ⁴	-0.77	-0.50	-0.64	-0.79
Fogarty ²⁰		-0.33	-0.55	-0.76
Gallet ¹⁹	-0.50	-0.36	-0.70	-0.68
Rabinovich <i>et al.</i> ²⁴	-0.32			
Ruhm <i>et al.</i> ²⁵	-0.30			
Wagenaar <i>et al.</i> ²¹	-0.51	-0.46	-0.69	-0.80

Notes: Values shown are mean estimates, if available from the published source. Otherwise, median estimates are shown.

Despite the potential revenue gains for government from higher alcohol taxes, officials are often reluctant to raise alcohol taxes fearing increased illicit alcohol production, cross-border smuggling and substitution to more harmful alternative substances when the relative price of alcohol increases.³² A minimum unit price policy is seen to potentially have additional downsides. For example, in countries without government monopolies on sales, there is a possibility of losing revenue to alcohol producers and retailers because the profit margins on some of the cheapest products will increase when prices are inflated to the minimum level. However, UK studies estimate that, overall, minimum unit pricing policies will be revenue neutral because there will be some increases in sales tax revenues (e.g. Value Added Tax (VAT) applied to the new minimum prices), which will offset most losses in alcohol tax revenues from the reductions in overall consumption.³³

There is also disagreement and division within the alcoholic beverage industries on the most appropriate taxation and pricing policy arrangements, with the sectors that perceive they will be most adversely affected (e.g. producers and retailers of cheap alcohol)

expressing more opposition to particular taxation and pricing policies than others.³⁴ These divisions can be heightened where there is a history of government policy favoring one beverage category over another with tax concessions (e.g. the relatively low tax on wine in southern European countries), and where specific categories are taxed higher because of a perception of greater health risks (e.g. the relatively high tax on youth-oriented ‘alcopops’ in Australia and Germany). A further obstacle to policy change in many countries is the low level of support among voters and politicians for increasing alcohol taxes/prices.²

Differential policy effects by consumption level

There is a growing literature addressing the differential impacts of various taxation and pricing policies by consumption level. A modelling study using data on alcohol expenditure by households in England found that a 10% general price increase would be similarly effective as a £0.45 per unit (10 ml ethanol) minimum price policy in reducing consumption, health-care costs, and health-related quality of life losses in all population subgroups.³³ However, the minimum price policy would achieve these health

improvements with much lower costs imposed on the lightest drinkers (£8.70 per person per year) compared to a general price increase (£17.10). A related UK modelling study of how various pricing policy options would impact consumers reported similar findings, showing that a minimum price of £0.50 per unit would lead to a small cost increase for the lightest drinkers (£12 per drinker per year) compared to the heaviest drinkers (£163).²⁸ Furthermore, the reductions in consumption would be greatest among the heaviest drinkers (−10%) compared to the lightest drinkers (−4%). An Australian study estimated that, despite the concerns mentioned above, neither a minimum unit price policy (A\$1 per standard drink) (12.67 ml ethanol) nor a uniform volumetric tax on beer and wine (A\$42 per liter of alcohol) will have a large impact on the annual costs for the lightest drinkers.³⁵ However, these policies will lead to increased costs for the heaviest consumers, and importantly, a substantial reduction in their estimated purchase volumes. These studies suggest that strategies that increase the cost of the cheapest alcohol, which is favored by the heaviest drinkers, are likely to be the most effective policy options for reducing heavy drinking levels and harm without ‘unfairly’ impacting on the lightest drinkers. Furthermore, the emerging research indicates that despite the addictive nature of alcohol, there is evidence that the heaviest consumers do respond to price changes. A study which examined the potential effects of implementing a A\$2 minimum unit price across the entire distribution (quantiles) of alcohol purchases found that price responsiveness is significant even at the high end of the distribution (i.e. estimated price elasticity of −0.16 at the 97th percentile of alcohol purchase), translating to large reductions in the estimated volume of alcohol purchased (−0.9 standard drinks per day).²⁹

Differential policy effects by income level

The consistent finding in the above studies, that the heaviest consumers are likely to be the most affected by policies that increase the price of cheap alcohol, has a direct implication for how these policies impact across income groups. A study that modelled the likely impact of a £0.45 minimum unit price policy across consumers of different incomes and drinking levels in England found that irrespective of income, the impact of the policy on the lightest drinkers was negligible.³⁶ However, there would be a substantial impact on the heaviest drinkers, and especially for those on low incomes, as this group purchase more alcohol at less than the minimum unit price threshold compared with other groups. Offsetting these burdens on low-income heavy drinkers, however, is the substantial reduction in the estimated volume of consumption by these drinkers and the subsequent health gains in terms of reductions in alcohol-related morbidity and mortality. This highlights the importance of weighing up both the likely financial burdens and the health gains of pricing policies when assessing their impact on the poorest consumers. Another UK study which compared the impacts of different alcohol taxation and pricing policies for socioeconomic groups found that volumetric taxation and a minimum unit price policy outperform both a value-based tax or an increase in current taxes in reducing health inequalities.³⁷ Importantly, they find that the two better performing policies would target heavy drinking without penalizing people with low incomes who consume alcohol lightly. A study of the effects of current and alternative alcohol taxation and pricing policies in Australia shows that existing alcohol taxes do not disproportionately

impact on the lowest income consumers, and that the financial and behavioral impacts of alternative policies for this group are mostly small and concentrated among the heaviest drinkers.³⁸ Overall, they show that policies that increase the cost of the cheapest alcohol, such as a minimum unit price, can be effective in reducing alcohol consumption, without having highly regressive effects. Here, regressive means an increase in costs that is higher as a proportion of income for the poorest households compared with the wealthiest.

Recent developments

There have been two important developments recently in research on the price elasticity of demand for alcohol: obtaining quality price data; and, controlling for the confounding nature of price when estimating elasticity.

Obtaining accurate alcohol price data

A critical issue in studies that estimate the elasticity of demand for alcohol is the quality of the price variable, which can vary due to difficulties in measuring and defining alcohol prices. For example, one way of defining price is to use self-reported surveys where individuals recall the quantity of alcohol consumed and total expenditure on alcohol in past 2 weeks. Here, the price paid is calculated as a unit value, by dividing total expenditure by quantity. However, such a proxy measure of price is likely to suffer from measurement error and reporting bias, and any demand elasticity derived from such variables can be misleading. Several studies based on US data use the Cost of Living Index (COLI) data that reports prices of beer, wine and whisky from 120 to 300 large and medium cities in the US. However, these prices are also likely to suffer from measurement error and contribute to bias in

elasticity estimates as they are collected for a single brand and do not capture the variation in 'quality' of alcohol consumed. Ruhm *et al.* estimate and compare demand elasticity using alternative measures of the price of alcohol and suggests that price information obtained from scanner data is the most suitable to accurately calculate price elasticity.²⁵

A number of recent empirical studies have moved in this direction, using scanner data to estimate the price elasticity of alcohol. Scanner data typically includes a unique level of fine detail on individual household alcohol purchases that is not provided in other publicly available population survey datasets, such as the type of alcohol purchased, brand, quantity, size, flavour, the price paid, and whether it has been purchased as a multi-pack. Scanner data is routinely collected by market research companies, such as the AC Nielsen Company, for example, who maintain a large panel of household shoppers that are given a barcode scanning device to scan all food and beverage items they purchase from supermarkets or other retail outlets. The main advantage of this data is its accuracy. A validation study of scanner data in the USA found that households reported single purchases 99% accurately and multiple purchases 86% accurately (when checked against stores' sales records).³⁹ Ruhm *et al.* show that elasticity estimates are sensitive to the source of price data, and that demand elasticity calculated using price information obtained from scanner data is relatively lower than those estimated using other data sources.²⁵ However, it should be noted that, usually, this data provides information exclusively about off-trade alcohol purchases, which is only part of total alcohol purchases in the population. Another potential limitation of scanner data is that the purchaser may not be the consumer of the

alcohol, or may inaccurately record purchases. There may also be bias in the scanner survey enrolment (see Appendix in Sharma *et al.* for more details²⁹).

Reducing bias in estimates of alcohol elasticity

The use of alcohol prices from scanner data has also led to changes in the methodologies used to estimate elasticity, as these prices may be confounding or endogenous, which can bias the elasticity estimates. Bias can arise because some variation in prices reported in scanner data may be due to the characteristics of individuals who purchase alcohol. For example, the same brand of alcohol sold in stores located in higher socioeconomic areas is likely to be relatively more expensive because the willingness to pay by shoppers in these areas is expected to be higher. Similarly, large family households who buy multi-packs may pay lower prices for the same brand of alcohol compared to single person households who purchase an individual product only. Thus, some of the variation in the price of alcohol purchased is due to household characteristics and preferences, and ignoring this might lead to finding a misleading relationship between the price and quantity demanded (elasticity) of alcohol. A recent study by Sharma *et al.* controlled for this endogeneity using an area level price index (generated from scanner data prices) and found that ignoring endogeneity of prices overestimates the elasticity of alcohol.²⁹

Interpreting elasticity values

The low average size of price elasticity values for alcohol often gives the impression that an increase in price will lead to very modest decrease in alcohol consumption. However, given that pricing policies are primarily targeted towards very heavy and addictive drinkers with high levels of consumption, the actual magnitude of reductions in consumption and associated health gains can

be significant. This is because even though the lightest and heaviest drinkers may respond to price changes at similar proportions, the change will be much greater for the heaviest drinkers in terms of alcohol volume. The effects are also likely to reflect important differences between lightest and heaviest drinkers in terms of drinking location and product preferences. For example, the study by Sharma *et al.* using scanner data and controlling for endogeneity in prices found that implementing a \$2 MUP policy will lead to a modest percentage reduction of around -17% in alcohol off-premises purchase volumes.²⁹ However, while this percentage change translates to a small magnitude of alcohol for the lightest drinkers, for heavy drinkers it amounts to a per capita reduction of almost 1 standard drink per day. Thus, research is increasingly recognizing the importance of showing how alcohol pricing policies can target the heaviest alcohol consumers, particularly those who purchase large volumes of very cheap alcohol. For example, applying a A\$1 per standard drink MUP policy to cheap bulk wine in Australia, which currently costs around A\$0.33 per standard drink, would lead to a 300% price increase and, combined with the estimated price elasticity of alcohol, would result in significant reductions in alcohol consumption and potentially deliver considerable health gains to society.³⁵ Empirical studies consistently show that increasing the price of particular alcohol products that are known to be associated with harmful drinking patterns can reduce alcohol problems in the population. For example, a study of the effect of a one-off 70% increase in the tax on 'alcopops' in Australia in 2008 found that the tax increase was associated with a reduction in rates of alcohol

related harm among males aged 19 years and younger.⁴⁰

Areas timely for developing research

The existing literature has mostly focused on own- price elasticity of alcohol. However, there is a possibility that while an increase in the price of spirits, for example, will reduce consumption of spirits, it may also result in consumers switching preferences towards substitutes, such as beer for example, and thereby increase consumption. Such behavior is captured by the cross-price elasticity of demand for alcohol. That is, the impact of an increase in the price of spirits upon the consumption of beer, for example. The total price effect will then be a combination of these two effects (own- and cross-price elasticity's), and an increase in beer consumption will offset to some extent the decrease in spirits consumption. Such information is imperative to analyses the full impact of any taxation strategy or pricing policy. However, at present there is very limited evidence on cross-price elasticity. While some studies indicate that cross-price elasticities are mostly small and/or insignificant,²⁶ and that most substitution is only significant between on- and off-trade alcohol of the same type,²⁷ there remains considerable scope for further research in this area, requiring good

quality data on alcohol prices, purchasing and consumption.

Another effect of taxation strategies and pricing policies, which is related to the total price effect, is the income effect. An increase in the price of alcohol reduces the real income of the household and thus can affect their alcohol consumption, the magnitude of which depends on the 'income' elasticity of alcohol. The empirical literature on income effects is relatively sparse compared to the large body of research on price effects. In particular, there is a need for estimates of income elasticity for heavy drinkers, as elasticity estimates at the sample average only are not sufficiently detailed to inform policy. Ideally, estimates of the income effect of taxation and pricing policies should be calculated across the entire distribution (quartiles) of alcohol consumption.

Most modeling studies of alcohol taxation and pricing policy changes assume a 100% tax pass-through rate. That is, they assume that the full value of the tax increase will be passed on to consumers by the producers and retailers. However this might not always occur, as it depends on the competitive structure of the market.^{24,41} This gap in the literature needs to be filled by research which formally analyses supply side responses to alcoholic taxation and pricing policy changes.

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24th International Conference on IT Applications and Management

THEME: TECHNOLOGY-BASED DISTANT COLLABORATION

On-line Conference February 18, 2021

By International ITAM Society, Korea Data Strategy Society

Conference Plenary Session (February 18, THURSDAY)

Zoom Topic: ITAM-24 On-line Plenary Session

Zoom access: <https://zoom.us/j/91332666103?pwd=K2ZyUmhPb3B5TGxzTGxBdXhPMmxqUT09>

Meeting ID: 913 3266 6103 P Code:8dd0ft

Time	Plenary Session Program
16:00 ~18:00 (East Asia time)	Session Chair: HeeSun Kim(Yonsei Univ., Korea) Opening Announcement - Jung Seung Lee (Chair of Org. Committee, Hoseo Univ., Korea) Online on-the-spot greetings among participants. Congratulatory Remarks - Parag Mankeekar (Founder and CEO, RealLive) - Upinder Dhar (Vice Chancellor, SVVV, India) Inauguration Greeting - Myeong Gil Choi (President of KDSS, Chung Ang U., Korea) - Sateesh Kumar Ojha (Publication Chair, Lincoln Univ. Nepal) - Santosh Rangnekar (Advisory Board of the Conference, IIT Roorkee, India)
07:00 ~ 09:00 GMT	Keynote Speech 1: Yong Duk Cho (Former Samsung v.p. Technology Planning) Theme: Learning from Samsung's Technology Strategy Keynote Speech 2: Yanki Hartijasti (Univ. of Indonesia) Theme: Back to Campus: Sharpen Your Mind in time of Crisis Keynote Speech 3: Kanes Rajah (Chairman, CEPD London) Theme: Leadership and the New Abnormal for UK-Asia after Brexit and Covid Valedictory Remark - Namjae Cho (Chairman, International ITAM Society, Hanyang U. Korea)

24th International Conference on IT Applications and Management

THEME: TECHNOLOGY-BASED DISTANT COLLABORATION

On-line Conference February 18, 2021

By International ITAM Society, Korea Data Strategy Society

Technical Sessions (Access by session by track, <http://www.itamsociety.org/>)

Time	Track A	Track B	Track C
Session 1	Session A1 Entrepreneurship and Family Business	Session B1 Digital-based Innovation	Session C1 Work Environment
	How Top Management Team Diversity Affects Innovation and Company Performance? Anthony S.C. Tsui (Zhuohai Bright Ocean Edu.), Bernard Lee (The U. of Oxford, UK), Oliver H.M. Yau (Open U. of Hong Kong) Analysis of Factors that Affect Successor's Willingness in a Family Business: Using the Relationship of Trust as Mediating Variable Giseob Yu, Namjae Cho (Hanyang U., Korea) A Case study on Building Trust on Succession in a Family Business: Using Eisenhardt Case Study Method Giseob Yu, Namjae Cho (Hanyang U., Korea) The Role of Youth Entrepreneurship for Economic Development in Nepal Gopal Bahadur Bhandari (Lincoln U. College, Malaysia)	The Success of Smart Factory Adoption: Firm's Dynamic Capability Perspective Gyeong-min Kim, Mi -Jeong Nam (Ewha Womans U., Korea) Analysis of Indonesia's Digital Industry and the Case of Gojek Namjae Cho, Firti January Anindya (Hanyang U., Korea) Exploring the effect of overload on the discontinuous intention of SNS: the moderating effect of gender Yu Xiang Xia, Seong Wook Chae (Hoseo U., Korea) Misinformation detection and rectification based on QA system and text similarity with COVID-19 Insup Lim, Namjae Cho (Hanyang U., Korea) The present and future of the electric vehicle battery market Jung Seung Lee, Hye Jin Kim (Hoseo U., Korea)	Organizational humor, work space and time HeeSun Kim (Yonsei U., Wonju, Korea) Attaining Self-Transcendence through Self-Kindness: The mediating role of Humanity Rahul Khurana and Santosh Rangnekar (IIT, Roorkee, India) Employees' intention to leave job – The case of Micro finance institution Rabin Subedi, Surendra Neupane, Raju Ram Adhikari (Lincoln U. College, Malaysia, Tribhuvan U., Nepal) Co-Worker Support and Communities of Practice: Examining the mediating role of employees' Personal Interaction Anjali Dutta, Santosh Rangnekar (IIT, Roorkee, India)
Session 2	Session A2: Work Practices	Session B2 Innovation in Public Services	Session C2: Social Transformation
	Impact of Employee Participation in Decision-making and Organizational Performance: a Review of Literature and Implications for Future Research Nilesh Kumar Tiwari, Santosh Rangnekar (IIT, Roorkee, India) A Systematic Review of Learning from Reflection literature: 2000-2020 Mohit Pahwa, Santosh Rangnekar (IIT, Roorkee, India)	Smart, sustainable and resilient (SSR) healthcare supply chain: A Fuzzy-AHP Approach Kamal Hossain, Vikas Thakur (National Institute of Technology, Rourkela, India) Can e-learning enhance the maximum access to education and quality in a developing country: with special reference to Nepal Sateesh Kumar Ojha, Jagadish Chandra Wagle (Lincoln U. College, Malaysia) The Impact of Knowledge Sharing on the Organizational Innovation among Private Universities in Malaysia Ali Ameen, Pradeep Bastola, Dhoha Younis, Neupane Chanda, Osama Isaac (Lincoln U. College, Malaysia)	Quality Assurance in Engineering Education: Provision and Practices in Nepal Basanta Chandra Marahatta (Lincoln U. College, Malaysia) Effectiveness of School Dropout Prevention Practices in Nepal Jayaram Wagley (Lincoln U. College, Malaysia) Integrating Values in Education: Managing Learning Crisis for Sustainable and Holistic Achievement Romkanta Pokhrel (Lincoln U. College, Malaysia)

How Top Management Team Diversity Affects Innovation and Company Performance?

Anthony S.C. Tsui

Zhuhai Bright Ocean Education Consulting Co., Ltd

Bernard Lee**

The University of Oxford, UK

Oliver H.M. Yau

Lee Shau Kee School of Business and Administration, The Open University of Hong Kong, Homantin, Hong Kong, SAR

**All three authors make equal contributions to the journal paper.*

***Corresponding Author: Bernard Lee, University of Oxford*

Tel: +44(0)7922 163036

Email address: bernardlee2007@gmail.com

Abstract

There has been an increasing devotion to the gender balance on executive boards in China. There has been an assumption that increasing the proportion of women in the highest jobs will improve company performance and corporate governance. This research paper tests this assumption by studying a sample of 305 publicly listed healthcare companies in China in the period 2016-2019. We find that the choice of gender for board chair and CEO has a more impact on company performance than merely increasing the proportion of women on boards. Assessing the impact on company performance of different gender composition of board chairs and CEOs, we use an innovative approach to measure the relationship, using a proxy measurement in R&D, sales, and marketing expenses.

Keywords

Gender, board chair, CEO, R&D investment, sales performance, marketing expenses

1. Introduction

Widening gender diversity and visible minority representation in publicly listed companies' top jobs continues to be a hot issue for executive committees. Women growing concerns about gender equality have led to regulations (Chieragato, 2020), such as gender quotas, to increase women's representation on corporate boards. Institutional investors have also used the board gender diversity policy as one of the criteria for investment in a firm (Adams & Ferreira, 2009). They proposed increasing the proportion of women directors based on the assumption that this will be good for company performance and corporate governance.

A complication with these proposals is that a single focus on proportionality may not reflect women directors' actual performance (Adam et al., 2010; Christiansen et al., 2016; Guo & Masulis, 2015). Green & Homroy (2018) found that increasing the proportion of women directors had no statistically significant association with company performance in the U.K. Moreover, the Gender Diversity and Board Quotas Bill in California (SB 826) received criticism because it considered the result rather

than the means of achieving such an outcome. In other words, appointing women directors may have become a regulatory requirement rather than reflect a sound economic decision-making process (Greene, Intintoli, & Kahle, 2020).

The relationship between company performance and board gender diversity has been studied. We have found little focus on the interaction effects of a male and women board chair and CEO (Guo & Masulis, 2015). It is assumed that the integration of women directors in corporate governance will positively affect company performance. Further, gender diversity seems to bring fresh ideas, perspectives, and different skill sets into the board room. The imagined ideal is that men and women directors can synergize their differences working towards a paradigm shift for a company. However, little empirical research evidence has backed up these claims.

This paper aims to explore three objectives about these claims. First, we provide new data correlating the choice of gender in the Chair and CEO positions to sales

performance. Our study uses data from public listed China healthcare companies, with less than 10% of our sample companies having women directors holding board chair or CEO positions

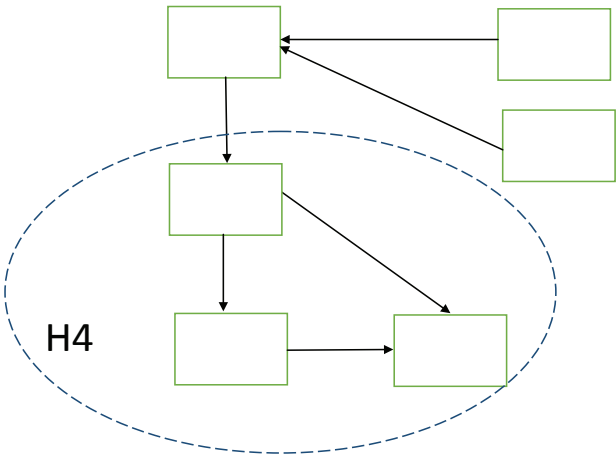
The second objective is to examine the impact on women directors' performance when interacting with male directors. While studying the performance impacts of the Gender of a board chair and the Gender of CEO, we seek to identify how various gender compositions exert control over R&D investment.

The third objective is to use a proxy for performance data on marketing expenses as a mediator of R&D investment and sales. It seems that both R&D investment and marketing expenses are in a line-relationship position rather than a staff-relationship role within an organizational structure.

We organize this paper as follows: Section 2 devotes itself to developing the model and hypotheses. Section 3 explains the research methodology. Section 4 explains the results, and the following section presents the conclusions and limitations.

2. Model and Hypotheses Development

Figure 1: The Conceptual Model



2.1 The Model

Figure 1 depicts the proposed model with six variables: Gender of board chair (CHRG) and CEO (CEOG), the interaction of Gender of board chair and CEO (ICCG), R&D investment (R&DI), marketing expenses (MKTE), and sales performance (SALES). Taking the associations among these variables into consideration, we develop seven hypotheses: Hypotheses 1, 2, 3, 4, 4a, 4b, and 4c. The last three hypotheses pertain to the examination of the

mediating effect. The two exogenous variables are CHRG and CEOG, while the four endogenous variables in this model are ICCG, R&DI, MKTE, and SALES. In the upper part of Figure 1, both CHRG and CEOG have an impact on ICCG. The lower part of Figure 1 is more complicated as it indicates the mediating effect of marketing expenses between R&DI and SALES. The relationship between ICCG and R&DI links the two parts of the model.

2.2. Hypotheses Development

This section describes how we developed our hypotheses in the model. We first introduce brief literature on the key variables and then offer arguments for the relationship between variables, which form a hypothesis. It is essentially a three-step approach. For example, we first introduce the exogenous variable, the gender of the board chair, then the endogenous variable, the interaction of Gender of the board chair and CEO, and finally discuss their relationships.

2.2.1. gender of board chair

Seeking clarity on the theory around the gender of board chairs is fragmented. We see recent studies developed in several directions. The first is about the ethical issue of gender balance (Bøhren & Staubo, 2014; Sun, Zhu & Ye, 2015; Oliver et al., 2018). The second examines the performance of gender orientation and performance (Dobbin & Jung, 2010). Valls Martinez, Cruz Rambaud, & Parra Oller (2019) and Ye et al. (2019) refer it to either a male Chairperson or a female Chairperson in an organization. In this study, we adopt the same definition for the gender of the board chair in the listed healthcare companies.

2.2.2. Gender of CEO

The theory around the Gender of the CEO is complex. The first theme is concerned with ethical issues. Wu et al. (2019) examined women executives and corporate social responsibility, while Wolfers, J. (2006) explored gender discrimination in hiring CEOs. The second theme scrutinizes the effect on innovation. Gomez-Mejia et al. (2019), Ullah, Fang, & Jebran (2019), and Liao, Zhang, and Wang (2019) examined how women directors influence firms' environmental innovation. Third, Faccio, Marchica & Mura (2016) and Khan & Vieito (2013) looked into how CEO's Gender affects company performance.

All the above studies have one thing in common; they intrinsically defined gender. The Gender of the CEO refers to either a male CEO or a female CEO in an organization.

In our study, we apply the same definition to the listed healthcare company.

2.2.3. Interaction of the Gender of board chair and CEO

It refers to mixing the gender of male and female board chairs with the Gender of male and female CEOs in listed healthcare companies. There are four combinations:

Gender of Board Chair + CEO

Interaction Variable

1. a female board chair with a female CEO (F + F)
homogenous coded as 1
2. a female board chair with a male CEO (F + M)
heterogenous coded as 2
3. a male board chair with a male CEO (M + M)
homogenous coded as 1
4. a male board chair with a female CEO (M + F)
heterogenous coded as 2

We further divide these combinations into two groups: homogenous gender group coded as 1(one) and heterogeneous gender group coded as two (2). We call this process "interaction."

The interaction of the gender of the board chair and CEO is a new variable that we developed for this study. We are not aware of other studies adopting this approach.

2.2.4. Relationship between Interaction of Gender of Board Chair and CEO and Gender of Board Chair

Hence, we propose the following hypothesis.

Hypothesis 1: Gender of board chair has a positive impact on the interaction of the Gender of Board chair and the Gender of the CEO. That is, male board chair tends to influence the choice of male CEO, whereas female board chair tends to influence the choice of male CEO.

3.2.5. Relationship between Interaction of Gender of Chairperson and CEO and Gender of CEO

Similarly, according to a study of the listed companies in Vietnam, Tran, Phung, Yang, and Wang (2020) find that women CEO reduces systemic and individual risks. However, there is little study about the Gender of the CEO has a significant positive impact on gender diversity. Therefore, the following hypothesis emerges.

Hypothesis 2: Gender of CEO has a positive impact on the interaction of the gender of the board chair and the Gender of the CEO. A male CEO prefers to work with a male board chair, whereas a female CEO prefers to work with a male board chair.

2.2.6. R&D investment

The literature on R&D investment gives various definitions. The most commonly accepted one is from Hsu & Cohen (2020) and Diéguez-Soto et al. (2019). They define R&D investment as all the costs related to the development of new offerings. These costs include products and services, comprising software investments, amortization of software investments, and company-sponsored R&D. One practical way to select the appropriate definition is to consider if there is accurate data available (Lu, Sheng, & Wang, 2020). This definition is the one we use in our model.

It is worth noting that R&D investment should not include government or customer sponsored R&D investment.

3.2.7. Relationship between Interaction of Gender of Chairperson and CEO & R&D investment

Previous studies show that gender diversity in the board can bring a significant positive impact on organization performance as women CEO and board chair are less risk-averse than male directors (Poletti-Hughes, & Briano-Turrent, 2019; Nadeem, Suleman, & Ahmed, 2019; Budi, 2019; Appelman, 2019; AlHares et al., 2020). A study of 155 non-financial companies was retrieved from the Datastream database from 2004 to 2014 using the two-stage least squares method, Poletti-Hughes, & Briano-Turrent (2019) find that board gender diversity can increase risk-averseness and, in turn, reduce R&D investment.

Hence, the following hypothesis emerges.

Hypothesis 3: The interaction of the gender of the board chair and the Gender of the CEO positively impacts R&D investment. The same genders of Board chair and CEO tend to increase the R&D expenses, whereas opposite genders of Board chair and CEO tend to reduce the R&D expenses.

2.2.8. Company performance

The literature on company performance is enormous. There are at least three key themes. The first theme assesses the company performance from a marketing approach, using a single indicator as an endogenous variable, such as sales and competitive advantage. Zhu, Zhao, & Abbas (2020) adopted sales as a single indicator of performance in examining its triangular relationship with R&D investment and marketing expenses.

The second theme is related to utilizing a single financial indicator, such as cash flow (Sun, & Ding, 2020), total

assets (Ma, 2019; Zhang & Jia, 2020), gross profit (Negru & Buzgurescu, 2019), and P.E. ratio (Yung, Lin, & Gan, 2019). A final theme is a performance using a latent variable or constructs instead of a single indicator in the former two streams. The construct is mostly built by grouping psychological variables using exploratory factor analysis (Tse et al., 2003; Yau et al., 2007). As our study adopts an available public dataset, we will not be considering using any psychological data or scales in the third stream. Further, as we deal with marketing expenses and R&D investment in the proposed model, sales as a performance indicator seem most appropriate. As such, consistent with prior studies (Spyropoulou, Katsikeas, Skarmeas, & Morgan, 2018; Gregory, Ngo, and Karavdic, 2019), we define company performance as the total sales yielded by listed healthcare companies.

2.2.9. Relationship between R&D investment and Company performance

Since there is a trend for the CEO or the board chair of large organizations or listed companies to spend a substantial amount of money in R&D, it is worth noting the importance of the effectiveness of the R&D investment to the company performance. Previous studies have ascertained that R&D investment can enhance the market value of the company (Hall & Oriani, 2006; Lantz, & Sahut, 2005; Schwartz, Miller, Plummer, & Fusfeld, 2011; Špacek, & Vacik, 2016; Lee, 2019; Ravselj, & Aristovnik, 2019; Wang, Du, Koong, & Fan, 2017; Sharma, Davcik, & Pillai, 2016).

Over the past few decades, top I.T. companies such as Apple, Microsoft, Tesla, Alibaba, and Tencent have tended to increase the percentage of their investment in R&D in the hope that they can generally enhance their companies' performance (Hsu, & Cohen, 2020; Diéguez-Soto et al., 2019). As we mentioned in the last section, company performance's common indicators are ROI, ROE and ROA, market competitiveness, stock price, sales, and higher operation value (Wang, Du, Koong, & Fan, 2017). However, the results of the above studies are mixed.

The money spent on R&D investment in I.T. companies has increased because they believe that R&D investment can augment their market competitiveness and increase their chance of competing in the patent race.

Results of the impact of R&D investment on company performance are mixed. First, we have found positive impacts of R&D investment on company performance.

Second, R&D investment seldom negatively influences company performance. Its failures may be due to uncertainty, risk factors, and time factors (Xiong, Wang, & Zhao, 2020; Ravšelj, & Aristovnik, 2020; Yoo, Lee, & Park, 2019). Third, R&D investment and company performance may have a non-linear relationship (Ho, Keh, and Omg, 2005). In a study conducted by Xiong, Wang, & Zhao (2020), the moderators of financial development and government intervention positively and negatively affect the relationship between R&D investment and company performance in the PRC. Ravšelj & Aristovnik (2020) found that tax incentives and government subsidies can enhance R&D investment in company performance in high-risk environments.

An exciting study serves as an example of revealing the diverse nature of the relationship between R&D investment and company performance. Ho, Keh, and Omg (2005) found that R&D investment does not affect the nonmanufacturing company's stock value, whereas it positively impacts the manufacturing company's stock value.

As the results are mixed, we propose to reconfirm the following hypothesis:

Hypothesis 4a: Increased R&D expenses yields increasing sales.

2.2.10. Marketing Expenses

Marketing expenses are an essential expenditure for businesses needed to attract customers.

We can summarize the literature in four areas. The first area relates to marketing expenses with company performance (Memarista, & Gestanti, 2018; Tudose & Alexa, 2017; Konak, 2015; Sharma & Husain, 2015; Van Triest et al., 2009, and O'Neill, Hanson & Mattila, 2008). We defer discussion of this area to Section 3.2.1.2, which pertains to its relationship with company performance.

The second area looks into the efficiency of marketing expenses. Papadimitriou & Prachalias (2009) examined global telecom companies' capability to maximize the input factors' efficiency, including marketing expenses. Treating marketing expenses as a marketing strategy forms the third area. Luo, X. (2008) argued that prudent investors might be better to pick 'star' IPO if they can track pre-IPO marketing expenses. Parida's (2018) study investigating the impact of market competition on mutual fund marketing expenses represents the fourth area. We regard this as one of the rare studies which treat marketing expenses as a dependent variable.

Most of the studies in the above four areas do not explicitly define marketing expenses. To be consistent, we follow and adopt the definition suggested by Ptok, Jindal, & Reinartz (2018), Traina (2018), and Mishra & Ewing (2020). In this study, marketing expenses are the total expenses spent on advertising and promotion and related marketing activities, including selling, general, and administrative expenses (SGA) in marketing in listed healthcare companies.

2.2.11. Relationship between R&D investment and Marketing expenses

Previous studies have revealed that both R&D investment and marketing expenses work together to produce significant positive company performance (Zhu, Zhao, & Abbas, 2020; Akyüz, & Berberoğlu, 2016). However, the result is mixed. According to Akyüz and Berberoğlu (2016), an increase in R&D investment reduces advertising expenses. Similarly, a decrease in R&D investment results in more considerable advertising expenses. According to a longitudinal study in the PRC, where marketing was considered part of the absorptive capacity, this direct absorptive capacity serves as a significant moderating variable between R&D investment and its performance (Zhu et al., 2020). Lee (2013) has reported that increasing R&D investment yields a higher brand value for market-driven companies. Since the results are mixing, we need to reexamine the relationship between R&D investment and marketing expenses. Hence, the following hypothesis emerges:

Hypothesis 4b: Increased R&D Investment (R&DI) yields increasing Marketing Expenses (MKTE).

2.2.12. Relationship between Marketing expenses and Sales performance

Long term customer relationship or customer relationship management has received recognition as a cost-effective marketing tool in the last two decades (Trif, Duțu & Tuleu, 2019; Rashwan, Mansi & Hassan, 2019; Yan et al., 2019; Meesala & Paul, 2018). There is strong evidence that the healthcare industry's service environment is beneficial to the marketing of services and product awareness, resulting in potential company growth (Yan et al., 2019). A research study also found that the health care service provider's good service can produce better company performance (Meesala & Paul, 2018). Listed companies who increased their advertising expenses after shareholder complaints were able to fend off hostile takeovers (Wies, Hoffmann, Aspara, & Pennings, 2019).

Despite negative evidence, the relationship between marketing expenses and company performance is positive in most cases. Hence, we propose the following hypothesis:

Hypothesis 4c: Increased Marketing Expenses (MKTE) yield increasing Sales Performance (SALES).

2.2.13. Mediating effect of Marketing expenses between R&D investment and Sales performance

Since quite a few factors enhance sales in different industries. In our sample of 305 publicly listed companies in the health care industry, we saw that CEOs and their Boards encountered dilemmas when seeking to allocate expenses to R&D and marketing to achieve economic success, such as sales performance. Some companies found that it was a trade-off between R&D and marketing (Ganguli, 2009). We argue that R&D and marketing is not a trade-off but a synergetic relationship. The healthcare industry is greatly R&D-driven (Zucchi, 2019), and marketing plays a significant role (Anning-Dorson, Tackie, & Boadi, 2019).

We expect there is a full mediation among R&D investment, Marketing expenses, and Sales performance. However, if we reject H4a, a partial mediation will be identified. Often, CEOs need to make a tough decision when allocating the company resources or budget for the R&D department through the marketing department.

Previous studies have found that the joint influence of R&D investment and marketing expenses strongly impact company sales when they are employed simultaneously (Krishnan, Tadeipalli, & Park, 2009; Ganguli, 2009). We posit that the relationship between R&D investment and marketing expenses will give a synergetic result rather than a company's competing relationship. Even though the health care industry is R&D driven, R&D efforts are likely to increase its marketing expenses. Hence, we propose the following hypothesis.

Hypothesis 4: Marketing Expenses (MKTE) mediate the relationship between R&D Investment (R&DI) and Sales Performance (SALES).

3. Research Methods

3.1 Sample and data source

We collected the PRC's healthcare industry information from the China Stock Market & Accounting Research Database (CSMARD) for 2016-2019. CSMARD has been a reliable source of public information about the listed company's profiles and performance. Renowned

universities such as Hong Kong Polytechnic University, Chicago University, University of Hong Kong, and Tsinghua University have adopted their databases for academic endeavors during the past ten years.

According to Global Industrial Classification Standard (GICS), companies that we selected fell in Sector 35 (Health Care) and industry groups 3510 (Health Care Equipment & Services) and 3520 (Pharmaceuticals, Biotechnology & Life Sciences). The database in this sector comprises 305 listed companies, which we all included for this study. As such, the sample represents the population of the healthcare industry in the PRC.

The healthcare industry provides an ideal setting for testing our model and hypotheses for several reasons. First, R&D is considered an essential investment in the healthcare industry, as it has tremendous effects on company performance. Second, board chair and CEO duality are likely crucial decisions for the healthcare industry because of the PRC's enormous population. Last, the healthcare industry integrates sectors within the economic system that provides goods and services to treat patients with curative, preventive, rehabilitative, and palliative care (Wikipedia, 2020).

Third, we note that the industry represents an enormous consumer market of almost 15 billion consumers in the PRC. As its products and services are necessary for day-to-day life, we cannot overlook its importance.

3.2 Operationalization of Variables

As discussed in Section 2, there are two exogenous variables and four endogenous variables in the proposed model. The following section describes how we operationalize these variables.

4.2.1 Endogenous Variables

The four endogenous variables are ICCG, R&DI, SALES, and MKTE, as shown in Figure 1. We coded ICCG 1 when the board chair and CEO were similar in Gender and ICCG 2 when the board chair and CEO were heterogeneous.

R&DI was operationalized as the amount of investment in R&D, representing the amount of know-how (Hennart & Larimo, 1998) and private expropriation hazards (Delios & Henisz, 2000). SALES was the revenue generated by selling a company's products and services, whereas MKTE is the amount of money spent on promotion and other marketing activities.

4.2.2 Exogenous Variables

We have two exogenous variables in the Model, CHRG, and CEOG, as shown in Figure 2.

CHRG represents the gender Gender of the board chair, while CEOG defines the gender Gender of the CEO. Both of them are dummy variables in which we coded men as one and women as 2.

3.3 Analysis Methods

The literature on the two streams: the choices of gender in the executive board and R&D & marketing expenses with sales indicates that the regression method and two-stage least square methods are the two most frequently employed techniques in data analysis. However, in this study, we adopt SmartPLs 3.3.1, a structural equation modeling software, to test whether the data fit the model and its hypotheses while controlling for the year's fixed effect. Missing values were first replaced by linear interpolation before we standardized all variables to reduce multicollinearity among variables.

3.4 Results

We present descriptive statistics and correlation coefficients in Table 2. The mean of ICCG is -1.65 (S.D. 0.497). On the one hand, the average CHRG is 1.08 (S.D. 0.275), indicating that board chairs are mostly men. On the other hand, CEOG is 1.22 (S.D. 1.045), which shows more men than women. The correlation matrix in Table 2 indicates that ICCG is significantly correlated with CHRG and CEOG at $p=0.05$, respectively. However, its relationship with CHRG is higher than that of CEOG. R&DI has a significant correlation with SALES and MKTE at $p<0.001$, whereas MKTE is highly and positively correlated with SALES at $p<0.001$. All these relationships are consistent with what we have discussed in Section 2.

Table 1. Descriptive Statistics and Correlation Coefficient Matrix (N=305)

	Mean	Std. Deviation	CEOG	CHRG	ICCG	LnRD	LnMKTE
CEOG*	1.22	1.045	1				
CHRG	1.08	0.275	0.007	1			
ICCG	1.65	0.479	0.127**	0.121**	1		
LnRD	17.68	1.76	-0.061	-0.089	-0.008	1	
LnMKTE	19.71	0.946	0.04	0.005	0.049	0.23**	1
LSALES	21.02	1.287	-0.028	0.106**	0.209**	0.008	0.111**

*Variables before standardization

** $p<0.05$

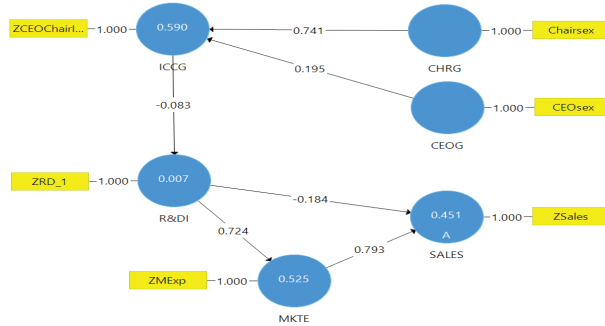
4.5 Assessing the Model

Testing the model and its hypotheses, we followed the procedures suggested by Hair et al. (2016). we start with evaluating the model's structural nature,

Step 1. Assess the structural model for collinearity issues and model fitting

Figure 2. Estimated Path Coefficients of the Conceptual Model
Model Fit Summary

SMRM = 0.044 d_ULS = 0.053 d_G = 0.006 NFI = 0.986



To assess collinearity, we need to examine each predictor separately for each subpart of the structural model. However, since we have standardized all variables before data analysis, the VIF values become 1. Hence, we do not have multicollinearity with VIF higher than 5, and the next thing to do was examine the model fit measures (Figure 3).

The standardized-root-mean-square-residual (SRMR) was a model fit measure suggested by Henseler et al. (2014). It is the root mean square discrepancy between the observed correlations and the model-implied correlations. When applying Covariance – Structural Equation Modeling (CB-SEM), the threshold for SRMR was set as 0.08. Hair et al. commented that this value would be too low for Partial Least Square - Structural Equation Modeling (PLS-SEM) as the purpose of PLS-SEM is to maximize the explained variance of the endogenous variables or constructs. In assessing the model, we found SRMR 0.055 and NFI 0.999. The former is smaller than the threshold of 0.08, while the latter is larger than the threshold of 0.9. We found that the d ULS, a model fit index for PLS-SEM, is 0.055. As such, we may conclude that the data fit the model well with a small amount of residual.

Step 2. Assess the significance and relevance of the structural model relationships

Submitting the structural model (Figure 1) to SmartPls, we set the algorithm iteration equal to 500 and bootstrapping

samples 5500. Figure 2 shows that the analysis outputs with all paths significant at $p < 0.001$, except $R\&DI \rightarrow SALES$. As indicated in Table 2, six hypotheses that we postulated were supported. Only H4a that $R\&DI \rightarrow SALES$ was rejected at 0.05 but accepted at 0.100. As such, we conclude that H4a was weakly supported, and further examination of this link seems necessary in future research.

Table 2. Results of Hypotheses Testing

Hypothesis	Path Coefficient	R-Square	Supported/Rejected
CHRG $\rightarrow$ ICCG	0.741 ($p < 0.001$)	0.590	Supported
CEOG $\rightarrow$ ICCG	0.195 ($p < 0.001$)	N.A.	Supported
ICCG $\rightarrow$ R&DI	-0.083 ($p < 0.001$)	0.007	Supported
R&DI $\rightarrow$ SALES	0.184 ($p < 0.147$)	0.451	Rejected
R&DI $\rightarrow$ MKTE	0.739 ($p < 0.001$)	0.534	Supported
MKTE $\rightarrow$ SALES	0.793 ($p < 0.001$)	0.451	Supported

The short path running from ICCG $\rightarrow$ R&DI $\rightarrow$ SALES, which is not significant at $p < 0.100$, indicates that the R&DI is not a good mediator.

Of significant indirect effects, the path $R\&DI \rightarrow MKTE \rightarrow SALES$ is most relevant to Hypotheses 4a and 4b. This effect evidences that MKTE is a mediator between R&DI and SALES. As R&DI does not directly impact SALES, the only way that R&DI can influence SALES is through MKTE (mediation – partial mediation accepted). The next exciting and significant indirect paths are:

$CEOG \rightarrow ICCG \rightarrow R\&DI \rightarrow MKTE \rightarrow SALES$ and
 $CHRG \rightarrow ICCG \rightarrow R\&DI \rightarrow MKTE \rightarrow SALES$.

We can break the model into two parts: the upper part is related to CHRG, CEOG, and ICCG, and the lower part consists of MKTE and SALES. The endogenous variable, R&DI, connects these two parts. If ICCG does not have an impact on R&DI, the model will fall apart.

Overall, all indirect paths are relevant and meaningful, indicating that the model is well-connected among exogenous and endogenous variables.

Table 3. Two-sample Cross-validation

Path Coefficients-diff (S1 - S2)		p-Value original (S1 vs. S2)	p-Value new (S1 vs. 2)
R&DI → SALES	-0.077	0.595	0.810
R&DI → MKTE	-0.054	0.687	0.627
MKTE → SALES	-0.198	0.811	0.377
ICCG → R&DI	0.028	0.218	0.437
CHRG → ICCG	-0.003	0.520	0.961
CEOG → ICCG	0.097	0.486	0.972

The next thing to do is to assess the cross-validation of the model. By dividing the dataset into two groups, we coded odd-numbered companies as one (1) and even-numbered companies as two (2). The multigroup procedure of the SmartPls Program was employed to compare whether path coefficients in the model are significantly different across the two groups. Table 6 shows the results of the cross-validation analysis. Column 4 provides p-values for assessing differences across two groups for all paths in the model. S1 in the header of the column represents the first group, while S2 represents the second group. As the p-values are above 0.377, all path coefficients are not significantly different across the two groups. These indicate that the two samples are statistically insignificant in terms of all path coefficients. Hence, we have successfully cross-validated the model.

Step 3. Assess the level of R²

We examine the R² values of the endogenous variables. As indicated in Table 2, the R² values of ICCG (0.590), MKTE (0.534), SALES (0.453) can be considered moderate. In contrast, the R² value for R&DI (0.007) is relatively weak.

3.6 Section Summary

We employed SmartPls to assess our model and test the seven hypotheses that we postulated in Section 3. There are several findings worth noting. First, the indicators SRMR and NFI suggest that the data fit the model well. Second, all hypotheses were accepted except Hypothesis 4a at $p < 0.05$. Concerning Hypothesis 4, by bringing together the results of testing Hypotheses 4a, 4b, and 4c, we conclude that MKTE is a partial mediator between R&DI and SALES.

4. Conclusion

This study examines the effects of board gender composition on China's healthcare companies' sales performance. Using the China Stock Market & Accounting Research Database (CSMARD) for 2016-2019, we have shown that board gender composition significantly affects sales performance through R&D investment decision-making. The results seem to provide evidence that a board chair and CEO of the same Gender increase R&D investment while if they are of different genders, they appear to reduce R&D investments. Besides, marketing expenses play a mediating role between R&D investment and sales performance. Marketing is not only sales but also for the R&D team to guide future demand. Our study appears to demonstrate that board gender composition itself has little impact on marketing efforts. The mediating effect of marketing efforts means that combined marketing and R&D efforts are outperforming individual effort. Overall, the findings suggest that any board's gender composition synergy has a more beneficial impact rather than merely the critical mass of women appointed as directors across the industry.

4.1. Contributions

This study has contributed to the literature on gender diversity management in healthcare companies in three ways. First, existing research has focused on the effect of female board representation on executive boards. While this may sometimes be a requirement for better company performance, appointing women directors does not guarantee it. However, men and women's interaction effects holding the board chair and CEO positions directly impact essential operations, such as R&D investment and marketing activity.

Second, the board gender pairing strategies have different impacts on operations, eventually affecting company profitability. Yang and Triana (2017) found that women-led ventures are more likely to fail than men-led ventures in the Asia business environment. In contrast, our study finds that combined men and women-led ventures are outperforming a single-gendered board.

Third, the gender mix compositions affect operation in two ways: the homogeneous 'gender of board chair and CEO' increases R&D investment due to group thinking and group pressure. On the contrary, the heterogeneous 'gender of board chair and CEO' reduces R&D investment because of their synergy effect.

4.2. Management Implications

There appear to be several real-world applications of these findings to governance, management, and marketing activities.

First, CEO/Chair duality has been an issue for many years and shows no abating sign (Krause, Semedeni, Cannella, 2013). CEO duality is the self-conflicting leadership structure hindering the boards from undertaking their duties and managing the corporate effectively and efficiently as board members are restricted in the information they receive. We look beyond duality and argue that implementing the gender mix composition policy could end the long debate of CEO duality. Implementing this policy in a more open, continual, and reciprocal manner than the current rule-based environment can quickly respond to corporate needs. Therefore, Chair–CEO relationships should be dynamic, and this 'group dynamic' can create unlimited synergy options for a company's success (Arena & Braga-Alves, 2013). In short, we propose that human resources policy should be encouraging a heterogeneous gender mix for board chair and CEO positions rather than just meeting quotas on boards. (Wearing & Wearing, 2004).

Second, most research agrees that we gain a sustainable competitive advantage when investing in both marketing and R&D. A successful company should be producing a leading technology and turning it into a product with attributes better or different than those offered by their competitors (Krishnan & Tadepalli, 2009). We agree with their findings that combined marketing and R&D efforts outperform individual efforts.

Third, from our sample data from PRC publicly listed companies, the marketing effort mediates the link between R&D investment and sales financial performance (Galbreath, 2018), implying that marketing should take the lead on the combined R&D and marketing interaction. In other words, the traditional structure of marketing and R&D as two separate departments, each with its budgets, is inefficient. The R&D unit would be a sub-section in the marketing department to enhance the synergy effect of the R&D and marketing functions (Krishnan et al., 2009; Monteleone, 1976; Chauvin & Hirschey, 1993; Wilson & Ghingold, 1987).

Fourth, in the PRC business environment, women

CEOs have more human capital than men directors. However, women CEOs receive less favorable personal career success outcomes, and their companies had worse market-based performance than their counterparts but better accounting-based performance (Wang et al., 2018). The value of women on-board-company performance remains an issue. We find a positive link with company profitability when male and women directors work together at the executive board level. It is unlikely that companies will reach the gender-balance leadership of males and females soon (Halliday Enyiukwu, 2020). However, PRC companies tend to be in the right direction of improving the gender balance of the board of directors. We suggest that women directors shoulder the profitability of listed companies.

4.3. Limitations and Directions for Future Research

Our study has several limitations. First, we based our analysis to a large extent on a listed company dataset. Some critical variables, such as board size and women board chair and CEO attributes, were not consistently available.

Second, our study is limited to the healthcare industry in the PRC. We should extend our efforts to other sectors or other countries, i.e., the Fast-moving consumer goods industry, I.T., and service industries in other Asian countries. We can compare our model across various sectors and countries.

Third, a different research area would be a longitudinal analysis, exploring the model's stability that we have developed so as to capture the changes in CHRG and CEOG on ICCG and R&DI on SALES over time.

Nonetheless, we should consider examining the impact of the length of tenure on the utilization of R&DI, MKTE, and SALES and possibly determine the optimal length of tenure for CEOs in the industry to maximize the company's performance and the benefits of the stakeholders.

References (Available upon request)

Analysis of Factors that Affect Successor's Willingness in a Family Business : Using the Relationship of Trust as Mediating Variable

Giseob Yu^a, and Namjae Cho^b

a Adjunct Professor, School of Business, Hanyang University

17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea

Tel: +82-2-2220-4142, E-mail: yugs@hanyang.ac.kr

b Corresponding Author, Professor, School of Business, Hanyang University

17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea

Tel: +82-2-2220-1058, Fax: +82-2-2292-3195, E-mail: njcho@hanyang.ac.kr

Abstract

This study focuses on trust between an incumbent CEO and a successor in a family business. We use the relationship of trust between an incumbent CEO and a successor as mediating variable. A successor's conversational ability, home environment and the involvement of family members are used as independent variables. A successor's willingness is used a dependent variable. The relationship of trust has a significant effect on successor's willingness. The relationship of trust has partially mediating effect among successor's conversational ability, home environment and successor's willingness. However, the involvement of family members is not to affect the relationship of trust nor mediating effect.

Keywords

Family Business, Succession, Trust, a Successor, Mediation Effect

1. Introduction

Recently, research and interest in a family business has increased significantly in many academic institutions and societies, and as a result, research on a family business has been published in many academic journals (Short et al., 2016). Recent trends in a family business research have studied that how family members influence such as Company Identity and are involved to business (Anglin et al., 2017). These studies of involvement of family members are naturally linked to succession of a family business. In such a family business, succession can be defined as an important event and time to the extent, and succession is a criterion for classifying a family business and a non-family business (Christman, Chua & Litz, 2004; Laura et al., 2017). In particular, succession cannot take place and complete in a short period of time, also succession requires preparation, execution over a long period of time, and the efforts of many stakeholders around a family business (Yu, 2020). Indeed, the fact that succession is one of the most difficult processes faced by a family business (Yan et al., 2006; Handler, 1994) is readily apparent through various previous studies.

There are various reasons why succession is difficult to complete successfully, because there are many stakeholders in the succession process and emotional problems of stakeholders should be managed well (Matthews et al., 1999). Occasionally, a family business has a dilemma in which a successor does not want to succeed (Lee et al., 2019). In fact, for a family business that fail to succeed, there is a possibility that the succession would remain a major trauma in the business life cycle (Berns & Klarner, 2017), and be perceived as a negative event.

Nevertheless, succession is significant in a family business, because successful succession means survival and permanency of a family business (Giovanna et al., 2020). Succession is an crucial key event in a family business, there are various factors influencing succession such as an incumbent CEO's willingness to succeed (Barach & Ganitsky, 1995; Venter et al., 2005), an incumbent CEO's willingness to retire (Sharma et al., 2001), conflicts of among family members (Bruce & Picard, 2006), and relationship between an incumbent CEO and a successor (De Massis et al., 2008; Venter et al., 2005). In particular, the trust relationship, one of the characteristics that define the relationship between an incumbent CEO and

a successor (Harvey et al., 1995), has been addressed in various previous studies (Lansberg & Astrachan, 1994; Christman et al., 1998; Carter et al., 2009), and have been shown as essential factors that should exist for successful succession.

The purpose of this study is to analyze the influence of trust during the succession process, and to identify the influence and mediating effect of trust of the relationship between an incumbent CEO and a successor in succession process, which is considered an important factor for successful succession. In this study, we focused on the perspective of a successor, a key player in the succession process.

We strived to find that how the trust between an incumbent CEO and a successor affects a successor's willingness to succession as a mediate variable. Additionally, we set a successor's conversational ability, home environment and family involvement as independent variables for analyzing effect on the trust. This research model is based on the proposed model in Yu' (2020) study.

2. Literature Review

2.1 Succession for a Family Business

Succession has explained the leadership transfer process of a business from previous family members to the next generation of family members (Sharma et al., 2001). Succession is significant for a family business in various means. This is because business could grow through successful succession (Dibrell et al., 2019) and family members could continue and develop their knowledge and vision (Bjurgren & Sund, 2001).

According to Industrial Bank of Korea (IBK) Economic Research Institute, a family business in South Korea, which had successfully completed their succession, they were increasing various management outcomes such as business profit rate from 1.9% to 5%, return on asset from 3.9% to 4.8% and return of equity from 5.1% to 6.8% (Kim, 2017). By achieving a successful succession, it is likely to maintain stability not only management performance in the business but also social and economic sectors. Successful succession means that tangible and intangible assets in a company are maintained without dissolution and that the employment of non-family members as well as family members is retained (Kim, 2017; Yu, 2020).

Previous research on succession, various studies defined and described succession in many stages. A typical definition of succession is the four-step succession

process claimed by Churchill & Hatten (1987). In the first step, a founder is the only person who participates in the business. The second is the intensive educational training and ability development stage, focusing on a successor as a stage of training and development. The third is the stage in which an incumbent CEO and a successor form partnerships to jointly manage the business. The final step is the transfer of management control to the successor, which concludes the succession process. However, in recent studies on succession, those were emphasized that the previous step before succession to select a successor was also significant (Cabrera-Suarez et al., 2018; Giovanna et al., 2020).

The definition of succession used in this study was defined as four succession stages suggested by Churchill & Hatten and including the stage of before beginning of succession.

2.2 Definition of Used Variables

2.2.1 Trust between an Incumbent CEO and a Successor

Trust has been studied not only in business but also in various research fields such as sociology and psychology, even economics (Colquitt et al., 2007; Oh et al., 2016). While trust is used in a slightly different meaning, trust eventually arises as a result of the interaction between people, which can be defined as the process of trusting the other as a result of the experience (Blomqvist, 1997; Oh et al., 2016).

During succession in a family business, there are a total of six relationships in which trust should occur: 1) a family business and stakeholders, 2) an incumbent CEO and a family business, 3) a successor and a family business, 4) an incumbent CEO and a successor, 5) a successor and key stakeholders, 6) an incumbent CEO and key stakeholders (Fox et al., 1996). Considering an incumbent CEO and a successor who act as key players in the succession process, 4) the relationship of trust between an incumbent CEO and a successor is very significant and essential (Sharma et al., 2003). In particular, previous studies identify the high level of trust between an incumbent CEO and a successor as the most fundamental and necessary factor for successful succession (Lansberg & Astrachan, 1994; Chrisman et al., 1998; Carter et al., 2009). Such trust could reduce conflicts between family members and various costs, and enable efficient organizational operations.

The trust used in a family business could be analyzed and studied in a multidimensional manner (Schoorman

et al., 2007). The trust also approaches and analyzes the upper category of relational trust, and the relational trust could be divided concept of three sub-categories: mutual trust, competency trust, and system trust (Dyer, 2012; Sundaramurthy, 2008; Kalen, 2014). In this study, we focused on the trust relationship between 4) an incumbent CEO and a successor, and the trust was defined by relational trust including sub-categories.

2.2.2 A Successor's Conversational Ability

Conversational ability is defined in a variety of ways, from various perspectives, including behavioral, propensity, interpersonal, cognitive and linguistic views. Argyris (1965) defined conversational ability as the ability to maintain and grow, to interact with the environment that could thrive, or to fit into the environment. Weinstein (1969) defined conversational ability was to perform interpersonal tasks and to manipulate the others in order to achieve their goals. We could understand the importance of conversational ability from the perspective of human development. Some scholars have found in the conversation why human development and civilization could continue (Lee, 2006). There is also research within business research fields that conversational ability affects job satisfaction and adaptation (An, 2013).

To review previous studies, it can be stressed that conversational ability between stakeholders is essential in the succession process. Besides, the ability of stakeholders could affect communication to complete successfully or not.

In this study, the conversational ability of a successor was measured and the measurement tool was selected to measure individual communication skills (Lee, 1991).

2.2.3 A Home Environment

Home environment, a variable not primarily addressed in business research field, has generally been studied in home economics. In previous studies of home environment, a healthy home environment instructs family's culture and values to family members, improves group consciousness so that family members could act responsibly as members of society, and also greatly affects individuals' growth and development (Yang, 2015). Research on these assumptions began in the United States in the 1960s, with representative scholars including Otto, Detrain, and Olson.

According to these scholars, all families have strengths and challenges, and the ability to develop and strengthen the

positive aspects of each family, and those things enhance and improve home environment by discovering each families' strengths and potential. Additionally, a healthy family was defined as a place where family members were physically, mentally, socially, psychologically, and morally healthy, and had a sense of community solidarity with the group consciousness and a stable mind.

In business research field, Yu (2020) argued that home environment is one of the crucial factors influencing the formation of trust relationships between an incumbent CEO and a successor. The researcher deduced conclusions by interviewing and textual analysis of incumbent CEOs and successors, especially the researcher explained the importance of the home environment by the participating successors emphasized the significance.

In this study, a total of eight questions were used as a tool to measure parental attitude and attachment level of parents to analyze the relationship between an incumbent CEO and a successor each four questions in order to measure the home environment mainly used in the field of home economics.

2.2.4 Involvement of Family Members

Family members could be explained as the most important group of internal stakeholders in a family business, which has various effects on the operation and succession in the family business. This is because family relationships and conflicts affect the success and survival of business compared to non-family companies rather than external factors of business (Choo, 2018).

For successful succession, a successor has many complicated relationships in various family members, financial and social relationships. If the relationship with other family members is not well, a lot of effort, time, and economic costs can be incurred, and if the relationship continues to deteriorate, it can be difficult to succeed (Sharma et al., 2001).

In this process, the influential involvement of family members represented by the successor's mother (or father) or an incumbent CEO's spouse can lead to a smooth conversation and resolution of conflict. In addition, when conflicts arise between an incumbent CEO and a successor, the family members can create solutions by inducing them to close or avoid conflicts through mutual advice and listening with objective and future-oriented perspectives (Barnes et al., 1994). A total of six questions were organized to measure the involvement of family members.

2.2.5 Successor' Willingness to Succession

The willingness of a successor to succeed the family business is a crucial factor, such as the willingness of an incumbent CEO to voluntarily retire from a family business, and it is important for a successor to try and care about the succession (Sharma et al., 2001).

About a successor's willingness to succession, Mayer et al (1995) argued that succession and leadership transfer would require a successor from among family members, who should have abilities and willingness. The voluntarily willingness of a successor to succeed was not only the satisfaction of the stakeholders in the succession process, but also the most significant factor affecting the continuous profits of the business (Venter et al., 2005).

As such, we measured a successor's willingness as the dependent variable which is an important factor affecting various parts of the succession process. The measurement questions were conducted consisting of a total of seven questions.

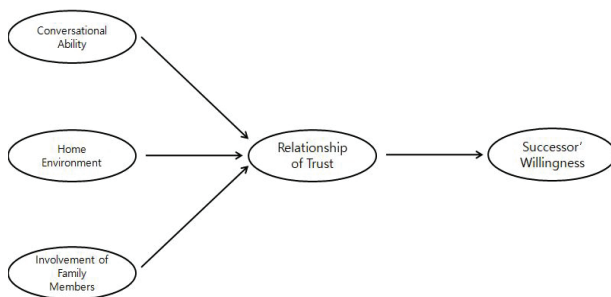
3. Research Method

3.1 Research Model & Hypothesis

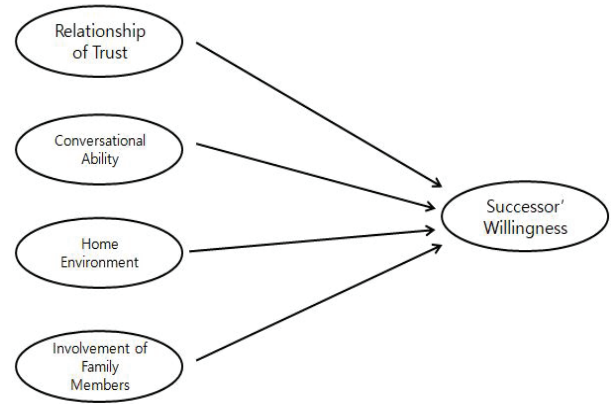
The model of this study is tailored to the purpose of the study based on the variables mentioned earlier. The research model is shown in <Figure 1>, and before analyzing the research model, we analyzed the model in <Figure 2> to understand the influence of trust.

A total of two analytical programs were used in this study. SPSS version 21 was used for correlation analysis, exploratory factor analysis, regression and multiple regression analysis, among variables. Additionally, Jamovi version 1.2.17 was used for confirmatory factor analysis and mediated effect analysis.

The reason for the confirmatory factor analysis is to re-verify the factor model set by the researcher. For regression and mediated effect analysis, the analysis was conducted by deriving the mean of each variable after terminating the factor analysis.



<Figure 1. Research Mode I>



<Figure 2. Research Model 2>

The research hypotheses established based on the research model are as follows.

Hypothesis 1-1: A successor's conversational ability is associated to the trust relationship.
Hypothesis 1-2: Home environment is associated to the trust relationship.
Hypothesis 1-3: The involvement of family members is associated to the trust relationship.

Hypothesis 2-1: The trust would mediate a successor's conversational ability and a successor's willingness.

Hypothesis 2-2: The trust would mediate home environment and a successor's willingness.
Hypothesis 2-3: The trust would mediate the involvement of family members and a successor's willingness.

Questionnaires were produced in this research, distributed and retrieved online and offline. The survey was conducted for 92 family companies, and we used 82 samples for analysis excluding unfaithful respondents or missing data collected. When the initial questionnaire was distributed, respondents who are currently a successor of a family business or parents run a family business therefore a respondent likely become a successors in the future were selected. In addition, the items used for the survey was table 1 and the items were modified and distributed in accordance with this study.

<Table 1. Summary of Used Questions>

Variables		Questions summary (Items)	Name of variable	The quarry of questions
Independent Variables	Successor's Conversational Ability	I try to understand the problem from the other person's perspective.	CO1	Lee (1991)
		I adapt to change and act in an appropriate way.	CO3	
		I pay attention to the other person's arguments and actions.	CO4	
		I use several effective methods to coordinate opposing opinions and solve problems well.	CO7	
	Home Environment	When I am depressed, my parents read my mind and comfort me.	PR3	Yang (2015)
		I enjoy talking with my parents.	PR4	
		My parents and I have had a close relationship since I was young.	PR5	
		My parents and I are on the same wavelength.	PR7	
	Involvement of Family Members	Family members influence me and my incumbent CEO' communication.	FI1	Choo (2018)
		Family members coordinate our opinions when there is a conflict between me and my incumbent CEO.	FI2	
		Family members influence the establishment of trust between me and my incumbent CEO.	FI3	
		Family members influence my development of management ability	FI4	
		Family members influence on succession by controlling conflicts within family members.	FI5	
Mediating Variable	Relationship Between an Incumbent CEO and a Successor	An incumbent CEO shall be determined in consultation with me on important issues.	TR2	Handler (1989)
		I have good communication with an incumbent CEO.	TR3	
		I can coordinate opinions when there is a disagreement with an incumbent CEO.	TR4	
		I try to cooperate with an incumbent CEO.	TR5	
Dependent Variable	Successor's Willingness	I strongly hope to succeed the family business.	WI1	Venter et al (2005)
		I'm happy to work for my family business	WI3	
		I am proud to tell people around me that I succeed in the family business.	WI4	
		I'm interested in my family business.	WI6	

4. Analysis Result

The result of demographic analysis is as follows: In the case of a successor' gender, 70.7% were male and 29.3% were female. An incumbent CEO' gender, 92.7 percent of men were overwhelming, while 7.3 percent of women were women. By age of a successor, the percentage of 20 to 25 was 2.4 percent, 26 to 30 was 22.0 percent, 31 to 35 was 43.9 percent, 36 to 40 was 24.2 percent, and 41 or older was 7.3 percent.

In the case of succession status, 18.3% of the respondents were preparing to succeed a family business, 52.4% of the respondents were currently in the succession process, 11.0% of the respondents completed the succession process, and 18.3% of the respondents answered to be not applicable. 18.3% of the respondents were not applicable, but we did not exclude them because, as mentioned, the initial questionnaire distributed to family members who potential and possible to become a successor within the family business in the pre-succession phase.

In the case of the respondents' industry, manufacturing accounted for 43.9% of the respondents, 6.1% in the construction industry, 17.1% in the distribution industry, 22.0% in the service industry, 3.7% in agriculture, and 7.3%. In the case of the position, the respondents answered 12.2% of the CEO, 23.2% of the board of a director, 7.3% of the general managers, 11.0% of the managers, 17.1% of the assistant managers, and 29.3% of the other positions. The period of working in a family business was 19.5% under a year, 24.4% in 2 to 3 years, 15.9% in 3 to 5 years, 12.2% in 5 to 7 years, 17.1% in 7 to 10 years, and 11.0% in more than 10 years (Table 2).

<Table 2. The Characteristic of Samples>

Classification	Category	Frequency	Rate (%)	Total Responses
Successor's Gender	Male	58	70.7	82
	Female	24	29.3	
Incumbent CEO's Gender	Male	76	92.7	82
	Female	6	7.3	
Age	20~25 age	2	2.4	82
	26~30 age	18	22.0	
	31~35 age	36	43.9	
	36~40 age	20	24.4	
	40 or older	6	7.3	
Succession Status	Preparing Succession	15	18.3	82
	In Succession	43	52.4	
	Completed Succession	9	11.0	
	Not Applicable	15	18.3	
Industry	Manufacturing	36	43.9	82
	Construction	5	6.1	
	Distribution	14	17.1	
	Service	18	22.0	
	Finance	0	0	
	Agriculture	3	3.7	
	Others	6	7.3	

Position	CEO	10	12.2	82
	Board Member	19	23.2	
	General Manager	6	7.3	
	Manager	9	11.0	
	Assistant Manager	14	17.1	
	The Other	24	29.3	
Working Period	Under a year	16	19.5	82
	2~3 year	20	24.4	
	3~5 year	13	15.9	
	5~7 year	10	12.2	
	7~10 year	14	17.1	
	More than 10 year	9	11.0	

The results of the correlation analysis between variables are as follows (Table 3): Although the correlation between a successor's conversational ability and the involvement of family members were not significant. There was a relationship between variables with slightly higher correlations, but we conducted next step, because the problem was not seriously to proceed with this study.

<Table 3. Means, Standard deviation and Coefficient of correlations>

	Means	Standard Deviation	Conversational Ability	Home Environment	Successor's Willingness	Relationship of Trust	Involvement of Family Members
Conversational Ability	3.9085	.68439	1				
Home Environment	3.4970	1.09114	.221*	1			
Successor's Willingness	3.5488	.92583	.340**	.395**	1		
Relationship of Trust	3.4543	.96715	.351**	.625**	.530**	1	
Involvement of Family Members	3.6585	.84063	.131	.537**	.326**	.375**	1

*p < 0.05, **p < 0.01

After analyzing the correlation analysis between variables, an exploratory factor analysis was conducted to ensure the validity and reliability of the measurement items. The measurement items for the initial questionnaire consisted of nine questions about a successor's conversational ability, eight questions about home environment, six questions about the involvement of family members, six questions about the relationship of trust between an incumbent CEO and a successor, and seven questions about a successor's willingness.

According to the exploratory factor analysis, a total of 19 questions satisfied the factor loadings and we conducted to reflect these results. The detailed result was follows: a successor's conversational ability was 4 questions, home environment was 4 questions, the involvement of family members was 5 questions, the relationship of trust between an incumbent CEO and a successor was 4 questions, and a successor's willingness was 4 questions. The results of the exploratory factor analysis are as follows (Table 4).

<Table 4. Result of Exploratory Factor Analysis>

Name of Variables		Items	Factor Loading	Cronbach's alpha	Total Explained Variance (%)
Independent Variables	Conversational Ability	CO1	.824	.799	73.958
		CO3	.739		
		CO4	.755		
		CO7	.761		
	Home Environment	PR3	.751	.909	
		PR4	.783		
		PR5	.810		
		PR7	.842		
	Involvement of Family Member	FI1	.734	.854	
		FI2	.826		
		FI3	.795		
		FI4	.729		
		FI5	.817		
Mediating Variable	Relationship of Trust	TR2	.743	.890	
		TR3	.858		
		TR4	.795		
		TR5	.560		
Dependent Variable	Successor's Willingness	WI1	.838	.877	
		WI3	.771		
		WI4	.783		
		WI6	.684		

Kaiser-Mayer-Olkin : .824

Battlett's chi-squared : 1187.241, the degree of freedom : 201, Sig : .000

The Cronhach's alpha value, which means the reliability of each variable, is a successor's conversational ability .799, home environment variable .909, a successor's willingness variable .854, the relationship of trust between an incumbent CEO and a successor was .890, and the involvement of family members was .877, which resulted in sufficient value for the next progress of the study. The result of total explained variance was 73.958%, and the result KMO value was .824, which is sufficiently explained by the correlation between the variables. Bartlett result was also shown to be significant at the 0.01 level.

For factor loadings, an appropriate value of at least 0.7 was derived. However, an item No. 6 of a successor's willingness and an item No. 5 of the relationship of trust between an incumbent CEO and a successor were less than 0.7, but we did not exclude the items because those items were significant items for this study.

Based on the results of the exploratory factor analysis, a confirmatory factor analysis was conducted. The model was divided into three models for the confirmatory factor analysis. Model 1 included all variables, and for Model 3, variables were distinguished based on independent variables, a mediation variable, and a dependent variable, and Model 5 performed the analysis by separating each variable (Table 5). The results of the confirmatory factor analysis for each model were as follows (Table 6).

<Table 5. Model of Confirmatory Factor Analysis>

Model	Measurement Variables				
Model 1	CO / PR / FI / TR / WI				
Model 3	CO / PR / FI			TR	WI
Model 5	CO	PR	FI	TR	WI

<Table 6. Result of Confirmatory Factor Analysis Model>

Model	x ²	df	p	CFI	TLI	RMSEA	RMSEA 90% CI	
							Lower	Upper
Model 1	736	189	< .001	0.512	0.458	0.188	0.174	0.202
Model 3	544	186	< .001	0.681	0.640	0.153	0.138	0.168
Model 5	322	179	< .001	0.872	0.850	0.098	0.081	0.116

According to Bassellier et al. (2003) and Gefen & Straub(2000), CFI, an indicator that complements the shortcomings of the Standard Fit Index, argued that the complexity impact of the model and the size of the sample are less affected, and that, in general, over 0.9 could be judged to be a favorable fit and also above 0.8 to 0.9 could be deemed a find fit. In addition, the TLI, called the Non-Standard Fit Index, was claimed to be affordable at 0.8 to 0.9. RMSEA, a model goodness-of-fit index that is frequently used as an advantage less affected by sample size, could be evaluated as a good fit if it is less than 0.5 and a normal fit if it is less than 0.10 (Browne & Cudeck, 1992). Considering the fact that the causal relationship and variables used in this study had not been studied generally, the results of Model 5 showed that the result had not a significant problem with the progress of this study.

Prior to analyzing the main research model based on trust, we explored how much trust affects a successor's willingness set as a dependent variable. Multiple regression analysis was conducted with four independent variables including the relationship of trust. The result of the multiple regression analysis is as follows (Table 7).

<Table 7. Result of Multiple Regression Analysis>

Model		Non-Standardized Coefficient		Standardized Coefficient	t-value	Sig.	VIF	Durbin-Watson
		β	S.E.	β				
1	Constant Value	.662	.593		1.116	.268		2.128
	Relationship of Trust	.378	.120	.394	3.157	.002***	1.141	
	Conversational Ability	.237	.135	.175	1.753	.084*	1.990	
	Home Environment	.031	.112	.037	.280	.780	1.787	
	Involvement of Family Member	.150	.122	.136	1.223	.225	1.411	

R	.572
R square	.327
Adjusted R square	.292
F	9.367

a. Dependent Variable: WI

* < 0.1, ** < 0.05, *** < 0.01

The R-square value, which represents the explanatory research model, obtained the result value of .327, and the adjusted R-square value was .292. In addition, the Durbin-Watson value showed the resulting value of 2.128.

Multiple regression analysis showed that the relationship of trust between an incumbent CEO and a successor, and a successor's conversational ability significantly affected a dependent variable (a successor's willingness). Among them, the relationship of trust was shown to have a greater influence on a successor's willingness to succeed than other variables.

The Jamovi program was used to analyze the main research model of this study, and the result of analysis is as follows (Table 8 and Table 9)

<Table 8. Result Using Trust as the Dependent Variable>

Name	Estimate	SE	95% C.I.		β	df	t	p
			Lower	Upper				
Conversational Ability	0.3163	0.1227	0.0719	0.561	0.2238	78	2.577	0.012
Home Environment	0.4860	0.0905	0.03059	0.666	0.5483	78	5.371	<.001
Involvement of Family Member	0.0584	0.1156	-0.1716	0.288	0.0508	78	0.506	0.615

In the model of the relationship of trust as a dependent variable, a successor's conversational ability was shown to have a significant impact (0.3163) at 95% levels and, for home environments at 99% levels (0.4860). However, the involvement of family members (0.0584) was not significant. Thus, the variable that had the most impact on the relationship of trust was home environments.

<Table 9. Result of Mediating Effect Analysis>

Type	Effect	Estimate	SE	95% C.I. (a)		β	z	p
				Lower	Upper			
Direct	Conversational Ability → Willingness	0.2368	0.1496	-0.0704	0.508	0.1751	1.583	0.113
	Home Environment → Willingness	0.0313	0.1120	-0.1673	0.272	0.0369	0.280	0.780
	Involvement of FMs → Willingness	0.1495	0.1343	-0.1490	0.414	0.1358	1.114	0.265
Indirect	Conversational Ability → Trust → Willingness	0.1194	0.0576	0.0350	0.278	0.0883	2.074	0.038
	Home Environment → Trust → Willingness	0.1835	0.0754	0.0679	0.389	0.2163	2.435	0.015
	Involvement of FMs → Trust → Willingness	0.0221	0.0479	-0.0604	0.132	0.0200	0.460	0.645

The result was shown that independent variables, as a successor's conversational ability, home environment, and the involvement of family members, did not directly affect successor's willingness to succeed as a dependent variable. However, a successor's conversational ability exhibited an indirect mediating effect of 0.1194 through the relationship of Trust, and the home environment showed an indirect mediating effect of 0.1835. The involvement of family members was shown to be insignificant.

Consequently, the relationship of trust had an indirect mediation effect between a successor's conversational ability, home environment, and successor's willingness, which was a dependent variable. Based on the results above, the verification results of the hypothesis established in this study were as follows (Table 10).

<Table 10. Result of Hypothesis>

Hypothesis		Result
H 1-1	A successor's conversational ability is associated to the trust relationship.	Accepted
H 1-2	Home environment is associated to the trust relationship.	Accepted
H 1-3	The involvement of family members is associated to the trust relationship.	Rejected
H 2-1	The trust would mediate a successor's conversational ability and a successor's willingness.	Partially Accepted
H 2-2	The trust would mediate home environment and a successor's willingness	Partially Accepted
H 2-3	The trust would mediate the involvement of family members and a successor's willingness.	Rejected

5. Conclusion

The conclusions of this study are as follows: First, it has been shown that trust has a much greater effect directly on a successor's willingness than other variables. For successful succession, the relationship of trust between an incumbent CEO and a successor is an essential factor, which means that an incumbent CEO and a successor should strive to improve their relationship of trust. In other words, it can be emphasized that the establishment of the relationship of trust between an incumbent CEO and a successor is the first factor to be met in the preparation and progression of succession.

Second, the respondents answered that a successor's conversational ability and home environment affect the

relationship of trust with an incumbent CEO. In particular, in a previous study of Yu (2020), the researcher argued through qualitative research that home environment affects the relationship of trust between an incumbent CEO and a successor. The results of this study statistically validated that the variable, home environment, which has been mainly defined and studied in home economics, affects the relationship of trust. This result can be interpreted that implies the importance of the preparation stage for succession, which can be defined as the pre-succession stage. In other words, it can be explained that preparation for succession should be made before, not at the moment when a successor joins a family business and works.

Third, the relationship of trust has been shown to have an indirect mediating effect between a successor's conversational ability, home environment and a successor's willingness. As previous studies have shown, conversations between an incumbent CEO and a successor are important, especially, those who participated in this study determined that their ability to communicate influences the formation of trust with an incumbent CEO and their willingness to succeed. It is also worth noting the home environment variable that has not been addressed in a traditional business research field. A successor who participated in the survey judged that home environment they had experienced influenced the relationship of trust with an incumbent CEO, which could be explained that the efforts of the family members, including an incumbent CEO, were important from the pre-succession stage. This means that an incumbent CEO and family members should create an atmosphere for smooth trust-building from the pre-succession stage.

Finally, it was shown that the involvement of family members did not directly affect successor's willingness to succeed, nor did it have a mediating effect through the relationship of trust with an incumbent CEO. These results also contradict the influence or importance of family members, including an incumbent CEO's spouses, identified in previous studies. Previous studies have shown that the involvement of family members in the succession process is a significant factor and influence, but the involvement of family members in the formation of trust relationships with an incumbent CEO from the perspective of a successor did not affect. These results are likely that a successor would have perceived the relationship with an incumbent CEO as a special and unique relationship that does not want family members to intervene or is not affected by others.

This view, however, is likely to fail to intervene in crucial issues such as improving a successor's willingness to succeed and resolving conflicts, despite the need for the existence of family members to coordinate this relationship if the relationship between an incumbent CEO and a successor is not high. Therefore, it is believed that a successor should consider the recognition of the special relationship with an incumbent CEO, as well as the possibility for intervention of family members to improve the relationship and successful succession.

The limitations of this study and future studies are as follows. First, some of the items for measuring variables have been shown to slightly lower than the appropriate values. In this study, it was considered essential items and we proceeded without excluding those, but in future studies, there is a need to consider this limitation.

Second, this research was conducted without the characteristics of the industry. Although a demographic frequency analysis was conducted for the industry to which the respondents' family businesses belong, we did not conduct, such as cross-industry comparisons. However, the results of the previous qualitative studies indicated that there would be some differences between industries. Therefore, research considering the characteristics of the industry will be needed in the future.

Third, a re-study on the involvement of family members is expected study. Various previous studies have drawn conclusions that are expected to have a significant impact on the involvement of family members, but the result of this study have shown that there is no significant influence between each other. Therefore, it is expected that a detailed study will be needed on how the involvement of family members can affect it.

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A Case study on Building Trust on Succession in a Family Business : Using Eisenhardt Case Study Method

Giseob Yu^a, and Namjae Cho^b

*a Adjunct Professor, School of Business, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +82-2-2220-4142, E-mail: yugs@hanyang.ac.kr*

*b Corresponding Author, Professor, School of Business, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +82-2-2220-1058, Fax: +82-2-2292-3195, E-mail: njcho@hanyang.ac.kr*

Abstract

This study strives to find out building trust between an incumbent CEO and a successor during succession in a family business. We use Eisenhardt's case study method and conduct interviews, five incumbent CEOs and six successors. The trust is formed from emotional trust to managerial trust and trust of these formations is not disappeared at both ends, not usual formation from calculative trust to relational trust. Besides, successors are not conscious to build the trust. Then, they feel difficult to distinguish an incumbent CEO's role during succession. This situation could be a possibility to make conflicts. This means that they need to communicate each other about those problems and perspectives.

Keywords

Family Business, Succession, Trust, Trust Formation, Case Study

1. Introduction

A family business plays an important social and economic role in each country around the world, and family members are found to have an impact in various business fields such as management stability and productivity (Kim, 1998). In particular, identity of a family business evolves and changes, because of the influence of family members (Anglin et al., 2017). For this reason, many researchers have recently conducted various studies on how to define and approach the influence of family members (Zellweger et al., 2013, Sharma et al., 2012).

The study of involvement and influence of family members inevitably leads to the succession in a family business. Despite one of the important parts of family business research and much research on succession, various theories did not develop much (Sharma, Chrisman, and Chua, 1996). This is due to the fact that the succession process is intertwined with a wide variety of stakeholders, is quite complex, and has to manage highly emotional processes (Matthews et al., 1999). In addition, previous studies related to succession mainly focused on variables, and such variable-oriented research has had a positive impact on academic development. However there is a limit to the inability to analyze interactions by various

variables (Stanley et al., 2017).

Nevertheless, succession is the most significant event in a family business and can be described as one of the most critical field to be studied. Succession improves the competitive advantage, management ability, etc. of a family business by a successor through the movement of power and leadership between generations (Dibrell et al., 2019). As a result, it can guarantee the survival of a family business. It can be interpreted that successful succession to the next generation means the survival of a family business.

Research on succession, a critical event in a family business, has been conducted on a variety of topics such as 1) environmental and psychological factors affecting succession (McMullen and Warnick, 2015), 2) harmony among family members in the succession process (Michael-Tsabari and Weiss, 2015), and 3) conflict among family members (Paskewitz and Beck, 2017). In addition, study of succession has been investigated using various variables such Socioemotional Wealth (SEW) (Zellweger et al., 2012; Carney, 2005).

In this study, we endeavored to focus on relationship between an incumbent CEO and a successor during succession process. The reason why we focus on the

relationship, the level of mutual trust has been shown to affect significantly succession through previous research (Chrisman et al., 1998; Carter et al., 2009).

The purpose of this study is as follows. First, the process of building trust between an incumbent CEO and a successor is analyzed in the process of succession in a family business. By analyzing what processes and how forming trust, we suggest guidelines for developing trust in them. Second, we analyze the differences and similarities in the views of an incumbent CEO and a successor' trust, and propose the first step toward for successful succession. To achieve the purpose of this study, Eisenhardt's case study method was used in this study. Five incumbent CEO and six successors were interviewed and data from them were analyzed.

2. Literature Review

2.1 Trust in a Family Business

Trust has been studied and discussed in various fields of study, including sociology, psychology, economics and business (Rousseau et al., 1998; Colquitt et al., 2007, Oh et al., 2016). Trust can be defined as the basic factor that humans interact with in life (Gambetta, 1988), and this definition can be said that human relationships in a society or organization are fundamentally based on trust.

Early in the study, Trust was defined by Mellinger (1965) as either explicitly convinced of another person's motives and intentions, or as a pure acceptance of another person's words and actions. Sociology has typically defined Luhmann (1979) as including one's willingness to use knowledge based on his or her beliefs and actions against others.

In addition, there are definitions of economic perspective defined in anticipation of other people's behavior choices that may affect their behavior choices, and psychological views focused on the individual's internal perceptions, cognitive processes and emotions (Dasgupta, 2000; Mayer & Davis, 1999). Finally, the definition of trust can be explained as a result of the interaction between a person and others, which can be summarized as the result of the experience that the person trusts the others (Blomqvist, 1997).

In general, general trust could develop that by changing the form of trust from a Calculative Trust to a Relational Trust by continuing and repetitively performing (Hauswald, 2012). In other words, the repetitive behavior of a person and the flow of time can be explained as significant factors

in building trust. Trust also plays a crucial role in a family business. The higher level of trust among family members could reduce conflicts and various cost, enable efficient organizational operations, and affect a positive impact on job security and productivity improvement (Fukuyama, 1995; Rousseau et al., 1998; Sharma, 2004).

There are a total of six trust relationships that be formed during succession in a family business (Fox et al., 1996), 1) a family business and stakeholders, 2) an incumbent CEO and a family business, 3) a Successor and a family business, 4) an incumbent CEO and a successor, 5) a Successor and key stakeholders, and 6) an incumbent CEO and key stakeholders. Among the relationships of trust, 4) relationship between an incumbent CEO and a Successor is a very important relationship for successful succession (Lansberg, 1988; Sharma et al., 2003). In this context, the higher level of trust between an incumbent CEO and a successor in a family business serves as a critical role and variable for successful succession.

Trust can be studied and analyzed in multi-dimensional (Schoorman, Mayer & Davis, 2007). Relational trust, which is widely used in family business research, is analyzed in three sub-concepts: mutual trust, competency trust, and system trust. Mutual trust refers to trust between specific people, competency trust is based on experience in skills and abilities, and system trust means that organizational rules and guidelines work fairly and worthily (Dyer, 2012). Such multidimensional explanations of trust means interconnected concepts (Lane, 2000; Rousseau et al., 1998) and can be defined, studied, and analyzed based on personal perspectives (Hauswald, 2012).

In this study, trust is defined as 'psychological state including attitude of accepting various risks based on positive expectations or behaviors' (Eddleston et al., 2012; Dyer, 2012; Mayer et al., 1995). We also focused research on the relationship between an incumbent CEO and a successor among the relational trust of the higher concept, which encompasses the bottom three sub-concepts of trust.

2.2 Previous Research on Trust in a Family Business

Lansberg & Astrachan (1994) conducted an analysis with 130 family business samples to determine the impact of factors on succession planning and the training of a successor. The relationship between an incumbent CEO and a Successor was defined and measured with high mutual trust, mutual respect, and sincere conversation. The

result of research showed that the relationship between an incumbent CEO and a Successor has a positive effect on the training of a successor.

A study by Chrisman et al (1998) conducted a research analysis on the significant qualities of a successor, with 485 Canadian Family Businesses. The research studied with a total of 30 questions about the qualities of a successor and had shown that variables that can be defined by trust or close to it ranked high. The first ranked variable was integrity, the third was respect from non-family members, the 11th was respect from family members, and the 12th was trust from family members.

Carter et al (2009) used interviews, observations and business documentation data from six family businesses to study and understand the development process in which a successor becomes a leader in the succession process, and draw conclusion of six propositions. The first proposition is about the mutual positive relationship between an incumbent CEO and a Successor, and they emphasized that the best way to create a positive relationship in the relationship is to establish a relationship of mutual trust and respect.

Previous studies, these explained that the high level of trust between an incumbent CEO and a Successor is a positive and essential factor in the succession process. While previous studied has identified that trust has an important impact, there has been a lack of research on how the trust is formed. Therefore, this study focused on this part to find out how the trust relationship between an incumbent CEO and a Successor is formed during succession.

3. Research Method

3.1 Eisenhardt' Case Study

Case study is a method of research that can capture the overall and meaningful characteristics of events in the real world through "case" (Yin, 2016). Case study is defined as a way to collect data in depth and to explore cases that are of interest (Creswell, 1998) within a bounded system and detailed in a situational context. Case study is the logic of designing a study, and defined as a research method that can be performed when the situation and research problems are aligned (Platt, 1992). It is also defined by approaching and providing a process for developing theories from the study of events (Eisenhardt, 1989).

In this study, among the various case study methods, Eisenhardt's methodology was selected and conducted to

find answers to the purpose and questions of this study. Eisenhardt (1989)'s methodology consists of eight steps. The first step is to define a research question. However, to ensure theoretical flexibility, a researcher does not set up theories or hypotheses, but define only research questions that a researcher wants to find out. The second step is the case selection. This phase is highlighted as a significant part of designing theories in a case study. In this part, case selection as stated by researchers rather than random selection is recommended because it could have the effect of controlling external changes and enhancing validity.

The third step is to create tools (ex. interview) and protocols. Eisenhardt recommended a multiple case study method, as triangular measurements of evidence, because this method could enhance the theoretical foundation. While many samples are required for various perspectives, but Eisenhardt emphasized that four to ten samples are sufficient for a case study. The fourth step is to enter the case field. Data is collected including information obtained from the field, and analyzing and collecting data are carried out cross-process at the same time. This allows a researcher to have the strength to effectively perform fast data collection and analysis.

The fifth step is to analyze data. There are no criteria in data analysis in general, and it is important to analyze patterns between each case. A researcher could select categories or dimensions for case analysis. Then, a researcher enables to make strategy to find out the differences and similarities between groups or to analyze similarities and differences through case-to-case comparisons.

The sixth step is to establish a hypothesis. The point of the study means that a researcher constantly compares theory and data, and through this process, new and reasonable theories can be established. The seventh step is to compare and analyze existing theories. From this step, a research enables to compare and to analyze the results of the derived research with contrary and similar theories, which could have strengths such as internal validity, theoretical level improvement, and possibility of generalization. The final step in completing the study, a researcher could terminate the study when theoretical saturation is considered or future studies are not expected significantly.

3.2 Research Question and Select Data

The research questions to achieve the purpose of this study are as follows: 1) how is the trust between an incumbent CEO and a successor developed? 2) what is

the difference in view of trust between an incumbent CEO and a successor? The interview was conducted in a semi-structured method to answer research questions. An incumbent CEO and a Successor were interviewed based on eight questions each organized by the researcher. To achieve analysis of results and research purposes, we strived to selected interviewees as a one-on-one matching of an incumbent CEO and a successor working in a same family business currently and doing in the process of family business succession. Each interviewee' profile is as follows (Table 1 and Table 2).

<Table 1. Profile of an Incumbent CEO Interviewee>

No.	Com-pany	Name	Posi-tion	Industry	Succession Status
1	A	Ko	CEO	Manufacturing	Ongoing
2	B	Lim	CEO	Manufacturing	Ongoing
3	C	Cho	CEO	Manufacturing	Ongoing
4	D	Han	CEO	Manufacturing	Ongoing
5	E	Lee	CEO	Service	Consider-ing

<Table 2. Profile of a Successor Interviewee >

No.	Com-pany	Name	Position	Industry	Succession Status
6	A	Ko	Co-CEO	Manufacturing	On -going
7	B	Lim	Assistant Manager	Manufacturing	On -going
8	C	Cho	General Manager	Manufacturing	On -going
9	D	Han	Assistant Manager	Manufacturing	On -going
10	F	Kang	Executive Manager	Manufacturing	On -going
11	G	Lee	General Manager	Manufacturing	On -going

The definitions of a family business used to select the above interviewees are as follows: 1) the company should be controlled by family members (Churchill and Hatten, 1987), 2) the company is during succession or has willingness to succeed in the family business to the next generation in the future, and intends to transfer family's vision (Chua et al., 1999). The CEO of Company E was selected as the interviewee because he was thinking the succession from a positive perspective, although he did not currently decide on starting the succession.

3.3 Analyzing Data

The interviews used in this study were semi-structured. Data analysis obtained through interviews was conducted by Conversation Analysis (Episode Analysis). The reason

why the conversation analysis method is chosen, because conversations is not refined and analyzing conversation is difficult due to the feature of the interview, and also the method could make a research to analyze easily. Furthermore, Conversation Analysis is mainly used by a researcher and an interviewee in the interaction process where an interviewee creates and perceives episodes during conversation, so it could be defined as reasons and observation of the knowledge held by interviewees (Yi et al., 2006). The reason for this definition is that conversation is perceived as organized behaviors that is generated under certain social rules rather than created and progressed in random confusion. (Have, 1999).

For the conversation analysis method, we categorized the data in the first order, set sub-category, and assigned meaning to each episode. The top categories were divided into succession, trust, conflict, succession, succession, successor, and the other. Additionally, sub-category was made segmentation with a total of thirty-one sub-categories, sixteen sub-categories of an incumbent CEO and fifteen sub-categories of a successor (Table 3, Table 4, and table 5). Based on this, for enhancing the validity and reliability of the analysis results, we proceeded to a second analysis with an independent coder team, which were consisted three coders. The independent coder team composed three students: the first was master student and the second and third were Doctor of philosophy candidates, from the Graduate School at University in Seoul.

Significant episodes classified primarily by the researchers were finally used to produce results after a consensus process by independent coders. The process of consensus among independent coders is as follows: 1) Read episodes without the intervention of researchers and classify them into the categories that independent coders thought, 2) If they have reached a consensus on the first classification, move on to the next episode classification, 3) If they did not make a consensus, the researchers explained the context of the episode before and after, and provided some time to independent coders before re-classifying and ordering agreement, 4) Finally, after checking the consensus of independent coders, the researchers proceed with the next episode classification regardless of the agreement.

<Table 3. Used an Incumbent CEO Category and Sub-category >

Category	Sub-category
Succession	Reason for Succession Decision
	Succession Planning and Proposal
	Difficulty of Succession
	Factors Affecting Succession
Trust	Definition and Importance of Trust
	Building Trust Factors and Difficulties
	Recognition of Trust
Conflict	Conflict Factors
	How to Resolve Conflicts
Successor	Successor' Willingness and Attitude
	Successor' Ability
	The Role of Successor
Incumbent CEO	An Incumbent CEO' willingness and Role
	Conversation Frequency and Style
	Communication Manner
The others	Roles and Interventions of Third Parties
	Building Trust with Non-Family Members

< Table 4. Used CEO Category and Sub-category >

Category	Sub-category
Succession	Reason for Succession Decision
	Succession Proposal from an Incumbent CEO
	Succession and Management Plan of Successors
	Importance, Frequency, and Content of the Conversation
Trust	Definition, Forming Factors and Importance of Trust
	Reasons to Trust an Incumbent CEO
	Successor' Efforts to Build Trust
Conflict	Conflict Factors and episodes
	Conflict Resolution Means and Efforts
Successor	Role of a Successor
	Importance of Successor' Ability
Incumbent CEO	Conversation Style of an Incumbent CEO
	Changing an Incumbent CEO Role
The others	Importance and Role of a Mother
	Etc

4. Analysis Result

To calculate the validity (reliability) used in this work, we utilized Miles & Huberman's validity discriminant calculations. Miles & Huberman (1994) argued that the validity was calculated by dividing the number of consensus episodes by dividing a total of episodes, and if the value was 0.8 or higher, there was no problem in proceeding the study by retaining the validity (Feature 1).

$$\text{Validity (Reliability)} = \frac{\text{Consensus Episodes}}{\text{Total Episodes}}$$

<Feature 1. Formula for Validity>

A total of 344 episodes were classified as primary significance by researchers, with 128 episodes of an incumbent CEO and 216 episodes of a Successor. Of the total 344 episodes, 288 were agreed upon by independent coders, so the result of validity rate was 0.837. In detail, the result of an Incumbent CEO was 0.805 with 103 consensus out of 128 episodes, and the result of a Successor 185 consensus out of 216 episodes, resulting in 0.856. With the overall validity was higher than 0.8, we could proceed to the next detailed analysis.

The results by category are as follows: Succession category (category 1) resulted in 67 episodes matching out of 78 episodes, the rate was 0.858, Trust category (category 2) in 85 episodes matching out of 97 episodes, the rate was 0.876, and Conflict category (category 3) in 48 episodes out of 56 episodes, the rate was 0.857. A Successor category (category 4) resulted in 36 matching out of 45, the rate was 0.800, an incumbent CEO category (category 5) resulted in 26 matching out of 33, the rate was 0.818, and the Others category resulted in 26 matching out of 35, the rate was 0.742. The summary table of analysis results by category is as follows.

<Table 5. Summary Table of Analysis Results by Category >

Category	1	2	3	4	5	6	Total
Total Episodes	78	97	56	45	33	35	344
Consensus Episodes	67	85	48	36	27	26	289
Discordance Episodes	11	12	8	9	6	9	55
Result	0.858	0.876	0.857	0.800	0.818	0.742	0.837

<Table 6. Analysis Results Among Coders and Researchers>

Case No.	Total Episodes	Consensus	Disagreement	1	2	3	1	3	All Disagreement	Disagreement researcher
1	24	21	3	1	1	1	-	-	-	-
2	27	20	7	4	-	1	2	-	-	-
3	24	19	5	-	1	1	3	-	-	-
4	28	23	5	1	-	2	1	1	-	1
5	25	21	4	1	1	1	-	-	-	1
6	37	33	4	1	1	-	2	-	-	-
7	43	40	3	-	-	-	-	-	-	3
8	24	21	3	1	1	-	1	-	-	-
9	28	25	3	1	1	1	-	-	-	-
10	43	36	7	1	3	1	2	-	-	-
11	41	31	10	-	3	2	4	-	-	1
Total	344	290	54	11	12	10	15	-	-	6

The meaning of symbols used in the details of consensus among coders and researchers is as follows (Table 6): Case No. means the No. in table 1 and table 2. Total episodes

refer to the total number of episodes used for each case, and consensus signifies the number of concordant episodes in total episodes. Disagreement indicates the total number of disagreements among independent coders. 1/2 means that the opinions of independent coders 1 and 2 were agreed, but not with independent coders 3. 2/3 was meant the agreement with independent coders 2 and 3, but not with independent coders 1. 1/3 means that the opinions of independent coders 1 and 3 were agreed, but not with independent coders 2 and all disagreement means that all three independent coders were inconsistent. Finally, disagreement researcher means that the opinions between independent coders were consistent, but not with the opinions agreed by the researcher.

Significant information (episodes) selected by the researcher is used for the analysis and a summary of the interview results of five incumbent CEOs is as follows: First, the succession plan for a successor already existed regardless of a successor' opinion. This means that an incumbent CEO' willingness to succeed is more important than a successor' willingness to begin the succession. Second, incumbent CEOs were recognized as having the same right of trust with a successor as the right of birth. This trust relationship means that there is a significant difference from the usual trust-forming process. Third, incumbent CEOs thought that a Successor needed time and environment to train himself/herself. Most incumbent CEOs mentioned that a successor needs to overcome the surrounding environment and adversity on his / her own. Fourth, as a result of previous research, conversations with a successor were considerable importance. Among them, the quality of conversation, such as the purpose of the conversation and the ability to communicate, is more important than the frequency of the conversation.

A summary of the interview results of six successors is as follows: First, successors responded that they had a high trust relationship with an incumbent CEO, but there was something in common that they did not recognize until they were asked. Nevertheless, successors answered that they had a high trust relationship and decided to succeed, because of it. Second, they chose conversation as the factor that played the most significant role in forming trust with an incumbent CEO. In particular, they emphasized that an incumbent CEO and a successor should have high conversation skills to facilitate effective and efficient conversation. Third, successors had a trust relationship unrelated to the double role of an incumbent CEO. Due

to this, they explained that they suffered from conflict and confusion owing to trust relationships in vague and inarticulate. Fourth, successors generally received an offer to join and succeed first by an incumbent CEO. This means that there is a possibility that an incumbent CEO may intervene in the life of a successor in consideration of succession. Fifth, successors described that the involvement of third-party family members is important in conversation with an incumbent CEO to resolve conflicts. In particular, they emphasized that the role of an incumbent CEO' spouse plays a momentous role in resolving conflicts. Finally, successors mentioned the significance of education for the succession and for the formation of trust with an incumbent CEO. They explained that postgraduate degree programs had a positive impact on building trust with successors.

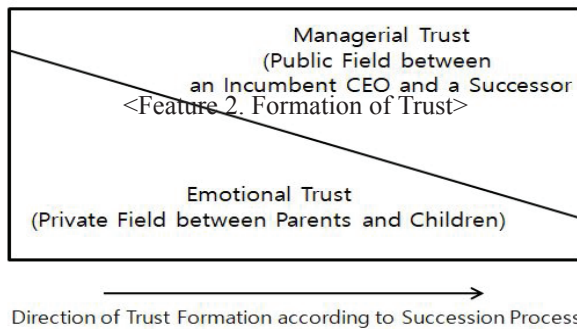
5. Conclusion

In order to improve the validity and theoretical level of the results of this study, we compared and analyzed the findings with previous studies to draw conclusions. Out of the results that fit the purpose of this study, we drew conclusions by dividing results into three distinctive and important topics. First, we analyzed the process of building trust between an incumbent CEO and a successor, and secondly, we analyzed the differences between the views of the trust in previous studies and the views of the interviewees in this study. Finally, we conducted on the role of an incumbent CEO and a successor.

The purpose of this study and the most characteristic part of the results was the process of building trust. Trust has been studied in various areas by many scholars with various definitions. However, in common, trust involves the concept of risk and interdependence (Rousseau et al., 1998). A representative concept in which trust formed could be described from Calculative trust to Relational trust (Rousseau et al., 1998). Besides, the process of forming knowledge-based trust into affective trust, (Lewicki & Bunker, 1996; Mcallister, 1995; Coleman, 1990), and the process of forming from Cognitive-based trust to Affect-based trust (Fryxell, Dooley & Vryza, 2002) also has similarities in the process of building trust.

On the other hand, the process of building trust between an incumbent CEO and a successor differed from that in previous research. The process of building trust between an incumbent CEO and a successor was characterized by being formed from Emotional trust to Managerial trust (Feature 2). Especially, the trust did not disappear at

the end of both sides and coexisted. This characteristic could be explained a result of contradicting the process of forming the trust that generally disappears at both ends in previous studies. The process of building trust between an incumbent CEO and a successor is different from the commonly defined process of building trust, and the form of trust that could be seen as a private field between parents and children is changed to the area of public trust in management.



The second result is as follows. Trust has been widely studied as an important and essential factor in a family business research. In previous studies, Goldber & Wooldrige (1993) argued that good relationship based on high trust with an incumbent CEO and a successor was a prerequisite for successful successors, and stressed that successful and good a successor had better relationships with an incumbent CEO than those who did not. According to a study by Cho et al. (2018), the high level of communication with parents based on trust was affecting the satisfaction of preparation for succession. Those who participated in the interview also responded that they would not have started succession if they had low or no trust. However, in the case of successors, trust was such a critical factor, but they answered that they had never seriously thought or thought about a trust relationship until they heard the question. In other words, it can be explained from a successor's point of view that trust formation with an incumbent CEO is formed under unconscious or unintentional circumstances. From the study of Morris et al. (1997), it was necessary to strive for building trust with family members for a successful succession, which meant the time before the successor decides or begins to succeed was needed. Therefore, we recommend that an incumbent CEO and a successor should prepare and make efforts to build trust long before the start of succession.

The final conclusion of this study is that: A family business consists of a subcategory system of family, business, and

ownership (Tagiuri & Davis, 1978), and family members in each or all systems have usually one or more roles that fit the system at the same time. These roles have complementary characteristics, but the overlapping roles may cause conflicts and conflicts between roles.

According to the results of this study, successors responded that the role distinction of these incumbent CEO was ambiguous and it was intensely difficult to distinguish. This situation led to conflicts or confusion with an incumbent CEO. On the other hand, incumbent CEOs were found to have clear boundaries on the division of roles of successors. Before the start of succession, an incumbent CEO had looked at a child only, not a successor. However, after the beginning of succession, an incumbent CEO had been a tendency to clearly distinguish the boundaries between children, a successor, or an employee, and they emphasized the division of roles significantly. This difference of perspective to roles means that work instructions, advice, etc. made without accurate recognition of the role may cause conflicts between an incumbent CEO and a successor. Thus, before succession begins, we recommend that an incumbent CEO and a successor should communicate each other what they have respective roles and how they redefine their roles in depth.

The limitations of this study and future studies are as follows: First, category six did not exceed the criteria for ensuring validity. For category 6, the consensus matching result between independent coders was 0.742, which did not exceed 0.8 given by previous studies. In particular, in some cases, the proportion of discrepancies between the researcher and independent coders was also high. Due to this reason, complementary research on category 6 is expected to be studied in the future. Second, Eisenhardt recommended that the same research conducted by other researchers, but this study made efforts to ensure validity and reliability using independent coders without managing an interview team due to various realistic limitations. In future studies, studies should reflect these limitations. Finally, there are limitations of perspectives on various stakeholders. This study was conducted only from the perspective of an incumbent CEO and a successor, according to the purpose of this study. However, the succession process involves various stakeholders other than an incumbent CEO and a successor. Therefore, further studies would reflect the various stakeholder' perspective.

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The Role of Youth Entrepreneurship for Economic Development in Nepal

Gopal Bahadur Bhandari

*PhD Scholar, Faculty of Business and Accountancy
Lincoln University College, Malaysia
gopalbnb@gmail.com*

Abstract

There is no doubt that young people are more mobile, ready for change, adaptable, these features create the need for a special class of singles - young entrepreneurship.

Youth entrepreneurship is one of the factors in the development of the country's economy, so there is an urgent need to attract young people to entrepreneurship. The GEM Report (2012) defines youth entrepreneurship as an additional way to allow young people into the labor market and encourage job creation. Young entrepreneurship is likely to be a panacea for solving youth unemployment problems. Activity in the aspect of youth entrepreneurship is aimed at solving problems, primarily of socio-economic nature: reducing the unemployment rate, the possibility of creating a number of new jobs, the development of new directions and sectors of the economy, etc. The article presents an interpretation of youth entrepreneurship, which identified some of its features, as well as a number of strengths and weaknesses of this phenomenon.

Introduction

We are facing a great test of our time - an epidemic of youth unemployment. Half of the world's young people in the labor force are either working poor or unemployed. The global youth unemployment situation is intolerable, in particular for young women. In countries rich and poor, unemployment rates for young people are many times those of adults and of course joblessness is the tip of the iceberg. Many are stuck in low wage work with no protection in the informal economy. Many others find that their schooling has not equipped them with the tools for today's job market ... Work is far more than a source of income; it is a source of dignity!

Ban Ki Moon, ILO, 2014

The recent economic crisis has led to a disproportionate increase in youth unemployment around the world. Young people in both developed and developing economies are facing harsh labor market conditions. In the developing world, where almost 90% of the world's youth is located, many young people are living in poverty with their only access to work being informal or under indecent employment conditions. However, youth joblessness is not only a problem of poor countries but a truly global problem with an equally grim picture being drawn in the developed world. In Europe, leaving every fourth employable young person without a job (ILO, 2012a) in many countries these numbers are even greater.

According to the ILO the overall youth unemployment is projected to further increase in the near future. Other labor market indicators such as a widening gap between youth unemployment and adult unemployment and an increasing rate add up to an even bleaker outlook for youth. All these factors combined force us to take the initiative and come up with quick win solutions and at the same time sustainable ones for the future.

There is no doubt that young people are more mobile, ready for change, adaptable, these features create the need for a special class of singles - young entrepreneurship.

Youth entrepreneurship is one of the factors in the development of the country's economy, so there is an urgent need to attract young people to entrepreneurship. The GEM Report (2012) defines youth entrepreneurship as an additional way to allow young people into the labor market and encourage job creation. Young entrepreneurship is likely to be a panacea for solving youth unemployment problems.

Youth entrepreneurs are those individuals less than 30 years of age that are typically motivated to begin an entrepreneurial venture due to a variety of factors, including a desire to:

- ☐ be their own boss
- ☐ obtain an alternative route for advancement from what is perceived to be a dead-end job

- ☐ have more control over their own work and life
- ☐ provide innovative or competitive products and services
- ☐ prove they can do it
- ☐ obtain additional income

The activity in the aspect of youth entrepreneurship is aimed at solving problems, primarily of socio-economic nature: reducing the unemployment rate, the possibility of creating a number of new jobs, the development of new directions and sectors of the economy, etc. The article presents an interpretation of youth entrepreneurship, which identified some of its features, as well as a number of strengths and weaknesses of this phenomenon.

Youth

“Youth has a natural disposition for innovation and change on which we can capitalize, as long as we are clear that successfully launching a new enterprise - however small - is a process of innovation.”

Carlos Borgomeo

In the broadest sense youth can be considered the transition period from the dependence of childhood to the independence of adulthood and an awareness of that independence (UNESCO, 2014). Yet, as described above this is a somewhat relative measure and depends on a variety of factors such as the average age at which young people complete their education (or training) and the average age at which their communities would expect them to take on adult roles (e.g. enter employment). From a legal perspective the definition of youth also varies with respect to reasons such as marriage, voting rights, land rights, criminal offences, and military service, among others. Consequently, countries vary considerably in their definition of youth and policies need to be customized to the local conditions. While Uganda defines youth from 12–30 years, Nigeria and Bangladesh define youth from 18–35 years. In the context of Nepal, the National Youth Policy 2015 defines youth as “citizens between the ages of 11 and 40”. The government's Youth Vision 2025 has categorized the youth into two age groups of 16 to 24 years and 25 and 40 years.

The United Nations (ILO) defines “youth” as persons between the ages of 15–24 whereas the government of Nepal extends the definition to those between 16 and 40 years of age, which accounts for over 40 percent of the country's population, according to the Population and Housing Census Report 2011. Among them, nearly 46

percent are men and more than 54 percent women. Taking into account a broad range of contextual issues, UNDP Nepal uses a more flexible definition of youth in order to align with Nepal's socio-cultural context and the national youth priorities.

Youth Issues in Nepal

Prospects of youth entrepreneurship in Nepal

Numerous factors are impeding the development of Nepal's youth, including shortage of employment opportunities—as a result of which overseas migration and brain-drain has increased, with its own repercussions: limited participation in political processes, involvement in illicit activities, vulnerability to climate change, and multiple forms of discrimination.

Youth and employment

Unemployment rates are higher for young people than for the whole of the Nepali population. The unemployment rate for those aged 15–29 is 19.2 percent. Young women also fare worse than men regarding their employment ratio (33.4 and 42.8 percent, respectively) and their labour force participation rate (43.0 and 51.7 percent, respectively). In addition, close to 27 percent of all unemployed youth have been looking for work for more than one year. These young people will experience increasing difficulty finding decent jobs that allow them to lift themselves and their families out of poverty

Youth and migration

Over 1,500 young Nepalese leave the country on a daily basis to enter overseas job markets. According to data from the World Bank, Nepal receives remittances worth about 28 percent of the country's GDP. In the last two decades, the country has seen a dramatic rise in internal and international migration, from rural areas to urban centers, and from Nepal to India and Middle East countries. According to Labour Migration for Employment, A Status Report for Nepal 2013/14, overseas employment is heavily male dominated; roughly 95 percent of all labour permits are given to men. However, other data that captures those working in India (where labour permits are not required) or those leaving to work abroad through informal channels indicates that female migration might be as high as 12 percent of the total workforce abroad. Poverty, limited employment options, delayed political transitions and instability are some of the contributing factors to the increase in youth migration.

Youth and participation

The commitment and contribution of young people has been crucial to the success of many political milestones that have shaped the establishment and strengthening of democracy in Nepal. These include, among others, movements to bring about the end of the Rana rule in 1951; the dissolution of the Panchayat regime and establishment of a constitutional monarchy in 1990; as well as the 2nd people's movement of 2006 which opened the way for Nepal's transformation into a federal democratic republic. Despite these examples, the meaningful political engagement of youth and youth issues in general has not been given an important place in the country's key priorities. Young people continue to remain at the margins of the political, social and economic spheres. Formal political processes and institutions are still characterized by limited youth participation. Even in the youth wings of political parties, almost all leaders are above 35 years of age. Young men and women are thus very often disillusioned with political leadership and excluded from policy development and decision-making institutions. The political activism of young Nepalese has therefore not always been channeled through significant formal mechanisms. Youth participation has also been hindered by the absence of local elections between 1997 and 2017.

Youth and peace building

The armed conflict that lasted from 1996 to 2006 had significant implications on youth in Nepal. While many young people became victims of human-rights abuse, sexual violence and torture during that period, many others, particularly marginalized youth who did not have access to viable livelihood and employment options were pulled into illicit activities and acts of violence. Much attention is thus needed to enable the social, political, economic and, in some cases, cultural reintegration of these young men and women into society.

Youth and resilience

Nepal ranks 4th, 11th and 30th out of 198 countries in terms of relative vulnerability to climate change, earthquakes and flood hazards respectively. As the severity of climate change increases, and with it, the frequency of extreme events, the existing vulnerabilities of young people risk being exacerbated.

On the other hand, however, if their networks and capabilities can be effectively harnessed, youth also have great potential to contribute to the recovery and

resilience of their communities with regard to the impacts of natural disasters, as was seen in the aftermath of the 2015 earthquake.

Youth and diversity and vulnerability

Young people in Nepal are not a homogeneous constituency, and their needs and life experiences vary dramatically. Different groups require specific attention with regard to the particular challenges of exclusion, inequality and discrimination they face. These include young women vulnerable to sexual abuse and exploitation; highly marginalized indigenous youth; disadvantaged young women and girls; Dalit youth; young people with disabilities; youth without basic education; unemployed youth; migrant workers and their families; rural landless and land-poor youth; young bonded and forced laborers; young urban slum dwellers and squatters; conflict-affected youth; young people especially vulnerable to climate risks; sexual and gender minority youth; and young people living with HIV, among others.

National Framework For Youth

There are a number of policies, plans and infrastructures in place for the empowerment of young people in Nepal, to enable them to contribute to development processes. These commitments, if translated into action, can help youth take up their roles as active citizens for transformational change.

Several key national-level structures and policies have prioritized youth issues:

Constitution of Nepal

The Constitution of Nepal, promulgated in 2015, promotes policies to encourage youth participation in the all-round development of the country. For this, it emphasizes the creation and provision of opportunities for young people in the fields of education, health and employment, aimed at boosting their personal development and empowerment.

Ministry of Youth and Sports

The Ministry of Youth and Sports was established in 2009 with the mandate of promoting and supporting youth development in Nepal. The ministry's core areas of work include developing youth policies, strategies and plans; creating implementation mechanisms; and ensuring resources are allocated to execute these policies and plans. It is also responsible for monitoring and evaluating the implementation of the National Youth Policy. It has launched several programs for youth welfare, such as the Local Youth Partnership Program 2009/2010. The

Ministry of Finance, meanwhile, allocates a portion of the annual budget to youth development activities, such as the Youth Self-Employment Program, the Grand Youth Sports Competition, and the Youth Mobilization Program, among others.

National Youth Council

The Ministry of Youth and Sports has formed an autonomous and executive National Youth Council. This council consists of representatives of concerned ministries, representatives of youth organizations of political parties and office-bearers appointed by the government. The Council's main objectives are to coordinate, harmonize and facilitate youth-related programmes launched by governmental and non-governmental institutions, as well as the private sector.

Youth Vision 2025

This 10-year strategy for youth development was prepared by the National Youth Council under the Ministry of Youth and Sports, and mainly focuses on areas of education, employment, health, social security, leadership development and sports and entertainment. It is to be implemented through the National Youth Council and its chapters at sub national levels.

National Youth Policy

The National Youth Policy was developed by the Ministry of Youth and Sports to empower young people. It aims to do this by building youth capacity to contribute to a prosperous, modern and just Nepal, and integrating young people in national development through meaningful participation and leadership. The policy was developed in the context of the Interim Constitution of Nepal 2007, which mandated that the state "shall pursue a special policy to mobilize youth human resources for the development of the country."

Nepal's 14th Development Plan

The 14th Development Plan (2016/17-2018/19) includes a chapter on youth development, in which it recognizes the role of young people as major contributors to socio-economic development and sustainable peace, and the need to provide them opportunities to exercise their potential. This acknowledgement of youth in the government's plan represents an important step forward, a victory for the coalition of organizations advocating on behalf of Nepal's youth. According to the plan, the policies and programmes of the government for the fiscal year 2073-74 (2016-2017) have highlighted provisions

targeted at youth. 50,000 young people, for instance, will be self-employed every year through the Youth Self-Employment programme, which is to be scaled up. As part of this, unemployed youth will also be granted access to concessional loans on the basis of project ideas.

Nepal's 15th Development Plan

The 15th Development Plan (Fiscal Year 2019/20 – 2023/24) includes a chapter on youth, in which Constitutional provision for the development of youths, the existence of various structural provisions for the holistic development of youths, increased political will for the development of youths, representation of youths in all three tiers of governments, opportunities for globalization and development of information technology, creating employment opportunities and self-employment opportunities as a high priority of the government, and the existence of demographic dividend are the major opportunities for youth development.

According to the plan, the policies and programmes of the government for the fiscal year have highlighted with the increased accessibility of youths in the financial resources and skill enhancement training, youth participation in the country's business and enterprises will have increased. Status of youth employment and self-employment will have improved significantly and the number of youths willing to go abroad for high-risk jobs will have dropped substantially. Increased and meaningful participation of youths in the process of governance will have contributed to the promotion of good governance. Youth volunteers will have been mobilized widely in physical infrastructure, health, education, agriculture, environment, and social development along with disaster management activities.

Youth organizations

National Non-Governmental Organizations and Civil Society Organizations play a vital role in youth empowerment in Nepal. There are almost 46,500 NGOs affiliated with the Social Welfare Council, among which around 20 percent are youth organizations. There are also around 190 INGOs working under agreement with the council, some of which directly work on youth issues. UNDP Nepal has partnered with several of these organizations in collaborative efforts for youth engagement and empowerment.

Entrepreneurship

Different opinions on, and therefore different definitions of, entrepreneurship can be observed in the academic

literature, in policy documents and in the media. The GEM model accepts the multifaceted nature of entrepreneurship. Entrepreneurship is acknowledged as one of the drivers of sustainable economic growth because entrepreneurs create new businesses, drive and shape innovation, speed up structural changes in the economy, and introduce new competition – thereby contributing to productivity. Entrepreneurship can drive job creation and contribute to economic growth that is inclusive and reduces poverty. Research has attached numerous definitions and explanations to the term entrepreneurship. For the purpose of this paper, entrepreneurship is defined as ‘any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business’.

In some ways, entrepreneurship has baffled researchers in social sciences the way subatomic particles have baffled physicists. Its impact is observed, but the thing itself seems ephemeral and invisible (Rogoff and Lee 1996). Just like the physicists, who study the traces of the particle action on the electronic microscope screen, the researchers from the entrepreneurship domain have examined its economic results: new enterprises, more jobs, new products invented and services offered. But when it comes to determining what exactly created these phenomena, very few experts agree with each other.

Why youth entrepreneurship matters

The traditional job for life career path has become rarer and youth entrepreneurship will need to be seen as an additional way of allowing the youth into the labour market and promoting job creation. Organizations and initiatives such as the ILO20, United Nations, World Bank and YBI highlight a number of additional positive advantages to stimulating youth entrepreneurship:

It is an option to create employment for the youth. Young entrepreneurs are more likely to hire fellow youths. Young entrepreneurs are particularly responsive to new economic opportunities and trends.

Young people are active in high growth sectors. Young people with entrepreneurial skills are better employees. They are more innovative and often create new forms of independent work; • Young people who are self-employed have higher “life satisfaction”.

Entrepreneurship offers unemployed or discouraged youth an opportunity to build sustainable livelihoods

and a chance to integrate themselves into society. Entrepreneurial experience and/or education help youth develop new skills that can be applied to other challenges in life. Non-cognitive skills, such as opportunity recognition, innovation, critical thinking, resilience, decision making, teamwork, and leadership will benefit all youth whether or not they intend to become or continue as entrepreneurs.

Know about young entrepreneurs in the Asia Pacific and South Asia

- Only 16.8 percent of the youth indicate that they have both the belief that there are good business opportunities as well as the belief that they have the skills and knowledge required to start a business.
- Ten percent of the youth are involved in either nascent or new businesses
- The majority (80%) of youth businesses are opportunity-driven.
- Forty percent of the youth indicated that fear of failure would prevent them from starting a business.
- Just over 60 percent (61.2%) of the youth believe that starting a business is a good career choice.
- The youth (68%) in this region are least likely to believe that successful new business owners receive high status.
- Almost 9 percent of the youth involved in new and nascent businesses have high growth expectations i.e. intend creating 20+ jobs in the next 5 years.
- Over half (53.8%) of the youth in this region have at least a post-secondary school degree; this is the highest percentage in all regions.
- The youth in this region are most likely to make use of an on-line trading environment.
- While three-quarters (73.2%) of new or nascent businesses are reliant on personal/family or friends for funding to start a business, family and friends are the primary source of funding (41.5%) in this region.
- Young nascent or new businesses in this region are least reliant on friends or family as customers, with 29 percent indicating that none of their customers friends or family.
- The youth in this area have a number of people influencing their decision to start a business.
- Young nascent and new business owners, as a long term option, would prefer to continue to run their own business.

Challenges of youth entrepreneurship in Nepal

The challenges facing young people when deciding whether to start a business could be due to issues specific to the area in which the young person operates. These issues could be gender- or culture-related, educationally-based or due to the particular political or economic issues facing an area.

No doubt, entrepreneurs, all over the world, face some common constraints/ challenges. Furthermore, it is also well evidenced that both adult run enterprises and youth run enterprises face some similar kind of problems in many respect such as lack of access to capital, access to lucrative market, lack of management skills, inadequate planning, lack of new product development etc (Chigunta 2002). With this current magnitude of youth unemployment in Nepal, as well as the reluctance of several traditional industries to employ young graduates, fostering youth entrepreneurship could be a better strategy to address the issue of unemployment in the country (James 2012). Central Bureau of Statistics report (2010) argued that youth unemployment in this country can not only be addressed with singly youth policy, rather youth development in the country is everyone's responsibility, such as government, ministry of youth, private sector, civil society, NGO's and other concerned stakeholders. Therefore, the general factors that are likely to inhibit youth entrepreneurship in Nepal are outlined below.

Access to finance

Access to finance is also very important for every individual to achieve their business objectives, particularly for start-ups and growth. Therefore, for potential entrepreneurs, raising adequate finance to meet the financial requirement of business opportunities is frequently highlighted as one of the most crucial entrepreneurial inhibitors (Schoof 2006). In addition, young entrepreneurs find the added burden of compliance costs and local authority charges, most difficult to manage when starting a business venture. status/form of enterprises, lack of micro funding and seed funding, etc.

Administrative and regulatory burden:

Today, young entrepreneurs face numerous administrative burdens including business registration, tax administration, obtaining investment approvals and business licenses, coping with copyright and patent regulations, competition law, access to work space and long term leases, construction and building permits, customs clearances, utility hook-ups etc (La Porta, Lopez-

de-Silanes et al. 1999). These issues are particularly considered to be a burden for young people who want to start-up new business venture, as young people often do not have prior or less experience in such matters.

Lack of interest in entrepreneurship

Entrepreneurship is not being regarded as better career option amongst youth in Nepal; rather they prefer to embrace paid work far in Middle East and Malaysia as migrant worker. Young graduates from Universities and migrant worker returnees should be encouraged to equip to pursue career in entrepreneurship, instead of looking for a paid job (Richards 2006). Research had found that the youth's low level of economic activity is accompanied by their taking little interest in starting their own businesses. It is worth noting that the interest shown by Nepalese youth in entrepreneurship lags far behind that of their global counterparts.

Business assistant and support

The chances of creating a successful and sustainable business depends on how much business assistance a young entrepreneur obtains in the start-up and new business phases. Support services, including mentors, support networks, business clubs and incubators can hold the key to transforming the start-ups into successful small and medium businesses (Schoof 2006). There are number of support structures, which are aimed at dealing with this issue.

Inadequate entrepreneurial skills:

There is a great deal of entrepreneurial skills shortage within the SME's sector, particularly among young people in Nepal, and this could deteriorate creativity and innovation for products and services (Gwija 2014). Therefore, discouragement of youth entrepreneurship in Nepal has been linked to lack of business skills and no access to business information (Adhikari 2008). These business skills include recognition of opportunities, innovation, creativity, determination, risk taking attitude and entrepreneurial characteristics

Access to market: The lack of sustainable markets for entrepreneurs' products and services are among factors that could lead to business failure (Nieman and Nieuwenhuizen 2009). Most of the youth led entrepreneurial ventures do not pay attention on marketing which ultimately lead to customer dissatisfaction, and survival of the business may not exist in the long run (Gwija 2014). In Nepal, most of the small and medium enterprises that youth owned

tend to operate only among clients they know, products are sold to the relatives and friends, and suppliers tend to be the people they know through family or other close connections (Timmons 1985). Most of the youth has not been trained in participating in market place, or in tapping new markets (Bushell 2008). Entrepreneurs are responsible for delivering products and services to the market and make profit by selling them.

Access to formal education

Entrepreneurship education is crucial in assisting young people to develop entrepreneurial skills, attributes and behaviors as well as to develop enterprise awareness to understand and to realize entrepreneurship as a career option, because entrepreneurship is one of the best career options for the young people (Schoof 2006). Entrepreneurship education is not only a means to develop youth entrepreneurship and self employment, but at the same time to equip young people with the attitudes and skills, necessary to handle uncertainty in today society. Enterprise education is therefore seen as a highly valuable preparation for the changing job market and economy in which young people have to operate (Gallaway, Andersson et al. 2005). Although education and training has been given priority in Nepal over past decade, entrepreneurial education has not been incorporated in mainstream education system.

Social cultural constraints:

The 2006 GEM report discovered that the upbringing environment of a child influenced their career of choice, mostly believing that seeking for a paid job was a better option (Minniti, Bygrave et al. 2006). Conversely, Fatoki and Chindoga (2011) believe that these findings suggest that the existence of social-cultural constraints that are likely to negatively affect the participation of young women in entrepreneurship.

The Role of Entrepreneurship in Economic Development

For sake of comparison, the World Economic Forum defines three consecutive stages of economic development that correspond to progress towards economic prosperity. Economies in the basic agrarian stage are labeled “factor-driven.” Economies that have advanced beyond this initial stage are labeled “efficiency-driven” and are host to a developing industrial sector. Economies that progress beyond this second stage into the third, prosperous stage are labeled “innovation-driven.” Note that every national economy is host to some level of each

of the three principal stages of economic development. However, the WEF group’s national economies into one of the three according to which stage is dominant WEF_ GlobalCompetitivenessReport_2009-10.

Nepal’s economy is categorized within the factor-driven stage, and its entrepreneurial characteristics are measured here against those of other countries that fit into this stage and of countries that have reached the factor-driven stage.

Entrepreneurship in Factor-Driven Economies

Economic development consists of changes in the quantity and character of economic value added (Lewis, 1954). These changes result in greater productivity and rising per Capita incomes, and they often coincide with migration of labor across different economic sectors in the society, for example from primary and extractive sectors to the manufacturing sector, and eventually, services (Gries and Naude, 2008). Countries with low levels of economic development typically have a large agricultural sector, which provides subsistence for the majority of the population who mostly still live in the countryside. This situation changes as industrial activity starts to develop, often around the extraction of natural resources. As extractive industry starts to develop, this triggers economic growth, prompting surplus population from agriculture to migrate toward extractive and emergent scale-intensive sectors, which are often located in specific regions. The resulting oversupply of labor feeds subsistence entrepreneurship in regional agglomerations, as surplus workers seek to create self-employment opportunities in order to make a living.

Traces of Entrepreneurship in Nepal

Nepal has yet to achieve the true potential of its economic strength. According to the Global Entrepreneurship Monitor, entrepreneurship is one of three primary contributors to national economic growth, along with established firms and new branches of these firms. (“2008 Executive Report,” p. 10). Nepal has not exhibited yet the level of entrepreneurial activity among the nations included in the Global Entrepreneurship Monitor. While recent entrepreneurial activity in Nepal reflects a lack of entrepreneurship, some notable exceptions have surfaced over time and have made significant impacts on the economic growth of Nepal.

The Global Entrepreneurship Monitor identifies three framework conditions of entrepreneurship: attitude, activity, and aspiration. In order for a nation to successfully foster entrepreneurship, it must endorse a supportive

entrepreneurial attitude, encourage entrepreneurial activity, and promote hopeful entrepreneurial aspirations. (“2008 Executive Report,” p. 9) Figure 1 illustrates the relevant factors that I examine in addressing each of these three conditions.

The GEM model recognizes entrepreneurial attitudes, activities and aspirations as dynamic, interactive components of national entrepreneurial environments. The adult population survey includes questions relating to all three of these components. Entrepreneurial activity does not take place in a vacuum. Entrepreneurial attitudes and perceptions play an important part in creating an entrepreneurial culture and have a profound effect on a number of activities in the entrepreneurial pipeline.

Youth Entrepreneurship: A Powerful Resource

The potential for Nepal to achieve substantial economic growth by taking advantage of its youth entrepreneurship resource is tremendous. Roughly 40.35 percent of the total Nepal’s population 28,087,871 is between the ages of 16 and 40. (The Fifteenth Plan -2023/24)

Nepal’s economy will gain a competitive advantage through the engagement of its youth in entrepreneurial endeavors. Spreading youth enterprise can reduce welfare costs and increase revenue for the government. It can also encourage the development of a dynamic small business sector, increase demand in the local economy, and improve community involvement. Furthermore, young minds may be particularly responsive to emerging trends and opportunities in the economy. Young entrepreneurs can also offer a significant resource in being able to identify alternatives to current organization, technology, and market approaches.

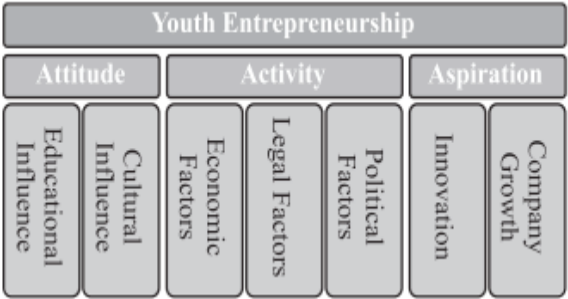
As Carlos Borgomeo, Vice Chair of the OECD LEED Directing Committee emphasizes: This is the opportunity that has to be seized. Youth has a natural disposition for innovation and change on which we can capitalize, as long as we are clear that successfully launching a new enterprise — however small — is a process of innovation. (Borgomeo, as quoted in Chigunta, p. 2)

In addition to its advantages at the national level, youth entrepreneurship offers a variety of benefits specifically to the young ambitious men and women who pursue their own entrepreneurial endeavors. Chigunta notes that youth enterprise could provide a sense of “meaning and belonging” to the marginalized youth present in the developing economy of Nepal. (Chigunta, p. 2) Programs that support the development of youth entrepreneurship

provide their participants with skills that can also help them adapt to non-entrepreneurial employment. Therefore, regardless of whether program participants pursue their own entrepreneurial ambitions or seek employment in established firms, their value to business and thereby to the economy of Nepal is significantly enhanced.

Entrepreneurship in Nepal

The Global Entrepreneurship Monitor identifies three framework conditions of entrepreneurship: attitude, activity, and aspiration. In order for a nation to successfully foster entrepreneurship it must endorse a supportive



Source: Author’s figure based on terminology from “2008 Executive Report.”

Entrepreneurial Attitude in Nepal

Before any opportunity is pursued, the entrepreneur-to-be takes a moment to assess its value. It is during this moment that the first framework condition of entrepreneurship, entrepreneurial attitude, becomes relevant. Educational and cultural influences play major roles in shaping this entrepreneurial attitude.

Educational Influence

Highly effective entrepreneurship education and training must begin early. According to the GEM “2008 Executive Report,” the quality of entrepreneurship education and training outside of the formal education system was consistently higher than entrepreneurship education and training during formal schooling in the countries included in the report.

However, in efficiency-driven economies the quality of entrepreneurship education and training outside of formal schooling was reported to be on average 60 percent higher than the quality of entrepreneurship education and training during formal schooling. (“2008 Executive Report,” p. 43) Alternatively, in innovation-driven economies exhibiting more complex, higher quality entrepreneurship, the quality of entrepreneurship training during school was assessed by experts to be just 25 percent lower than training outside school. This comparison is evidence

that in order to elicit the development of promising entrepreneurial skills, the quality of entrepreneurship training during formal schooling must be both high and on a par with entrepreneurship training outside of formal schooling.

Nepal in particular reported quality levels of entrepreneurship education and training that were below the efficiency driven economy average for training during school and outside of school respectively, indicating alarmingly low-quality entrepreneurship education and training. Furthermore, GEM entrepreneurship experts reported that the availability of entrepreneurship education and training was lower in Nepal than in nations with innovation-driven economies. These deficits may be reflective of the low level of government spending on education.

Cultural Influence

A cultural environment that supports entrepreneurship is critical in developing a successful entrepreneurial attitude. As recently the country's population was found to be slightly supportive of entrepreneurship.

In 2009 the GEM reported that the fear of failure in business and the pessimism about the availability of potential business opportunities were both on the rise. The gender disproportion of new entrepreneurs hints at a lack of support for females.

Entrepreneurial Activity in Nepal

As illustrated previously in Figure 1, the second framework condition of successful entrepreneurship is entrepreneurial activity. The entrepreneurial activity of new entrepreneurs is in turn influenced by three factors that affect the development and viability of their entrepreneurial efforts: economic, legal, and political factors.

Economic Factors

One of Nepal's main competitive advantages in its push toward greater economic growth is its market size. In addition to its domestic market, Nepal is sandwich between two giant's economies -China and India. The nation is geographically positioned in close proximity to them. Further bolstering its market base, Nepal also enjoys free trade. This combination of market size and accessibility bodes well for youth entrepreneurship because of the expansive opportunity set it creates. In addition to the availability of markets, adequate funding is critical in order to capitalize on entrepreneurial opportunities.

The availability of funding is often influenced by the macroeconomic stability of the nation.

Legal Factors

The legal procedures of starting a business can severely inhibit entrepreneurial development if these procedures are time-consuming and labor-intensive.

The "Doing Business 2020" report indicates provides a slight advantage for developing youth entrepreneurship in Nepal

Furthermore, the low efficiency of the legal framework in settling disputes and challenging regulations along with the lack of transparency of government policymaking have created concerns in

Political Factors

Several political factors also affect entrepreneurial activity. The government has introduced incentives to boost innovation through research and development by providing subsidies to firms that increase their research and development spending from year to year

However, the optimal environment for entrepreneurship is one that not only is free of political barriers, but one that also includes policies that explicitly promote and support entrepreneurship through focused funding and educational programs. This support is especially necessary for youth entrepreneurship to thrive because of the start-up and development difficulties that may stem from the lack of confidence during young age.

As Chigunta notes, "The tendency is to subsume youth into educational, health, culture and sports policies." (Chigunta, p. 16) In doing so, the government ignores the specific business needs of entrepreneurial youth, such as funding and access to business education. The government-funded Social Development Programme for Youth, part of the Sustainable Development Program in the impoverished GAP , is one program that addresses this concern. (Sustainable Development . . .)

While policymaking may be showing signs of improvement, the lack of efficiency and transparency of the legal system in mentioned earlier has resulted in a disapproving public opinion of politicians themselves

Entrepreneurial Aspiration in Nepal

In addition to entrepreneurial attitude and activity, the third framework condition of successful entrepreneurship noted in Figure 1 is entrepreneurial aspiration. As defined by the Global Entrepreneurship Monitor, entrepreneurial aspiration is "the effort of the entrepreneur to engage in

introducing new products or new production processes, to open foreign markets, and to plan to increase the number of employees substantially.” (“2008 Executive Report,” p. 38) These aspirations correspond to two main targets: innovation and company growth

Innovation

An entrepreneur’s aspiration for innovation is responsible for reviving industries with new concepts and is therefore critical for national economic growth. Nepal aspirations and expectations for innovation have been low in recent years.

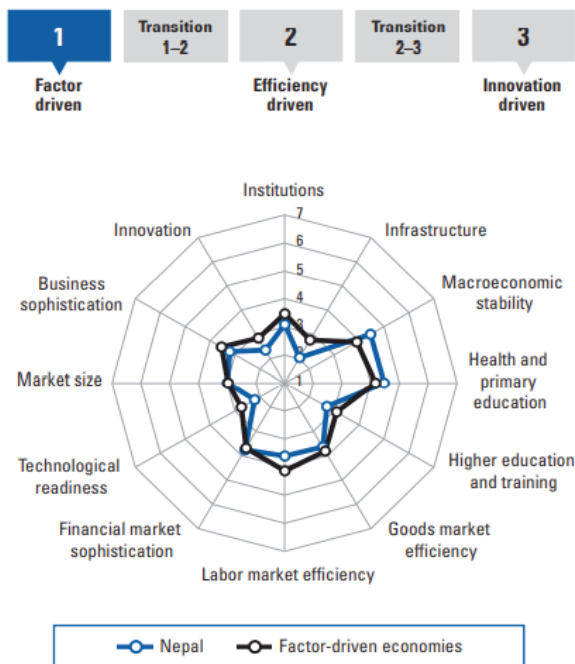
Company Growth

Unlike these low aspirations for innovation, Nepal entrepreneurs’ aspirations and expectations for company growth are quite optimistic.

While few entrepreneurs are supported enough to establish themselves, many of those entrepreneurs who are able to do so in less-than-ideal circumstances are confident that they will achieve continued success. This confidence is a strong indicator that, if more support for entrepreneurial attitude and activity is forthcoming on a national level, economic development through entrepreneurship is distinctly possible.

Plans for Advancement

Stage of development



Source: Author’s figure based on research and statistics from “Global Competitiveness Report 2009–2010.”

Figure 2 illustrates Nepal's current position with regard to the World Economic Forum’s pillars of global competitiveness and economic development shown on the 12 axes. Nepal’s position is also compared with the averages of factor-driven economies to help illustrate what Nepal must focus on in order for its economy to reach the transition stage of economic development through entrepreneurship. The level of development in each pillar is indicated by the distance from the origin along that pillar’s axis, with greater distances representing greater development.

As shown in Figure 2, higher education and training along with health and primary education, two key areas of influence on entrepreneurial attitude, represent two major gaps in Nepal’s economic strength. Therefore, to help develop its entrepreneurial attitude, Nepal should first focus on upgrading its primary education system through greater funding for teachers, technology, and educational programs. In turn, these upgrades will enhance the basic skills that support youth entrepreneurship.

Next, the admissions process for higher education institutions should be reformed to acknowledge applicants’ qualifications and interests and not just their Student Selection Exam scores. Furthermore, higher education administrators in Nepal must revise their programs to offer more interdisciplinary opportunities. Young entrepreneurs must have a broad range of technical and strategic skills, and the current structure of higher education, discussed earlier, serves only to narrow this set. Also, the spread of programs that promote attention to entrepreneurship at all levels of the educational system will help develop the entrepreneurial attitude in Nepal. (“2008 Executive Report”)

With these changes, Nepal can better foster effective youth entrepreneurship education. Finally, the introduction of more public and private initiatives that help create awareness of entrepreneurial. Nepal’s economy must also change, starting by addressing its remaining problems in the basic economic requirements for entrepreneurship. Among the shortcomings illustrated in Figure 2, the most pertinent to Nepal’s growth is further development of its infrastructure. In doing so, Nepal should give special attention to its ports and electrical supply as these elements are critical for the viability of enterprises. Continued improvement of macroeconomic stability and developing Nepali financial markets to better provide grants, loans, and credit for young entrepreneurs will also aid the

environment for youth entrepreneurship. With regard to the legal system, changes in the legal structure to make it easier to start up and operate a business are needed to heal the inefficiencies in both the goods and labor markets, as illustrated in Figure 2.

These changes include improving the ease of obtaining construction permits as discussed earlier. Furthermore, the reform and enforcement of intellectual property rights legislation in order to promote new enterprise creation remain critical. The technological sector is sure to become even more fruitful for young entrepreneurship in Turkey, and this sector is particularly affected by intellectual property rights. As evident by the confident expectations for company growth in Turkey discussed earlier, encouraging entrepreneurial aspiration for such growth is not a primary concern. However, with regard to its aspirations for innovation as shown in Figure 2, Nepal has room for improvement. The aspirations for innovation must be encouraged by greater public and private funding and promotion directed towards youth entrepreneurial research and development. These efforts will help young entrepreneurs in Nepal develop new products and open new markets.

Conclusions

Youth unemployment is currently a concern for all regions. The long-term negative impact of youth unemployment has been well-documented, and youth frustrations have seen an increase in unrest in various areas across the globe. Policies that focus on youth and in particular that focus on improving work opportunities for young people are imperative. The recommendations indicated above are recommended policy areas by region where interventions could either: create a more enabling environment for young entrepreneurs, such as better equipping young people to see entrepreneurship as a viable career option or improving entrepreneurial education; or enable youth job creation, such as encouraging high growth expectations amongst young entrepreneurs.

It is important to remember that globally economies are constrained by levels of unemployment not seen since the great depression. The high levels of unemployment and debt as well as low levels of growth is affecting not only the developing world but, the impact is currently as noticeable, and in many cases, more noticeable in the developed world. Sluggish growth, high unemployment and persistently high debt levels have created a global perception of negativity. Within this environment, it is

even more difficult for governments to work towards limiting the negative and possibly long-term effects of youth unemployment. The financial crisis has had an enormous impact on the global employment and business environment. The ability of young people to perceive good business opportunities in this climate is challenging, however governments, the media and educational institutions need to manage young people's expectations, without which, young people are less likely to see themselves as potential entrepreneurs. GEM clearly indicates that it is difficult to make direct comparisons between countries with respect to entrepreneurial development as countries have a particular cultural, economic, political and social structure that influences the entrepreneurial climate in which businesses operate. The recommendations for the youth in the various regions are therefore fairly general as there is considerable diversity amongst the youth even within each region. The recommendations below attempt to highlight key areas where attention could improve various facets that hinder the likelihood of increased rates of entrepreneurial activity on the youth.

Recommendations

The following recommendations are provided to counter the major obstacles faced by youth entrepreneurs in Nepal.

Nepal government should simplify the banking procedures and loans should be sanctioned by focusing more on easy and widely accessible credit, collateral free loans and expansion capital.

More attention should be given to make easy access with regard to business funding for youth entrepreneurs, who have convincing business plan but short of start-up capital to materialize the ventures.

Nepalese government should focus on youth entrepreneurship development initiatives. These may include business advice, counseling, training, finance, mentoring and incubators.

The effective and efficient support structure of government to nurture business development should be. The country's government should amend the legal procedures by reducing the cost of business registration for young people, as well as speed of business registration process. The curriculum must be revised and teachers trained in teaching entrepreneurial skills so children can realize their potential and become motivated in entrepreneurship early in life. Universities should include business incubators and mentors to promote aspiring as well as other entrepreneurs within the academic environment,

and offer entrepreneurship courses in their curriculum. The purposed government youth entrepreneurship support structure should coordinate with private entrepreneurship promoting organizations (for example FNCCI) in a campaign that teach and train all the school learners and university graduates with a idea that entrepreneurship as a best option for economic participation. Youth entrepreneurs could also share their past experience with these school learners and university graduates with the aim of developing entrepreneurship mindsets. Also, mass media and communication should be used to create awareness about issues and problems encountered in youth entrepreneurship development. Private organizations should welcome learners who need exposures and experience in their businesses by providing services such as internships, in-service training, leadership development and other voluntary participation for skill enhancement and experience. Learners in school and collage should be equipped with entrepreneurial and managerial skills and their attitude should be more influenced towards pursuing entrepreneurship. It is highly advisable that those parents and grand- parents, who have been running business for years, should expose/ place their children in their businesses. This will ensure that continuation of entrepreneurial culture will carry one to the next generation. Interacting with more experienced entrepreneurs (could be both youths and adults) within in the same business industry and other entrepreneurship support structures for business know-how is strongly recommended.

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The Success of Smart Factory Adoption : Firm's Dynamic Capability Perspective

Gyeung-min KIM

Mi-Jeong NAM

College of Business Administration

Ewha Womans University

gkim@ewha.ac.kr

Abstract

This research explores how the success of smart factory adoption is influenced by firm's dynamic capability. This research describes in detail underlying processes by which organizational elements are manipulated or adjusted in coordinated manners to implement smart factory successfully. Although understanding of these processes is essential to many researchers and practitioners in the field, the information system research literature contains very few examples of this type. The research is conducted in the following sequence: first, the concept of dynamic capability is presented followed by research methodology; and then the analyses of case data are presented followed by discussions and future directions.

Keywords

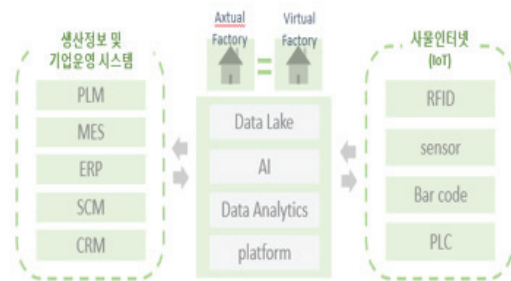
Dynamic Capability, Smart Factory and Innovation Adoption

1. Introduction

Many nations have tried to diffuse smart factory to modernize their manufacturing industry. However, the diffusion rate is slower than expected. According to the report from government-supported smart factory initiative aiming at 20,000 smart factories until 2022, only 5000 smart factory have been reported as of 2017 [KISTEP, 2018]. More specifically, using the four levels of smart factory assessment model – Foundation, Middle1, Middle2 and Advanced [KSFF, 2017], 79% of the firms are in Foundation stage with MES and ERP implemented. None of the firms are in Advanced stage with enterprise-wide integration of the physical and virtual world. The percentages of Middle1 (having real time monitoring of factory operation) and Middle2 (having optimized factory operation) stages are 19.2 and 1.7 respectively.

In a fully connected smart factory corresponding to Advanced stage, networked machines (with sensors), manufacturing information systems (PLM, MES) and enterprise systems (ERP, SCM, CRM) are fully integrated to the data platform to stream data into a data lake. The collected data in the lake are analyzed by data analytics tools and AI; and shared across value chain to achieve adaptability and optimization in production according to market demand [Porter, 2015]. Thus, the ultimate goal of

the smart factory is not to automate the manufacturing process but to gain new forms of competitive advantages through building manufacturing flexibility according to market demand.



To implement the vision of a fully connected smart factory across enterprise and external customers and suppliers, top management support and organizational-level efforts are required. The fully connected smart factory which is also called as Industry 4.0, is more than improving manufacturing process using digital technologies. It is about reshaping business strategies, capabilities and business models to create new value in the market.

In the highly dynamic environment, firm's innovation adoption is influenced by the firm's dynamic capability [Lin et al., 2016; Lin et al, 2020] that is defined as an ability

to achieve new forms of competitive advantages to adapt to the changing business environment [Teece, 2018; Helfat and Martin, 2015; Teece et al. 2016; Sirmon et al., 2007; Eisenhardt and Martin, 2000; Teece et al., 1997]. Drawing upon Chandler's seminal work on Strategy and Structure [1962], dynamic capability focuses on the relationships between environments, strategy, capability and business performance. An organization with dynamic capability is characterized to be high performing organization with strategic agility, reconfigured capabilities to be adaptive to market changes.

This research explores how success of smart factory adoption is influenced by firm's dynamic capability. This research describes in detail underlying processes by which organizational elements are manipulated or adjusted in coordinated manners to implement smart factory. Although understanding of these processes is essential to many researchers and practitioners in the field, the information system research literature contains very few examples of this type.

In the next sections, the concept of dynamic capability is presented followed by research methodology. Then the analyses of case data are presented followed by discussions and future directions.

2. Dynamic Capability

Process of forming capabilities: Bundling, Acquiring, Developing, Divesting and Coordinating

An organization is considered to be a collection of resources and capabilities¹. The skills and knowledge of the human resource along with other resources such as business processes and IT are linked together to form an organizational capability. Capabilities can be formed through bundling of the existing resources; or reconfiguration of the current resource bundle. Reconfiguration include recruiting and training new resources; as well as divesting less valued resources [Uhlenbreuk et al., 2003; Sanchez, 1995]. New capabilities are also developed by coordinating existing capabilities; or acquiring new capabilities [Hitt et al., 1998].

High Resource Fluidity: Organizational Forms, Process, Resource Allocation, HR Management

An organization with dynamic capability is characterized to have high resource fluidity [Doz, and Kosonen, 2008].

¹ Capability is defined as "an ability to perform a coordinated tasks utilizing organizational resources [Helfat and Peteraf, 2003:999]." The capabilities are ranged from less complicated to highly complicated capabilities [Brown and Eisenhardt, 1999; Siggelkow, 2002].

High resource fluidity represents an organization's ability to reconfigure business process, resource allocation, human resource management and incentives in order to make organizational transformation faster and easier [Doz, and Kosonen, 2008]. Successful redeployment of appropriate resources and implementation of new processes and systems require competencies embedded in business routines (i.e. organizational processes) and organizational structure to conceive, choose, implement such change [Peppard and Ward, 2004; Rockart, 2004]. Competencies are defined as organizational characteristics to enable organization to conceive, choose, implement strategies [Barney 1997]. Competencies are determined by 1) firm's technical infrastructure and 2) organizational ability to deploy appropriate resources as well as implement and operate new processes and systems [Peppard and Ward, 2004].

Components of Dynamic Capability

A set of routines comprising the dynamic capability are: sensing changes in the environment by perceiving incoming information (perception), filtering and analyzing perceived information (processing), making decisions based on the analysis result (responding), and reconfiguring organizational resources (aligning) [Seo and La Paz, 2008]. Dynamic capability relies on analyzing existing knowledge and identifying new knowledge by which the firm adjusts and reconfigures their resources to address a dynamically changing environment [Wang and Ahmed, 2007; Eisenhardt and Martin, 2000; Sull, 1999a, 1999b]. In the work of Lin et al. [2016], the components of the dynamic capability in adoptive management innovation include sensing capability, absorptive capacity, integrative capability, and relational capability.

Learning Mechanisms

Dynamic capability is associated with learning through experience and knowledge articulation [Hung et al., 2009; Zollo and Winter, 2002]. Experiential knowledge obtained from experiences allows better recognition on needs for change. Knowledge articulation improves causal links between action-performance, which results in adaptive adjustments to the operating routines [Zollo and Winter, 2002; Gavettia and Levinthal, 2000].

3. Research Methods

After review of the literature on the success of smart factory adoption, it was determined that no current theory is directly applicable to fulfill the objective. Therefore, "ground theory building" methodology is used for this

study [Glaser et al., 1999; Yin, 1984; Eisenhardt, 1989]. This methodology builds theory grounded in the data inductively which is different from traditional deductive theory building where an existing theoretical framework is chosen, then data is collected to show how the theory can be applied to the phenomenon under study.

After literature review on smart factory, interviews were arranged with people including business manager and smart factory/IS managers in Korea who had intensive experience of smart factory projects. Before conducting the interviews, a semi-structured interview protocol was prepared to guide the interviews. Since we focus on the dynamic capability of manufacturing firms with smart factory projects,

Group1	Group2	Group3	Group4
Phase	Challenges/Issues	Action Taken	Dynamic Capability Required
Pre-Implementation	Sensing changes in manufacturing environment (COV, JIN, VEL)	Applying for government fund	Sensing/Processing/Responding
	Not being able to resolve political issues inside company (VEL)	No action	Responding (make decision based on analysis)
	Not be able to select consulting firm with competency (VEL)	Selecting inappropriate consulting firm	Responding
	Having difficulty of setting expectations among stakeholders about the project (JIN, VEL)	No action (JIN)	Responding
Implementation	Having difficulty of reaching consensus between PM and Factory (JIN)	Planning, Education	Reconfiguration
	Employee not wanting to enter data into system (COV)	Education	Reconfiguration
	Employee not following the process in ERP system (COV)	Education	Reconfiguration
	Lack of PM with experience (VEL)	No action	Reconfiguration
	Lack of consultants with experience (VEL)	No action	Reconfiguration
	Directors in the factory not following PM (VEL)	No action	Reconfiguration
	Lack of agreement between headquarter and factory (VEL)	No action	Reconfiguration

we categorized components of dynamic capability into sensing, seizing, coordinating and reconfiguring. Based on this definition and focus, we limited interviewees to people who are in charge of smart factory projects. One

of researchers involved in this research took the role of facilitator and moderated discussions based on the questions prepared.

Three interviews were conducted in Korea (Table 1). The descriptions of the companies are provided in Appendix. The location of the interviews was selected by the participants. Usually the interview was performed in a meeting room at the company of the participants. With some participants, follow-up was conducted through e-mail to request clarifications and to offer participants the opportunity to provide feedback. Interviews were transcribed in Korean and translated into English.

Table 1. Overview of company and interviewees

Location	Group	Company	Position
Korea	1	COV	Strategy/IS/Smart Factory Manager
	2	JIN	Smart Factory Manager
	3	VEL	Business manager

Interviews were guided by a facilitator with open-ended questions for approximately one hour each. According to the interview protocol, the interviews were processed from explaining the research objectives and interview objectives to the interviewees. Even though the objective of the interview was to identify the dynamic capability of manufacturing firms with smart factory projects, we lead the interview to talk about challenges and issues raised at each phase (i.e. pre-implementation, implementation and post implementation phases) of a smart factory project life cycle for structuring the discussion. Then, we tried to investigate the firm's capability needed to manage those specific problems of a smart factory project. Therefore, the main topics discussed during the interview were as follows:

- Distinctive activities and issues raised at each phase of the smart factory project life cycle
- Action required to manage the activities and issues

Data analysis was performed using the constant comparative method of grounded theory [Glaser et al., 1999]. Furthermore, research findings were reviewed by interviewees to confirm. Data analysis is presented in the following section.

4. Data Analysis & Research Findings

Table 2. Coding Categories

Using constant comparative method, data analysis went through several overlapping phases of reading the collected data, discovering repeated ideas and concepts, coding the ideas and concepts and modifying the names of

the codes to better represent conceptual ideas. The coding categories can be modified to generate concepts [Glaser et al., 1999; Holliday, 2007; Pettigrew, 1990]. These categories are basis for new theory.

First, the interviews were put in writing. Basic units of text [words, phrases or sentences] were extracted from the transcript; and categorized them into four codes -- 'phase', 'challenges/issues', 'actions taken' and 'dynamic capability (i.e. sensing/processing, responding and reconfiguration)' required to resolve the challenges (Table 2). The initial codes for dynamic capability required – sensing/processing, responding and reconfiguration were derived from a review of the literature. In order to reach desirable between coder reliability, the following process was employed: coding individually, checking the agreement among codes, and a discussion on differences about the coding scheme to resolve the differences. Table 2 shows coding categories used in the analysis.

In the second column of table 2, the identified challenges of the smart factory projects are presented. This study found that firms overcome those challenges based on dynamic capabilities (shown in the last column of table 2).

JIN and COV do not seem to have problems in sensing and responding capabilities. Both companies are vendors of well-known global firms. Their relationships with the global firms allow them to sense changes occurring in current business environment. VEL lacked responding capability and made mistakes in selecting the consulting firm due to firm's internal political issues.

Due to political issues, the consulting firm with the lack of experience was selected. The lack of competency of both PM and consultant are major causes of the failure (Interview with VEL)

Two of three firms noted that the most challenging task is aligning Project Manager (PM) and manufacturing departments during the reconfiguration process.

Building consensus as well as division of responsibility between PM and manufacturing department were challenging. Therefore, it is recommended for the firms with plan for smart factory: to perform planning, design, and feasibility study with the highest priority. In this way, probable problems can be identified in advance to prevent extra costs and to complete the project on time [Extra cost and delay actually occurred]; and the consensus for the project objective is built between PM and manufacturing departments. (Interview with JIN)

Although top management in headquarter has strong commitment in smart factory project, a lack of PM's leadership hinders obtaining cooperation from manufacturing division in foreign subsidiary. This caused constant complain from both director and production manager of the foreign subsidiary on standardization issues. (Interview with VEL)

All three firms expressed the importance of change management including employee education for the process change.

Lack of understanding of the employees, engineers and management about new system and new process made the test period longer. (Interview with JIN)

Resistance from the employees are the most difficult problem to deal with. At first, the employees did not want to enter data into system. The employees did not want to follow the process implemented in the ERP system. The education for the employees is done outside and inside of the company. (Interview with COV)

Educating the use MES and ERP systems to the employees in foreign subsidiary was difficult due to communication problems. (Interview with VEL)

This study shows that the success of smart factory project is dependent on firm's dynamic capability, especially reconfiguring capability. The firms having less difficulty of aligning human resources and processes according to changes required by smart factory projects had succeeded smart factory projects. This is congruent with the study of Zahra et al. [2006], which asserts that the firms with higher dynamic capability has less difficulty of reconfiguring resources and routines.

5. Discussions and Conclusions

The results of this study indicate that the firms with higher dynamic capability made the process of organizational changes such as smart factory easier. Through alignment [i.e. resource reconfiguration] such as employee education, the firms with higher dynamic capability are more likely to implement the smart factory successfully. This supports the assertion of Doz, and Kosonen [2008]: high resource fluidity representing business process, resource allocation, human resource management and incentives that make business transformation faster and easier. As indicated in the interview results, the resistance from employees and management could be managed not only by education but also by goal sharing. The alignment such

as goal sharing and the consensus building requires the executive level commitment, which indicates importance of the governance of IT for smart factory success.

What this means that smart factory is enterprise-wide innovation, requiring organizational level efforts and governance attention. Difficiency of these efforts hinders adoption and progress of the smart factory. When firms' effort and government policy are short sighted and neglect complexity of enterprise-wide innovation, smart factory diffusion is slower. Smart factory is not a isolated project within a factory floor but a project being dependent on dynamic capability of a firm.

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Appendix: Company Description

Cov (Smart factory level 3)

Cov is a manufacturing/research service company for automotive parts. It's excellency in standardization is recognized by the Ministry of SMEs and Startups. Smart Factory was imitated to meet the quality requirement by foreign buyers. At that time, Cov also needed to reduce unit cost and improve productivity. They completed 1st phase (MES, ERP and PLM) and 2nd phase of the smart factory (SPC-Statistical Process Control, QMS – quality management system and CMS-Cyber Manufacturing). During 2020, they plan to implement MIS which is 3rd phase.

According to the interviewees who is a manager of planning/ smart factory/ IT, MES² which improves visibility from raw material to products, is the most important for the smart factory initiative. Only after data gathering and analyses over the manufacturing process, prediction and prevention are possible.

2 MES records and tracks the process of transformation of raw material to finished products. MES can identify and track error occurred during the process. Using the MES datam firms can analyze the cause of the error and improve the quality of the process and products. MES permits manufacturing optimization to maximize quality and productivity.

After smart factory, Cov cut employees by half and received order from BMW [2020], Hyundai [2019], and Volkswagen. [2014].

Jin (Smart factory level 4)

Founded in 1978, Jin is a leading manufacturer in car industry and has been key supplier to car makers in world-wide. Jin is also the first vendor of Hyundai Automobile. It adopted smart factory via government initiative called Project to Build Demonstration Factories with support from the Ministry of SMEs and Startups in 2017. The project intended to build a role model of the smart factory. By executing the project, Jin has achieved quality and productivity improvement through factory automation. Smart factory adoption replaces dangerous task by robots, thus results in reducing industrial hazard and relocating

employees to other tasks. Smart factory also allows the firm to monitor of before process and in process products; to identify malfunction in temperature and time; and thus to ensure quality. The results are remarkable with 20.5% increase in productivity and 50% increase in defect rate [Lee, 2019].

Velo

Clothing manufacturer for motorcycle. Velo implemented MES and ERP for inventory, HR and facility management as well as for manufacturing efficiency. Headquarter is in Seoul. Factory is in China and Vietnam. They overrun budget by 40%. They planned to complete the project within 10 months, from May, 2018 to March, 2019. They could not finish the project and finally suspend the project in Feb, 2020.

Analysis of Indonesia's Digital Industry and the Case of Gojek

Namjae Cho^a, and January Anindya Fitri^b

*a Professor, School of Business, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +8210-8704-1058, E-mail: njcho@hanyang.ac.kr*

*^b Master Research Scholar, School of International Studies, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +8210-4431-9306 E-mail: januaryanindyafitri@gmail.com*

Abstract

Indonesia's industrial application of digital technology is growing fast, especially in the application of mobile technology. About 1,700 digital startups are sprouting. PT Aplikasi Karya Anak Bangsa is one of those digital startups founded in 2010. This company is widely known, especially in Southeast Asia, for its products and services called 'Gojek' which was launched initially in 2015. Gojek began as a ride-hailing mobile-based application that later evolved into a Super App providing more than 20 different services in one single mobile application. After becoming Indonesian first unicorn company in 2016, Gojek now has become the first decacorn company in Indonesia, worth more than USD 10 billion since 2019. This paper aims to analyze the technology industry in Indonesia and analyzes Gojek's background and history, its competitive status, and critical success factors. As a conclusion, we provide some advices for future development of Gojek in Indonesia and other countries in Southeast Asia's market. The advices include rebranding its overseas presence and the use of consistent brand identity across countries.

Keywords

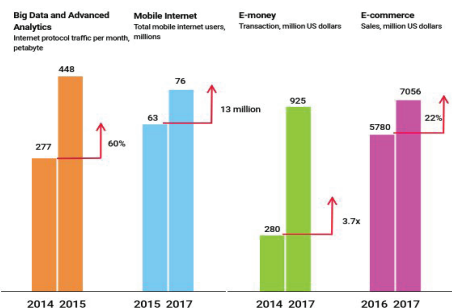
Mobile application, ride-hailing service app, Indonesia, e-commerce, case analysis

Background of the Technology Industry in Indonesia

According to a data published by the International Monetary Fund in 2018, Indonesia is expected to become Southeast Asia's largest digital economy, with 130 million active social media users and world's 3rd largest youth population. As following graph shows, Indonesia's digital world, ranging from the increased use of big data and mobile internet to the growth of digital financial services (e-money) and e-commerce, has grown significantly in recent years.¹ Thanks to the growing young population of Indonesia, the adaption of these emerging technologies is very rapid and it created a large enough customer base for Indonesia's digital economy. In line with this rapid digitalization in economy, as of 2018, Indonesia has more than 1,700 digital startups, the largest in Southeast Asia, engaging in various sectors, ranging from e-commerce, marketplace to online education.²

Indonesia's digital dynamism

Digital transactions are growing in Indonesia and have become more wide-spread, particularly with lower-income populations.



Source: Statista, CEIC Data Co. Ltd., and McKinsey (2016).
Note: Petabyte= 1 million gigabytes



Image 1. IMF: Indonesia's Digital Dynamism

By 2019, Indonesia has produced 4 unicorn companies: Tokopedia, an Indonesian technology startup company specializing in e-commerce; Traveloka, a leading Southeast Asia online platform that provides a wide

range of travel; Bukalapak, an online marketplace where local users can buy from and sell to each other; and OVO, digital platform for simple payment and financial services.³ Furthermore, early that year, Gojek, an on-demand multi-service platform and digital payment technology startup was announced as the first decacorn company from Indonesia (Alpha JWC Ventures, 2020). The rapid development in the information technology sector, combined with drivers like mass consumption of products, urbanization, a surge in mobile usage, and a tech-hungry young population, makes a positive impact on the economic growth in Indonesia.⁴ Current projections show that Indonesia's economy could gain \$2.8 trillion by 2040 through technology adoption.⁵

1. Michael Porter's Diamond Model of National Advantage

1.1 Firm Strategy, Structure, and Rivalry

1.1.1 Services expansion and rebranding

In 2010, Gojek's began its journey as a motorcycle ride-hailing call center in Indonesia. In 2015, the homegrown app was launched with only three services: Go-Ride (motorcycle ride-hailing), Go-Send (package delivery), and Go-Mart (grocery delivery).⁶ In a short time, Gojek came up with its expansion strategy. They expanded their services to wider sectors, including but not limited to food and finance sector. As the result, in few years, Gojek's app has successfully evolved into a Super App, a multi-services platform providing more than 20 services today.⁷

As Gojek brand grows and adapts to its market, in July 2019, Gojek decided to rebrand itself. Gojek changed their logo from 'motorcycle' – which describes the motorcycle ride-hailing service they are providing – into a new logo named 'Solv' that is unique enough to stand out from the competition, memorable enough for anyone to redraw from memory, and still flexible enough to work at any size, anywhere.⁸ "Just like Gojek, Solv evoked different emotions in everyone who saw it, a logo that lets you decide the meaning: Some saw a power button in it, identifying with Gojek's mission — to empower people to live a hassle free life. Some saw a search icon in it — Search for anything with Gojek. Some saw a map pin — we're there for you no matter where you are. For some, it was a top down view of a Gojek driver — a tribute to our heroes who help get things done," (Raja, 2019). With its new logo, Gojek promises to solve everyday problems and affect positive social impact with continuous technological innovations just as what their new logo means.



Image 2. Gojek Previous (left) and New Logo (right)

1.1.2 Intense competition with similar service provider: Grab & Uber

Gojek started its business in Indonesia, where the Indonesian market has been entered by Grab from Singapore and Uber from the US, online transportation companies with the same service.⁹ Grab and Uber officially entered Indonesian market in 2014, while Gojek only joined the business in 2015. Similar with services available in their home country, Grab and Uber started their business in Indonesia by providing a car sharing service or online taxi service, called Grab-car and UberX, UberPool, or UberBlack. Then in 2015, Grab and Uber started their motorcycle ride-hailing service, called Grab-ride and Uber-motor. However, Uber couldn't survive for a long time in Southeast Asia's market. In 2018, Uber has announced that it has sold its Southeast Asia-based business to rival Grab and in exchange Uber got a 27.5 percent stake in Singapore-based Grab while Uber CEO Dara Khosrowshahi joined Grab's board.¹⁰

The acquisition of Uber by Grab, puts Grab in a total control of the ride-sharing market in Southeast Asia. Surely, the merger between Uber and Grab in Southeast Asia market pressured Go-Jek, that has not yet expanded to Southeast Asia back then. Until today, Grab is the main competitor of Gojek in Southeast Asia market and its revenue in Indonesia more than doubled on the year in 2018 since its merger with Uber.¹¹ Thanks to this fierce competition, Gojek able to innovate and grow its business even bigger. Only a year after its official launch in Indonesian market in 2015, Gojek became the first Indonesian Unicorn company. Later in 2019, Gojek became the first Indonesian Decacorn company, worth over USD 10 billion today and second in Southeast Asia following Grab, which is valued at USD 14 billion.¹²

1.2 Factor Conditions

1.2.1 Indonesia demographic bonus

Demographic bonus is a situation when the number of productive populations, aged 15-64 years, in a region larger than the number of non-productive people, aged 0-14 years and above 65 years. According to a data from the Indonesian Statistic Agency, Indonesia will get a demographic bonus in 2035, with more than 65 percent of working age populations.¹³ There are many things

that should be prepared by Indonesian government. Specifically, the government should enhance the education quality, the readiness of its huge working age population to join the job market, and the employment opportunities in order to handle this demographic bonus challenge. This is where Gojek plays its role to help the government in handling this challenge by providing more job opportunities with its technology and reduce unemployment.

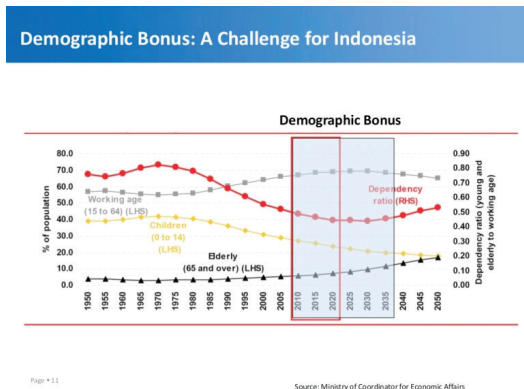


Image 3. Indonesia Demographic Bonus Projection

1.2.2 Huge number of motorcycles in use in Indonesia

Based on data from the Central Statistics Agency (BPS), as of 2018, the number of motorcycles in Indonesia reached 137.7 million units.¹⁴ Meanwhile, AISI (Association of Indonesia Motorcycle Industry) data records that in 2019 there were 6.05 million units of motorcycles sold to consumers.¹⁵ This means that in total, there are currently approximately 143.75 million motorbikes circulating in Indonesia by 2019. This is an advantage for Gojek which mainly operates its businesses on motorcycle-based. So, Gojek didn't have to provide their driver partners with a motorcycle as most of them already have their own motorcycles. However, by partnerships with leasing companies, Gojek is providing an affordable new motorcycle lease as a form of welfare program for their driver partners.

1.3 Demand Conditions

1.3.1 Indonesia's huge market

Approximately, Indonesia has 280 million population, 150 million internet users with average 8.6 hours per day spent online, and 58 percent unbanked population.¹⁶ Google, Temasek, and Bain & Company wrote a report titled 'Swipe up and to the right: Southeast Asia's \$100 billion internet economy', Describes Indonesia as the 'king' in the ride-hailing market or application-based transport services, with the industry hitting USD 6 billion

in 2019. According to the report, the ride-hailing market in Indonesia will hit USD 18 billion by 2025 and Indonesia will be the largest contributor to the ride-hailing industry until 2025, when the overall value of the ride-hailing market in ASEAN will be USD 40 billion.¹⁷

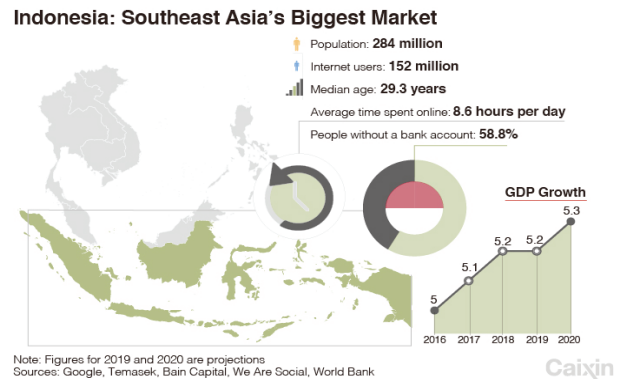


Image 4. Indonesia Market Size

1.3.2 Underdeveloped public transportation system

The infrastructure development of the road network in Indonesia has not been improving steadily for many years, and some cities have insufficient maintenance of the road network. In certain ways, the country's public transport infrastructure is also under-standard with no significant development for years.¹⁸ Most of population who lived in the metropolitan area – Jakarta and surrounding areas, or Jabodetabek – use public transportation such as bus and train to commute daily. However, not all area is covered by the public transportation. Despite its cheap fare, many areas are not accessible by public transportation. That is one of the reasons why most people prefer to ride their own vehicle, car or motorcycle, rather than using the public transportation, to get a better access everywhere. The presence of an online motorcycle ride-hailing service is not only helping consumers with access to high mobility, but also with efficiency in traveling time.

1.4 Related and supporting industries

1.4.1 Motorcycle industry

The key reasons why Indonesian people chose motorcycles as their chosen form of transport are the ease of ownership and economical operation of the mode. Motorcycles are affordable and easy to buy through a simple and fast credit or leasing process. On top of that, it is not so difficult to operate it and the maintenance expense for motorcycles are also reasonable for many people from various income groups.¹⁹ Since Gojek, Grab, and Uber penetrated online motorcycles ride-hailing market in Indonesia, we can see stable sales of motorcycles in Indonesia. Head of

Association of Indonesia Motorcycle Industry said that the growth of the motorcycle industry is very important in providing employment, where this sector is able to absorb a workforce of up to two million people. In order to produce motorbikes that are environmentally friendly, energy efficient, and safe and comfortable to ride that fit the needs of the global market, the Indonesian Ministry of Industry encourages the domestic motorcycle industry to continue to seek new breakthroughs in utilizing efficient engine technology and low exhaust emissions, as well as emphasizing the importance of optimizing domestic research and development (R&D) activities.²⁰

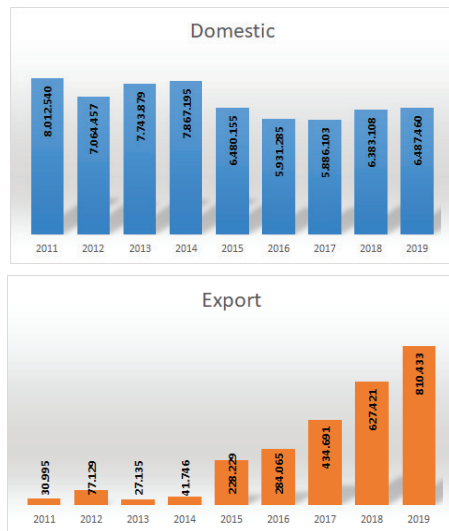


Image 5. Indonesia Motorcycles Distribution 2011-2019:

Domestic & Export

Association of Indonesia Motorcycle Industry

1.4.2 MSMEs

MSMEs or Micro, small and medium-sized enterprises are the economic drivers of Indonesia. Wholesale and retail trade, manufacturing, accommodation, and food service are dominating sectors of the MSMEs in Indonesia.²¹ To facilitate MSMEs to compete in broader markets, in November 2017, a program called “MSMEs Go Online” was introduced by the Ministry of Cooperatives and SME in collaboration with the Ministry of Communications and Informatics. By 2020, the government aims to transform 8 million MSMEs into digital-savvy MSMEs by encouraging them in joining online market platforms through this initiative.²² McKinsey & Company, a multinational management consultancy forecasts that by 2030, the MSMEs of Indonesia will be able to contribute up to USD 140 billion to Indonesia's gross domestic product (GDP) by adopting digital technology.²³

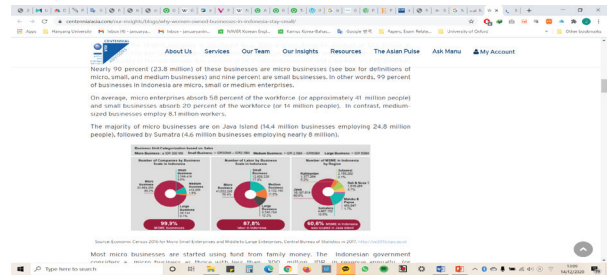


Image 6. Economic Census 2016 for MSMEs to Large Enterprises

Central Bureau of Statistics in 2017

1.5 Government

1.5.1 Indonesian government support

“Attempts to regulate and even outlaw app-based transport services have presented a serious challenge to Uber and Grab, and to a lesser extent Go-Jek. The debate over regulation has focused on the failure of app-based transport services to comply with conditions associated with public transport licensing,” (Ford & Honan, 2017). Transportation fare for public transportation is determined by the service in accordance with the price set by the Ministry of Transportation. However, this law does not cover mobile-based taxis, which led to unfair competition between conventional and online-based taxis back then in 2014-2015 when Grab, Uber, and Gojek penetrated Indonesian market. The existing or conventional transport providers respond to government regulation that online application-based transport companies’ ability to avoid the normal costs of doing business is an unfair advantage (Ford & Honan, 2017). Several other factors such as Grab and Uber not having any local offices and did not pay any Indonesian taxes despite its status as foreign companies were also problems that sparked the controversies. Controversies emerged and protests were held several times by conventional car taxi and motorbikes taxi against the online application-based ones from 2014 to 2015.

“In 2015, the Ministry of transportation issued memorandum UM.3012/1/21/Phb/2015 that prohibits the operation of online-based ride-hailing taxis. However, in 2016, Indonesian President issued a pronouncement to issue another policy through Transportation Ministerial Decree No. 32 of 2016 to facilitate online-based taxis. Thus, on October 1, 2016, online-based taxis are thereby legalized (only for 4-wheeled vehicles, not motorcycles),” (Melawani et al, 2020). Finally, in March 2019, Indonesia's Transportation Ministry finally released a regulation on the use of online motorcycle taxis. “The newly released regulation has provisions on standard fares, customer

safety and the nature of partnership between driver-partners and online ride-hailing companies. It also stipulates that standard motorcycle taxi fares should consider operational costs, including the cost of running ride-hailing apps,” (Yasmin, 2019).

1.6 Chance

1.6.1 Ongoing Indonesia’s rapid infrastructure development

“Based on Presidential Regulation no. 58 of 2017 on amendment to Presidential Regulation no. 3 of 2016 on Acceleration of National Strategic Projects Implementation, it was decided the amount of National Strategic Projects (PSN) is 245 PSN plus 2 programs, electricity and airplane industry,” (Committee for Acceleration of Priority Infrastructure Delivery (KPPIP), n.d.). Among 245 projects, following are few projects that could be a chance for bigger growth of ride-hailing industry by integrating their services to the existing and newly developed infrastructures in the future:

- Toll Road Infrastructure Development
- National Road Infrastructure Development /National Strategic Non-Toll
- Infrastructure Project for Inter-City Railway
- Infrastructure Project for Mass Rapid Transit Development
- Airport Revitalization Project
- Construction Projects of New Airport
- Other Strategic Airport Projects



Image 7. Indonesia’s National Strategic Projects

2. Background and History of Gojek

3.1 History and Products

What is Gojek? Gojek is Southeast Asia’s leading on-demand, multi-service tech platform providing access to a wide range of services including transport, payments, food delivery, logistics, and many more.¹ Gojek name comes from *Ojek*, the term Indonesian people use for calling motorbike taxis that are easily found in many areas in Indonesia. Gojek company, PT. Aplikasi Karya

Anak Bangsa, was founded as a motorcycle ride-hailing call center in 2010 by Nadiem Makarim (36 years-old), current Minister of Education and Culture of Indonesia. Nadiem Makarim received his BA in International Relations at Brown University in the United States and earned his MBA (Master of Business Administration) from Harvard Business School. Before he builds Gojek, he was a Management Consultant at McKinsey & Company for 3 years. Also, he was also a Co-founder and Managing Editor at Zalora Indonesia, a fashion e-commerce company. Then, he worked at Kartuku, Indonesian fintech startup, as a Chief Innovation Officer.²⁴

“During these years, Gojek only has a small office with 6 members, 10 telephones, 4 call center agents, and 20 drivers,” (Benjamin et al, 2020). The motorcycle ride-hailing service was provided through a conservative way back then. First, the customer who needs a ride should call Gojek’s call center by phone, then Gojek’s staff will look through their driver’s excel sheet data and contact the driver nearby customer’s location. Realizing the ineffective and wasting time conventional way of connecting their drivers and customers, Gojek began the development of its application platform in 2011 and officially launched the app in 2015 with only three main services: Go-Ride, Go-Send, and Go-mart. Gojek successfully made a transition from a phone-based service to the online-based service. Within just a year, the app had been installed 10 million times and driver numbers had reportedly risen to 200,000 (Ford and Honnan, 2017). A year after its initial launch, Gojek had developed few other services, including but not limited to Go-Car, Go-Food, Go-Clean, Go-Tix, and GoPay. Now, through just one platform, Gojek’s users can access over 20 services ranging from transportation and logistics; food, medicine, grocery delivery; cleaning and repair services; news and entertainments; business; to digital payment and financial services.

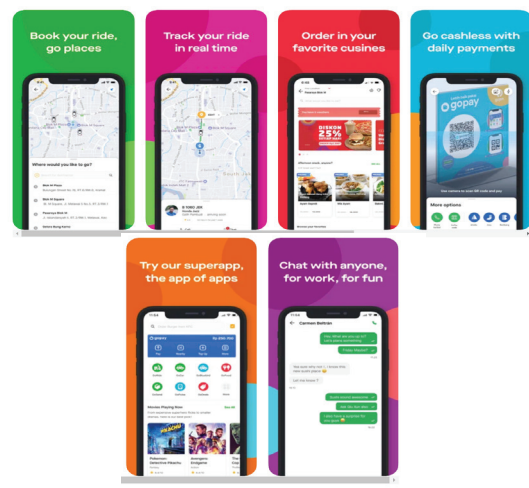


Image 8. Gojek’s App Screenshots on Apple App Store

3.2 Financing & Business Strategy

“On August 4, 2016, the Gojek Company officially became a Unicorn Company after gaining funding of US \$ 550 million. This funding is obtained from investors such as DST Global, NSI Ventures, and Sequoia Capital, led by KKR & Co. and Warburg Pincus and other January - February 202 existing investors and Formation Groups, Northstar Group, and Rakuten, Capital Group, Farallon Capital Management. In 2017, Gojek announced its acquisition with three technology financial companies, Mapan, Kartuku and Midtrans, which aimed to support GoPay expansion. On May 4, 2017, Gojek received additional funding from Tencent Holding and JDcom with funding worth \$ 1.2 billion (Zaenudin, 2017)” (Benjamin, 2020). In June 2019, Gojek announced that Facebook and PayPal have joined Google, Tencent and others as investors in its current fundraise. This new investment will support Gojek’s mission to boost Southeast Asia’s digital economy, with a focus on supporting payments and financial services in the region.²⁵ Also, a month later, in July 2019, Gojek announced a joint investment from Mitsubishi Motors Corporation, Mitsubishi Corporation, and investment from Mitsubishi UFJ Lease & Finance, as part of its Series F funding round.²⁶ In 2020, Gojek has received a \$150 million investment from Indonesia’s Telkomsel.²⁷

According to a research done by Benjamin et al in 2020, “The Gojek company implemented the Ansoff Matrix business strategy, using the Ansoff Matrix strategy to provide an opportunity for Gojek to expand into the Southeast Asia region. Ansoff Matrix is an important part of strategic marketing planning and is used to see opportunities with the development of new products and services. Based on the Ansoff Matrix theories, Gojek has applied a market penetration strategy that is an existing market and products that already exist in the market. Gojek founded its company in Indonesia, where the Indonesian market has been entered by Grab and Uber which is an online transportation company with the same service.”. Furthermore, Gojek partners with motorcycle drivers and merchants using a profit-sharing system with the provisions of 20:80, which means 20% of the revenue for the Gojek and 80% for Gojek’s driver-partners or merchant-partners.

3.3 Social Economy Impact

Today, Gojek has successfully transformed into SUPER-APP began as a ride-hailing service, providing more than

20 services, two million drivers, 400,000 merchants, 1.5 million agents, and 600,000 talent or service providers. “Research by the Demographic Institute of the Faculty of Economics & Business, University of Indonesia, in 2018, involving 6,732 respondents, conducted across 9 cities in Indonesia stated that Gojek is delivering economic impact for Indonesia by contributed around IDR 44.2 trillion (USD 3 billion) to the Indonesian economy as of end 2018. Gojek also gave positive impact that helps the members in Gojek’s ecosystem, such as driver-partners and merchant. After joining Gojek, the quality of life of Gojek’s driver-partners’ have increased and 100% of them believe that they can provide better well-being for their family. Most also claim they can now send their children to school, especially with the fair incentives and policies that Gojek provides. Furthermore, Gojek’s ecosystem supports the growth of MSMEs in Indonesia. 93% of MSME partners experience an increase in transaction volume and 55% of them experience an increase in earnings,” (Gojek, 2020).

3.4 Achievements

In 2016, Gojek became the first Indonesian Unicorn company. In 2017, Gojek was ranked 17th in Fortune’s 50 Companies that Changed the World, as the only company from Southeast Asia. In 2018, Gojek announced its international expansion into four new markets, Vietnam, Thailand, Singapore, and Philippines, with USD 500 million investment.²⁸ In 2019, Gojek became the first Indonesian Decacorn company in 2019, valued more than USD 10 billion. Also, in the same year, Gojek was included again in Fortune’s 50 Companies that Changed the World, ranked 11th.

3. Competitive Status of Gojek

4.1 Strengths

1.1.1 Mobile-based application: Easy-access and transparent fare or service fee check before book the service

Gojek is operating their services through mobile-based application. Gojek mainly has three different apps, the main app for its customers called Gojek, the other one for their driver-partners called GoPartner, and the other one for their merchant-partners called GoBiz. Gojek’s mobile applications are very easy to use and compatible on both android and iOS devices. On Google Play Store, we can see that android version of Gojek main app has already been downloaded for more than 50 million times. However, according to Gojek’s Tech website, Gojek claimed that their app already has been downloaded

more than 125 million times in Indonesia, almost half of Indonesian population.²⁹ Gojek's mobile applications provide a clear user interface (UI), as well as interactive user experience (UX). Through the app, customers can easily book the services they need and see the fare or the service fee transparently. Not only providing an easy booking, Gojek also providing an easy payment method, with cash or GoPay.

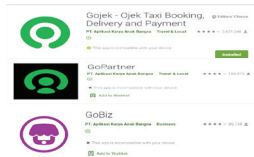


Image 9. Gojek Applications on Google Play Store

1.1.2 Innovative and diverse services, focusing on: transportation and logistics-based, food-delivery and shopping-based, entertainment-based, and payment-based Gojek never stop innovating their service since their first launch in 2015. Gojek evolves from a motorcycle-based service offered only three services, Go-Ride, Go-Send, and Go-Mart into a super app offering more than 20 services that are solving everyday challenges with one mobile application, named Gojek. In more details, Newest Gojek's services as in 2020 could be distinguished into four different sectors transportation and logistics-based, food-delivery and shopping-based, entertainment-based, and payment-based.³⁰

In transportation and logistics-based we can find Go-Ride, Go-Car, Go-BlueBird (partnership with existing local taxi company), Go-Box, and Go-Send. Then, in food delivery and shopping-based, we can find Go-Food, Go-Mart, Go-Shop, and Go-Med. In both transportation and logistics-based, and food-delivery and shopping-based services that Gojek is providing, Customer can book services they need and the driver-partners will come to pick the customers up or get something delivered to the customers. In entertainment-based, we can find Go-Tix, to book any movie or concert tickets; Go-Play, an on-demand video content platform; and, Go-News. While, in payment-based, we can find GoPay, Gojek's e-wallet for all users; Go-Pulsa, to buy internet data package and phone call credits; Go-Nearby, where customers can find any promotions available nearby their locations; Go-Investasi, to make some investments, buy stocks, and more; Go-Bills, to pay electricity or phone bills, etc.; Go-Give, to give donations; Go-Sure, Gojek's health and life insurance services in partnerships with existing insurance companies.

Before these current updates, Gojek used to have few services in daily needs-based where we can find Go-Clean, Go-Fix, Go-Laundry, Go-Glam, Go-Massage, Go-Daily, Go-Auto, and Go-Pertamina. Unlike the transportation-based ones, Gojek's partners will go to your house to do the services booked by the customers. Gojek also had Go-Points, which are the loyalty program for both Gojek's customers and partners, and Go-Deals, to find promotions ongoing on various e-commerce or online shop platforms. Unfortunately, Gojek shutdown these services in the end of 2019 (The Jakarta Post, 2019).

1.1.3 High brand recognition: Made in Indonesia

Compared to its competitor, Grab, Gojek has higher brand recognition because it is made in Indonesia by Indonesian young people, just as what their company name literally means (PT. Aplikasi Karya Anak Bangsa). On top of that, Gojek's previous motorcycle logo described their services well, however their new logo 'Solv' describes it even much better and made it easily recognized in the field. According to a journal written by Wahid and Puspita (2017) regarding Gojek's brand awareness, they concluded that Gojek did several efforts to improve their brand awareness including but not limited to publications, events, news, community involvements, inform or image, lobbying and negotiations, and social responsibility.³¹

As the result, "Muhammad Zudhy Irawan, a lecturer at Gadjah Mada University's (UGM) Engineering School as well as a researcher at the UGM Transportation and Logistics Study Center, shows in a research dated of February 2020 that most users of public transportation typically use two ride-hailing applications at the same time. However, Gojek has two-and-a-half times as many loyal users as there are users for other ride-hailing apps. This is equivalent to a market share of 45 percent. The success relies on the high availability of Gojek's drivers, the excellent service they give users, as well as the user-friendly application, along with its ample digital safety and security," (Asean Travel, 2020). Also, "a survey by market researcher ecommerceIQ in February 2018 found that 56% of Indonesians said they used Gojek the most, followed by 33% for Grab and 8% for Uber," (Nikkei Asia, 2019)

1.1 Weaknesses

1.1.1 Uneven adaption of smartphone technology

According to a research conducted by the Demographic Institute of the Faculty of Economics & Business, University of Indonesia, in 2018, most of Gojek's driver-

partners age are ranging from 20s to 50s, 77 percent of driver-partners are 20-39 years old, and 85 percent of them are high school graduates.³² Not all driver-partners are fully adapted to the newest smartphone technology. Most of them are still not very familiar with the rapid development of technology nowadays. This is becoming one of Gojek's challenge. What Gojek need to do to overcome this uneven adaption of smartphone technology of their driver-partners is to make an application that is easy to access by all range of ages and educational backgrounds of their driver-partners. This challenge might be specifically addressed to Gojek's UI/UX design team. Gojek's design team must be able to present all GO-JEK's features or functions as simply as possible so that it can be easily understood even by first-time users of technology, as well as providing great experiences for their partners. As mentioned in Gojek's website, "Gojek's UI/UX team believes that a good product is a product that is not only able to provide functional benefits, but also provide an experience for the user," (GoHR, 2016)

1.1.2 High dependence on internet connection

Gojek is a mobile-based application, which means they rely heavily on a stable internet network. Gojek sometimes experienced some interferences in their network or a server failure. If so, their services would not be available for a few minutes, or even worse, for hours. This server breakdown or network problem is very inconvenient, because not only customers will not be able use the services, but driver-partners also will not be able to find any customers, which mostly lead to another problem, such as traffic problem or congested road full with Gojek's driver-partners and supposed customers that have no idea what to do, except to wait until Gojek fixed its problem.

1.2 Opportunities

1.2.1 Inefficient & not well integrated public transportation: Gojek provides easy-access to areas unserved by public transportation

As mentioned in the second part of this paper, Indonesia public transportation is not well developed and not well integrated. Compared to a map of metro lines in Seoul metropolitan area, Jabodetabek urban railway network map looks much less complicated even though it has already included commuter line, LRT, and MRT lines. That is why people is prefer to ride a motorbike to have a better access to certain areas and faster mobility. This point can also be considered as the opportunity for Gojek. Because

Gojek, more specifically Go-Ride offering a motorbikes ride-hailing service from and to anywhere around its service area. With Go-Ride, customers can access areas unserved by public transportation easily. Gojek also integrated with public bus stops and train stations, makes it more comfortable and faster for the customers to get a Go-Ride from there to their destinations, especially during the rush hour.



Image 10. Jabodetabek Urban Railway Network Map (left) VS Metro Lines in Seoul Metropolitan Area (right)

1.2.2 Development and innovation in fintech: GoPay

"The Government of Indonesia is encouraging citizens to reduce cash dependencies through the National Cashless Movement. According to data from the Bank of Indonesia in 2015, only 10% of people in Indonesia are using cashless payments," (Gojek, 2017). However, back then there was no player in digital payment in Indonesia. Gojek saw this as an opportunity and made a good move by initially entering this market to support the National Cashless Movement and increase the benefits of a digital society. Thus, Gojek launched a cashless payment platform on their app, GoPay, in April 2016. In the same year, OVO, another digital payment platform built by PT Visionet International, digital financial services subsidiary of the Lippo Group's, one of Indonesia's was launched. OVO got a license to operate as a fintech company throughout Indonesia on 25 September 2017³³, partner with Grab in 2018³⁴, and became the 5th Indonesian unicorn company in 2019.³⁴ Since then, few other digital payment platforms

were launched and started its business in Indonesia. Today, we can see at least 5 top e-wallet platforms in Indonesia based on the number of monthly active users between 2017-2019 were GoPay, OVO, DANA, LinkAja, and Jenius.³⁵ All of them are locally owned companies.

1.3 Threats

1.3.1 Intense competition with Grab: Similar services Grab is the only competitor of Gojek in Southeast Asia market. The competition between Gojek and Grab is very intense. Basically, both companies are providing similar services, on-demand services, ride-hailing, food delivery, payment service (Gojek via GoPay, and Grab via OVO), and many more. Therefore, they always compete to give the best fare rate, best promotions, and best services they could give to the customers. Even though Gojek has higher brand awareness and often preferred by customers, customers still would shift to Grab whenever they offer better promotions, for instance by giving out free discount voucher for ride-hailing or food delivery services. Also, there is one differentiator feature that Grab has but Gojek still does not have on their app. This feature is called 'GrabNow'. GrabNow is a way to ride GrabBike specifically built to minimize the waiting time of customers', so they can increase productivity.³⁶ "Passengers just need to tap on the 'connect' icon when they are in close proximity with GrabBike biker or use the 6-digit code available on the driver's phone and the Grab platform will do all the other work. Once connected, passengers have to confirm that they are with the right driver and they are set to go," (Grab, 2017). Gojek definitely need to develop a similar or even better feature than GrabNow to compete with Grab.

1.3.2 Different government regulations for online-based transportation in Southeast Asia's countries

Grab is officially operating in eight countries in Southeast Asia, Singapore, Indonesia, Malaysia, Philippines, Vietnam, Thailand, Cambodia, and Myanmar. Meanwhile, Gojek only has officially started its operations in four countries Indonesia, Singapore, Vietnam, and Thailand. Also, Gojek is in a process of penetrating Malaysia and Philippine's market. Gojek is definitely left far behind its competitor in terms of market expansion. This obstacle could be happened due to different government regulations for online-based transportation business in Southeast Asia's countries. Especially, for the two-wheeled vehicles. For instance, the Philippine's government demanded ride-hailing companies in the country must be at least 60 percent Filipino-owned.

4. Critical Success Factors of Gojek

5.1 Services diversification

Gojek's strategy to expand its services into broader sectors is one of critical success factors of Gojek. If Gojek just stuck with three services, Go-Ride, Go-Send, and Go-Mart, Gojek might have not as successful as today. Gojek listened to what their customers really needs and continuously made innovations to provide solutions to many daily life problems. With Gojek's ecosystem, Gojek driver-partners experiencing an increase in their income and spending, as well as their family well-being. Even though, there is one differentiator feature that Grab has on their mobile application as mentioned in the fourth part of this paper, according to Global Data (2019), Gojek is far superior to the variety of services they offer, compared to Grab. Aside of services that both Gojek and Grab are offering such as ride -hailing, food delivery and many more, Gojek also offers medicine deliver, movie/concert ticket booking system, home/auto repair, home cleaning, massage, beautician, laundry, and many other else that Grab doesn't offer.

Moving to a broader innovation, in September 2019, Gojek jumped into the content streaming business by launching Go-Play, a video on demand platform similar to Netflix where user can pay for a subscription to watch various video contents, such as dramas and movies in HD quality both offline and online. Users can access Go-Play from its mobile application or from its official website at www.goplay.co.id. At Go-Play launching ceremony, Kevin Aluwi, Co-Founder of Gojek, mentioned that, "GoPlay can create positive socio-economic impacts for the advancement of the creative industry ecosystem in Indonesia,".³⁷ Go-Play subscription fees are available at two options: IDR 45,000 for monthly access to all contents; and, IDR 29,000 for 2-weeks access. Go-Play also offers promotional packages of subscription that comes with various discount vouchers of other Gojek's services. Moreover, Go-Play also supports Indonesian indie movie makers by giving them opportunity to showing their indie movie on Go-Play, where users can watch and giving appreciation for the movie makers with certain amount of tip.³⁸ Other than Go-Play, Gojek also come up with few other innovations as mentioned in the fourth chapter of this paper.

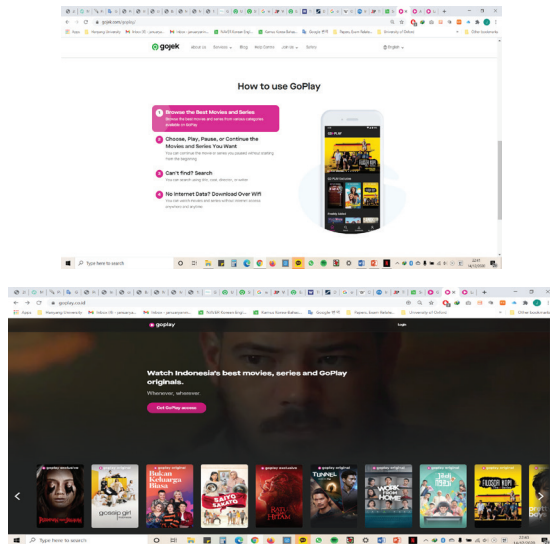


Image 11. Go-Play Mobile Application and Official Website

5.2 Focus on food & finance market, in addition to ride-hailing market

Gojek's decision to enter the food market with Go-Food in 2015, and enter the financial technology market with GoPay in 2016 is another critical success factor for Gojek's business expansion. "It's hard for startups relying solely on transportation services to survive unless they have ample cash to burn. Makarim understood this problem since Gojek found popularity in Indonesia, so he laid the groundwork for other on-demand services early on, giving his company multiple legs to stand on. As a comparison, it took Uber around four years to add new verticals, while Grab only began adding new business lines in 2018. Gojek's early diversification is paying off," (Florene and Wu, 2020). "According to a press release published in February 2019, Gojek pulled in USD 9 billion in gross transaction value (GTV); feeding into that amount, GoPay drew USD 6.3 billion, while Go-Food channeled USD 2 billion. Gojek's current co-CEO Kevin Aluwi said that the company will focus on these two lines of business, especially after the demand for shared rides slumped due to the COVID-19 pandemic," (Florene and Wu, 2020).

In an event held by IDN Times (2019), Chief Food Officer of Gojek, Catherine Hindra, said that Go-Food was inspired by one of their existing service, Go-Shop. Back in 2015, Gojek only had three services: Go-Ride, Go-Shop, and Go-Mart. A month after its release in 2015, 80 percent of demands on Go-Shop were 'food'. Gojek team saw these huge demands for food delivery in Go-Shop as an opportunity, and later in the same year they introduced their customers with a new feature on Gojek

mobile application, which was Go-Food. Go-Food is not only a platform to meet the customers' needs, but it also helps to empower Micro, Small and Medium Enterprises (MSMEs) to become Go-Food merchant partners. People who would like to partner with Go-Food don't have to own any restaurants, they can simply cook from their home and sell their foods through Go-Food platform after they registered online or offline at Gojek's office. It was started with 5,000 merchants, however as of 2020, Gojek has approximately 550,000 merchant-partners all over Indonesia. Moreover, 82 percent of Gojek's merchant-partners also experienced an increased in transaction volume after partnering with Gojek, and 85% of those partners experienced more than 5 percent increase in transaction volume.³⁹ Furthermore, Go-Food currently is dominating 75 percent of food delivery market share in Indonesia (Nielsen 2019 as cited in Florene and Wu 2020)

As for GoPay, Gojek's exceptional e-wallet service, it allows Gojek customers to use its on-demand services seamlessly, including but not limited to making faster purchases, tracking their spending easily, and transferring money in no time.⁴⁰ Also, according to user research, people prefer using GoPay on their Gojek application due to the variety of promotions, the removed hassle of fumbling for small change, and its pure ease of use.⁴¹ To use GoPay customer will have to load a certain amount of credit into their GoPay account, then they can use the credit to pay at supporting merchants by scanning a QR code from their mobile app. In 2019, Gojek released a new feature in its payment services, which is Gojek PayLater in partnership with Findaya, a fintech company. Gojek PayLater functions similar to credit card and each customer is given different credit limit. "With the latest investment from Facebook and PayPal, which resulted in an agreement to integrate PayPal into GoPay, the company now has access to the network's 25 million merchants worldwide," (Florene and Wu 2020).

5.3 Collaboration with Google Ecosystem

Finally, Gojek collaboration with Google is also one of critical success factor of Gojek. "Gojek runs the Google Cloud Platform which ensures that the system matches the right driver with the right request and helps Gojek find out the optimized route and the estimated arrival time of the driver. This system also helps Gojek in analyzing their data with 1 million drivers in 167 districts and cities and 2.5 million customers so that it will make it easier for customers to access and use the Gojek application,"

(Benjamin et al, 2020). Furthermore, Gojek can accurately forecasts changes in demand from customers due to changes in weather and prices, as well as analyzes the development of features to be introduced in the future, standardization and quality of service with this system, so that both driver-partners and customers can be satisfied with its services (Benjamin et al, 2020).

5. Conclusion and Future Perspectives

With Gojek's ability to innovates according to what their customers really need supported by advanced technology developments, skilled workforces, and synergy partnerships with its driver-partners and merchant-partners, Gojek has successfully expanded its services domestically and globally in Southeast Asia. Starting from a local motorbikes-taxi call center to a multinational company worth more than USD 10 billion. Everyone is expecting more growth and expansion of Gojek in the future, and here are few advices for Gojek related to its rebranding in overseas market, UI/UX updates, and Southeast Asia expansion.

6.1 Rebranding its overseas brand: Use one brand name for all countries

Gojek successfully penetrated Vietnam and Singapore's market in 2018, and Thailand's market in 2019. However, due to local regulations that demands Gojek to partners with local company to enter the market, Gojek in Thailand couldn't use 'Gojek', instead they used 'GET' as their brand name and yellow color for their brand color. Their color, logo, application design, and driver's attributes are different from the Indonesian one. This also happened in Vietnam, where Gojek used 'Go-Viet' with red color and also different logo. However, in Singapore, they use 'Gojek Singapore' for its official brand name, with same color and logo as Gojek Indonesia.



Image 12. GET and Go-Viet App Design

If Gojek would like to penetrate Southeast Asia market, Gojek should do exactly what Grab did to protect their brand identity, including name, logo, color, application

design, and more, so they would gain more brand awareness even in other countries. However, Gojek has recognized this problem and in 2020, Gojek comes up with a new plan to unify its Vietnam and Thai brands. Gojek will bring them under one technology platform with same UI and UX design to strengthen operations and brand image beyond its home market.⁴² In a newest news in August 2020, Gojek finally announced that its official Gojek mobile app is now accessible in Vietnam, as Gojek, no longer Go-Viet.⁴³ Following Vietnam, a month later, Gojek also launched Gojek app in Thailand in order to gain ground in the highly competitive market, specifically with Grab.⁴⁴



Image 13. Go-Viet and GET before Rebranding (upper)



Image 14. Go-Viet and GET after Rebranding (lower)

6.2 Be careful of too complicated UI/UX updates

Finally, since its first launch in 2015, Gojek app went through various updates to improve its UI/UX design, add some new features, and fixing bugs (flaw or glitch in the system). However, Gojek should be careful of adding not-so-important features into the apps, such as the feed feature that is available in newest version of Gojek app since October 2020. This feature is called 'GoPay Feed'. GoPay Feed feature is a feature where you can add other Gojek users as friends, make an interaction on the feed such as give like or comment on every GoPay balance transfer transaction's posts.⁴⁵ However, not all users seem to be happy with this new update from Gojek, because not all users want to share their transaction's posts with other users, even though it's their friends or families. Unfortunately, users have no other choice to keep the feature in their app because users are not given any other option and the feature cannot be removed once they updated to the newest version. But, Gojek gives an option to change the setting of the transaction feed's privacy to private, so other people won't be able to see it. In other

hand, this GoPay Feed feature update could also be seen as Gojek's move to broaden their business into the social media sector.

Lastly, we can find the main services Gojek is providing such Go-Ride, Go-Food, and Go-Pay in the home menu of Gojek's application. There we can also find other useful information related to ongoing promotions or updates for all services available in Gojek's app. However, apparently users need to scroll from the top to the bottom of the tab to find the information they are looking for, and it is very long and never ending. Imagine if a user is using an old smartphone, then it must be so heavy for that phone to process the large amounts of information in one page, and it might experience a lag when they scroll up or down the page. Gojek did put some upper bar where users can choose between keywords available there and see only information related to the keyword they choose. However, it is still not convenient enough. To allow users navigate better and give a better experience for all smartphone user, Gojek might need to divide the home tab into few sections or put floating icons or upper bar for each categories of their services. Furthermore, Gojek might also consider to enable the accordion element of user interface design, that allow users to expand and collapse sections of content, so users can navigate and find the information they are looking for more quickly and this will also enhance the look of the screen display, make it looks more comfortable and not so complicated.

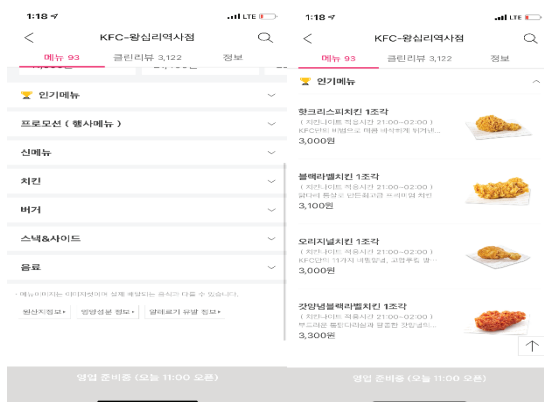


Image 15. Example for Accordion UI Element (the arrow symbol)

when collapsed (left) and when expanded (right)

Screenshots from Yogiyo, Korean food delivery app

6.3 Secure Expansion to More Southeast Asian Countries

As mentioned in the fourth part of this paper, currently Gojek's only competitor, Grab has successfully expanded its business to 8 countries in Southeast Asia, which are

Singapore, Indonesia, Malaysia, Philippines, Vietnam, Thailand, Myanmar, and Cambodia. While Gojek is only operating its business officially in Indonesia, Singapore, Vietnam, and Thailand. Gojek did make a new progress in their market expansion attempts to Philippines and Malaysia market as of 2019 after several rejections due to local regulation problem. Now, Philippine company Pace Crimson Ventures Corp. has acquired a 60% stake in Gojek's affiliate in the country, Velox Technology Philippines, which means it is now enough to meet the minimum local ownership requirement for transport companies.⁴⁶ As for Malaysia market, the Cabinet has agreed to give motorcycle ride-hailing services principal approval in the country. "Go-ride start operating based on a proof-of-concept basis to measure demand for the service over six months in selected areas, to allow the government and participating firms to gather data and evaluate demand for the service, while the government works on drafting legislation to govern bike-hailing," (Leen, 2019). Gojek is now allowed to start limited operations in the country starting January 2020.⁴⁶

After Gojek secured their position in Philippines and Malaysia, Gojek needs to set their foot to Cambodia and Myanmar, following Grab. This move is important to prevent Grab from dominating the market there. Instead of just focusing on the ride-hailing, Gojek might use another strategy such as entering the market with an introduction to its digital payment first, as GoPay is one of Gojek's strength that Grab doesn't have and this could be a winning point for Gojek.

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Exploring the effect of overload on the discontinuous intention of SNS: the moderating effect of gender

Yu Xiang Xia, Seong Wook Chae¹

Abstract

With the proliferation of smartphones and 5G networks, mobile social network (SNS) has become an indispensable part of People's Daily lives. However, with the use of SNS, fatigue and withdrawal behavior gradually emerged. Based on The Transactional Theory of Stress and Coping (TTSC), we explored the mechanism of SNS overload on users' discontinuous intention under the framework of "stressor-strain-outcome". And we also investigated the moderating effects of gender in this process. We hope that through our research, we can help SNS users to reduce unnecessary fatigue, and provide better suggestions for platform designers to adjust product design to improve user experience.

1. Introduction

With the popularization of smart mobile devices and high-speed mobile network, a large number of SNS APP migrate from PC to mobile terminals, such as mobile phone and Pad, which accelerates the spread and dissemination of mobile SNS. People spend a lot of time on SNS every day, they seem to be in constant contact with these SNS applications, for work, communicate or entertainment. However, after experiencing rapid growth and dissemination of SNS, it is now facing the risk of losing users, and users' flight from the SNS is becoming a trend.

Twitter had 70 million active users in the United States in the first quarter of 2017, but fell to 68 million in the second quarter, and its global active users are stagnant at 328 million (Trefis, 2017). The phenomenon that users escape from SNS also appears in China. The "2017 China SNS influence report" shows that, those who said SNS had a positive impact on their lives fell from 65% to 61%. Among the 20-30 age group, 31% said SNS made them feel empty and restless, 34% said they couldn't concentrate and 39% said they had turned off some features of SNS (Kanter, 2017).

All these evidences suggest that aspirers are increasingly tired of SNS and are scaling back their use. This trend of 'frequent-occasional-eventual abandonment' indicates that early adopters are beginning to suffer from social networks fatigue (SNF). The Limited Capacity Model (LCM) can be used to explain social networks fatigue. Lang (2000) suggests that people have a limited amount of mental resources to process information. Overload can cause social networks fatigue. Several studies have looked at the negative effects of SNS overload on users' psychological states, such as dissatisfaction, regret, and fatigue. However, there is disagreement about the type of overload. In addition, according to the Person-context interactive Theory, individual traits and the context interactively affect individual psychology and behavior (Magnusson & Stattin, 1996). Social cognitive theory also holds that gender determines different goal-orientation, and thus determines differences in male and female behavior. Different genders have different perceptions of technology, so their response to technological stress may also vary by gender. However, no studies have examined gender differences in the impact of overloading on discontinuous use. Therefore, we wanted to examine the influence of individual traits (gender) and various overload factors simultaneously in order to fully understand the influence of SNF on discontinuous intention. Our research aims to:

- (1) Discuss the impact of different types of overload on SNF and discontinuous use.
- (2) Investigate whether gender plays a moderating effect in this process.

Our research can help people better understand the phenomenon of social networks fatigue and escape, and will provide meaningful implications for users and SNS designers.

¹ Corresponding author

2. Theoretical background and Literature review

2.1 Previous studies on social networks fatigue and discontinuance intention

“Fatigue” first appeared in the medical field and was described as a subjective, unpleasant feeling (Piper et al., 1987, p. 19). In occupational studies, fatigue is cited as a response of vulnerable individuals to high demands or workload and inability to meet individual goals (Hardy, Shapiro, & Borrill, 1997). The experience of fatigue is a gradual process. The intensity of fatigue change from a mild feeling of tiredness to a more persistent experiences and a state of exhaustion (Lewis & Wessley, 1992) or fatigue.

Fatigue is also classified as acute or chronic based on the duration for which the experience persists. The former can be relieved by appropriate rest (Shen et al., 2006), while the latter is chronic, progressive, and cumulative, and cannot be relieved by rest (Shen et al., 2006; Tiesinga et al., 1999). Fatigue manifests itself in both physiological and psychological aspects. The former is defined clinically as a “loss of maximal force generating capacity during muscular activity” (Lewis & Haller, 1991, p. 99). The latter is described as a psychological fatigue experience related to stress, etc. (Potempa, Lopez, Reid, & Lawson, 1986; Shen, Barbera, & Shapiro, 2006). Fatigue will lead to individual withdrawal from the stress-causing environment (Walker, 1986). Ravindran, Yeow Kuan, and Hoe Lian (2014) defined social network fatigue (SNF) as a subjective, multi-dimensional individual feeling caused by the use and interaction of social network, including exhaustion, annoyance, anger, disappointment, lack of interest and enthusiasm.

As for the causes of SNF and the impact of SNF, there are three main streams: Bright, Kleiser, and Grau (2015) adopt Technology Acceptance Model (TAM) to study SNF, and construct a cognitive-attitude paradigm to explore the antecedent variables of social networks fatigue: SNS efficacy, SNS helpfulness, SNS confidence and SNS privacy concerns. Cramer, Song, and Drent (2016) believes that SNS is often used to show oneself in the most favorable way, such as presenting positive events and good feelings, etc. Therefore, SNF may be induced by negative social comparison. These studies focus on the causes of SNS fatigue, but ignore the process and results of psychological state evolution. The second perspective, based on the environmental psychology perspective, adopt

Stimulus-Organism-Response (SOR) as baseline model. SOR model points out that environmental factor stimulate people's internal state and drive their behavior. Luqman, Cao, Ali, Masood, and Yu (2017) discusses the excessive use of SNS (Excessive cognitive use, Excessive social use and Excessive hedonic use), which causes technostress and SNS exhaustion, and ultimately results in discontinuance intention of use. Cao and Sun (2018) explore the effect of overload on the discontinuous intention of SNS users, and propose three types of overload in the SNS context: information, communication, and social overloads. They are assumed to impact the internal psychological states (i.e., exhaustion and regret) of users, which in turn motivate them to quit. Thirdly, based on psychological health and pressure perspective, adopted the Stressor-Strain-Outcome (SSO) as their research framework. Lee, Son, and Kim (2016) employ the Transactional Theory of Stress and Coping (TTSC) as the benchmark theory, regards overload (i.e., stressors) as a core determinant of SNS fatigue (i.e., strain) and identifies three dimensions of overload (i.e. information overload, communication overload, and system feature overload). They also propose SNS characteristics as the antecedents of overload (i.e. information characteristics: information relevance & equivocality and system characteristics: system pace of change & complexity). Dhir, Yossatorn, Kaur, and Chen (2018) utilize the stressor-strain-outcome framework (SSO) examine whether psychosocial wellbeing measures, such as compulsive media use and fear of missing out, trigger fatigue and, furthermore, whether social networks fatigue results in anxiety and depression.

Overall, these studies defined the antecedent variables of SNF, including overloading, negative social comparisons and privacy concerns. We believe that overload is the most important cause of SNF. And based on these previous studies, we divide overload into four types: social overload, communication overload, information overload and system feature overload.

Previous studies ignore the interaction between individual traits and situations. According to Transactional theory of stress and coping (TTSC) (Lazarus & Folkman, 1984), when confronted with a stressor, individuals make assessments of potential threats, as well as their ability to change situations and manage negative emotional reactions. This process causes individuals to perceive a given situation in different ways and adopt different coping strategies. We think that gender plays a big role

in how well individuals cope. Previous studies have investigated the gender differences in the effects of environmental stress on psychological status and coping strategies. For example, Greer, Laseter, and Asiamah (2009) investigated how gender modulates negative emotions such as anxiety and obsessive-compulsive disorder among African American adults in response to racial pressure. Israel - Cohen, Kaplan, and Health (2016) investigated that male and female adopt different coping mechanisms to seek emotional support to relieve the stress of war trauma in Israel. However, there are few studies on gender differences in the effect of overloading on discontinuous use. Therefore, it is necessary to further study the influence of individual characteristics, such as gender, on SNF and discontinuance intention.

2.2 Transactional Theory of Stress and Coping

The Transactional Theory of Stress and Coping (TTSC) proposed by Lazarus holds that stress is a process by which an individual interacts with the environment. TTSC has been used to study the causal relationships between stress factors and outcomes in the context of organizational and occupational environments (Barley, Meyerson, & Grodal, 2011; Cooper et al., 2001; Kahn & Byosiore, 1992; Sparks, Faragher, & Cooper, 2001). Person-Environment Fit Theory (French & Caplan, 1972) is the underlying theory of TTSC (Edwards & Cooper, 1990). McGrath (1976) points out that stress arises from a situation where the demands presented by the environment exceed the capabilities and resources of the person for meeting it. Ragu-Nathan et al., (2008) believes that stress is the interaction between “a stimulating condition” and “the individual's response to it”. Individuals differ in how they evaluate and adapt to stress, leading to different responses. Stressors are demands, conditions, events, or situations in the environment that can generate stress. Karr-Wisniewski & Lu, (2010) defines overload as a typical stressor. It causes negative emotional reactions, such as exhaustion, discomfort, dissatisfaction, and unfriendly attitudes toward SNS use (Fuglseth & Sorebo, 2014; Salanova, Llorens, & Cifre, 2013).

In this study, TTSC is employed as the basic theory. We build our research model with the framework of stressor-strain-outcome. Stress comes from overload. The strain manifests itself as social networks fatigue, and the outcome is understood to be discontinuance intention.

3. Research model and hypothesis

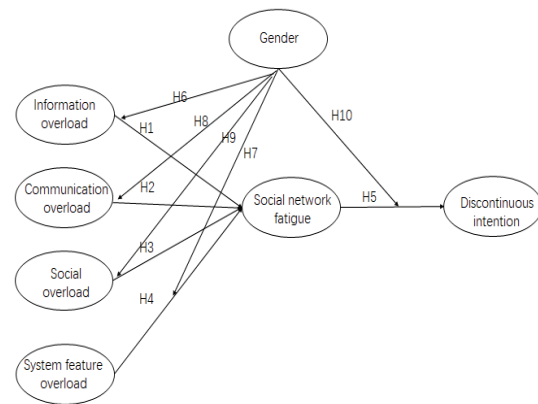


Fig.1 Research Model

3.1 The effects of overloads on SNS fatigue

Information overload refers to the amount of information generated in a social network that exceeds the user's ability to process it. The pace of information proliferation in SNS accelerates as the number of SNS users increases exponentially. Too much information in an SNS could quickly drive SNS users to cognitive limits in processing information and make them feel overwhelmed (Karr-Wisniewski & Lu, 2010). When the user faced with excessive information, it is easy to generate information anxiety, which is characterized by mental and psychological fatigue, anxiety and unhelpfulness. Thus, we proposed:

H1 Information overload is positively related to SNS fatigue

Communication overload refers to the imbalance between frequent communication and human cognitive ability, which can increase users' burden and make them feel powerless to cope (Zhang et al., 2016). This constant communication interrupts people's work. Communication overload can make it difficult for people to focus on their work or even finish it, leading to fatigue (Lee et al., 2016). Thus, we proposed:

H2 Communication overload is positively related to SNS fatigue

Dunbar (2010) has proposed and tested the “150 law”, which states that the human brain can only maintain 148 stable social relationships, but most people actually have far more SNS friends than that. It may take a lot of effort to manage these redundant social relationships. SNS technology allows people to connect with each other anytime, anywhere, but constant exposure to social networks and intense social activity can leave users feeling exhausted (Cao & Sun, 2018). This has become a social norm because people need to provide social support

to their friends on the social network. Excessive requests for social support can be a major cause of perceived social overload and fatigue (Zhang, Zhao, Lu, & Yang, 2016). Thus, we proposed:

H3 Social overload is positively related to SNS fatigue

System feature overload captures SNS users' perception of technological characteristics, and it is defined as the perception that the features provided by the SNS platform exceed users' demands. System feature overload occurs when a given information technology is unsuitable for a given task and is considered too complex for the task. Users often encounter system updates and modifications in SNS. While these new features may not be particularly useful to users, people will need to put extra effort into learning about them, and they will feel tired and stressed because of the complexity (Zhang et al., 2016). Thus, we proposed:

H4 System feature overload is positively related to SNS fatigue

3.2 SNS fatigue and discontinuous intention

In the context of SNS, users' social networks fatigue is often associated with their discontinuous intention. The discontinuous intention mainly includes the decrease in the duration and frequency of SNS use, the intermittent shutdown or permanent shutdown and the shift to other SNS. A lot of previous studies have found that SNF positively affects discontinuous intention (Cha & Lee, 2015; Rahmanyanti & Yasa, 2019; Zhang, Zhao, Lu, & Yang, 2015). Thus, we proposed:

H5 Social networks fatigue is positively related to discontinuous intention

3.3 The moderate effects of gender

Previous studies have found that there are significant differences between male and female in the use of IT. Males' use of SNS is more driven by their ability to get general information (Krasnova, Veltri, Eling, & Buxmann, 2017). Males are more likely to use the Internet for information search and entertainment, while females are more likely to use the Internet for communication (Joiner et al., 2005). Therefore, it can be inferred that in the context of SNS, males have higher information processing ability than females. Females, on the other hand, are more responsive to social and communication requests on SNS, and are less likely to tire of SNS due to social and communication overload. In addition, many studies have found that male and female have different

positive attitudes toward using the Internet. Female lack confidence in their ability to use the Internet and often feel anxious (Joiner et al., 2005), so it can be inferred that females are more likely to feel tired due to the SNS system feature overload. Thus, we proposed:

H6 The positive effect of information overload on social networks fatigue is stronger for females than for males.

H7 The positive effect of system feature overload on social networks fatigue is stronger for females than for males.

H8 The positive effect of communication overload on social networks fatigue is stronger for males than for females.

H9 The positive effect of social overload on social networks fatigue is stronger for males than for females.

Social cognitive theory has demonstrated that males and females behave differently when make decision in various situations. Males are more outcome-oriented, whereas females are more process-oriented. Social role theory also supports this view. So, we conclude that females pay more attention to psychological processes than males, their behavior intention is more affected by social networks fatigue. Thus, we proposed:

H10 The positive effect of social networks fatigue on discontinuous intention is stronger for females than for males.

4. Expected results

SNF has a significant positive effect on the discontinuous intention. Information, communication, social and system feature overload all have significant and positive effects on SNF. They can be listed in order of importance: information overload, social overload, communication overload, and system feature overload. It shows that the existence of a large amount of irrelevant information on SNS is beyond people's ability to deal with, which is the primary cause of SNF. Second, sometimes due to the pressure of social norms, people have to provide social support to their friends, respond positively to what they post, vote for their friends or buy the goods they sell on SNS, which is the second factor causing SNF. The third cause of SNF is too much communication, which causes distraction and other negative effects. However, system feature overload has the least impact on SNF, probably

because SNS is relatively simple in overall function design and easy to control.

Male and female groups have different perceptions and receptivity to technology and relationship-oriented factors, and have different response to technical pressure. Therefore, gender difference exists in the generation of discontinuous intention. Information overload and system feature overload have a greater effect on SNF for female. Communication and social overload have a greater effect on SNF for male. And female users are more likely to be tired and generate a discontinuous intention.

5. Implications

We integrated previous studies to define four types of SNS overload and revealed their varying degrees impact on SNF. Based on the TTSC, we consider gender as an individual trait and investigate its moderating role in this influence process. Our research sheds light on the understanding of negative psychological and behavior of users in SNS context.

In addition, through our research, we hope to provide some useful suggestions for SNS users and designers. For the designer, they should provide proper filter mechanism for the user to choose independently, strengthen SNS content management function, reduce the interference and prevent the user fatigue. Such as providing summaries of articles, or categorizing content according to users' interests, to provide a better information processing experience for users. SNS can restrict some meaningless commercial activities; allows users to choose to turn off certain features to avoid interrupts.

Furthermore, different strategies should be adopted for male and female groups. For example, reduce recommendations for new conversations or new friends on male users' pages. For male users, SNS should provide some functionality to group friends and allow them to organize friends according to groups, such as some friends are restricted to communication. SNS should reduce the general information on female users' page and provide simpler functional design for female them.

At last, users should be aware that they can avoid the negative effects of SNS by actively managing their actions. For example, reduce unnecessary online friends, avoid meaningless social activities, reduce stress and burden. Use strategies such as delayed and focused responses to reduce the time and effort invested in the conversation. Block certain information platforms or friends and choose other communication channels to reduce dependence on SNS.

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Misinformation detection and rectification based on QA system and text similarity with COVID-19

Insup Lim^a, Namjae Cho^b

^a MSc Student, School of Business, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +82-2-2220-4142, E-mail: insup88080@hanyang.ac.kr

^b Corresponding author: Professor, School of Business, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +82-2-2220-1058, Fax: +82-2-2292-3195, E-mail: njcho@hanyang.ac.kr

Abstract

As COVID-19 spread widely, and rapidly, the number of misinformation is also increasing, which WHO has referred to this phenomenon as “Infodemic”. The purpose of this research is to develop detection and rectification of COVID-19 misinformation based on Open-domain QA system and text similarity. 9 testing conditions were used in this model. For open-domain QA system, 6 conditions were applied using three different types of dataset types, scientific, social media, and news, both datasets, and two different methods of choosing the answer, choosing the top answer generated from the QA system and voting from the top three answers generated from QA system. The other 3 conditions were the Closed-Domain QA system with different dataset types. The best results from the testing model were 76% using all datasets with voting from the top 3 answers outperforming by 16% from the closed-domain model.

Keywords

Misinformation detection, Fake information detection, QA system, cosine similarity, Machine learning

1. Introduction

At the end of 2019, WHO was informed of an unknown etiology detected in Wuhan City, Hubei province of China (Novel Coronavirus, 2020). On 13 January 2020, the Ministry of Public Health, Thailand reported the first imported case of lab-confirmed novel coronavirus (2019-nCoV) from Wuhan (World Health Organization, 2020) and In an exponential rate with total reports of 57.8 million cases and over 1.3 million deaths on 22 November 2020 (World Health Organization, 2020).

The UN secretary-general launched the UN communications response initiative to combat the spread of misinformation in April 2020 (WHO, 2020). At the World Health Assembly in May 2020, WHO Member States passed Resolution WHA73.1 on the COVID-19 response. The Resolution recognizes that managing the infodemic is a critical part of controlling the COVID-19 pandemic (WHO, 2020).

Under the COVID-19 infodemic, many fake news detection models have been developed, and the majority of the models were based on classification techniques.

Classification techniques require tremendous amount of label datasets. Even there's a lot of true scientific information on the web, still it lacks false labeled information.

To resolve this problem, the proposed misinformation detection model is based on only using true information, Question Answering system (QA system) and text similarities.

2. Literature Review

Misinformation is defined as false information that is not created with the intention of hurting others (WHO, 2020a). Even though it is not intended to hurt people, but to actually help them, still it is very dangerous for people to act on using unverified treatments against COVID-19.

2.1 Misinformation Detection and Rectification Systems

Classic misinformation detection models are based on supervised learning classification models, that need labeled datasets to identify whether they are true or not. Gilda (2017) tested TF-IDF with multiple machine learning algorithms, to identify fake news from Signal

Media and OpenSource.co. Granik et al (2017) used Naïve Bayes to classify fake news on Facebook news posts. Recently, after the COVID-19 outbreak, Elhadad et al (2020) has built a machine learning model to classify fake COVID-19 information in Twitter by using voting systems of machine learning algorithms in multiple feature extraction conditions.

Rectification systems have been used based on QA systems, comparing the text similarity between the given answer and machine learning generated answer. Attia et al (2018) have used an automatic short answer correction system based on course material to correct the wrong answer of the questions.

2.2 Question Answer Generation

Obtaining training data for QA system is time-consuming and resource-intensive, and current available QA datasets are limited to certain domains and languages (Lewis et al, 2019).

The question answering system is divided into two steps, that cloze generation and translation. Cloze generation is the process of masking noun or named entity, and cloze translation transforms the masked sentence into question format (Lewis et al, 2019).

2.3 Open Domain Question Answering model

There are two types of QA system, open-domain, and closed-domain. The Open-domain QA system uses all the contexts provided in the system to answer the question, finding the appropriate context with the semantic similarity between the question and each subset of contexts (Semnani et al, 2020). On the other hand, the closed-domain QA system uses only one context for certain questions.

In this research both closed- and open-domain QA system, but the proposed model is more fitted into the open-domain system.

The QA system is fine-tuned upon the BERT-LARGE pretrained model, with 24 layers and 1024 hidden sizes, with 16 self-attention heads. The pretrained model is created by masking a word into a [MASK] token, and is trained to predict the masked word, allowing the model to understand the context (Develin et al 2018).

2.4 Word-Embedding

Word embedding is a technique of creating a word or sentence into a certain dimension sized vector. The tool used to vectorize the answers is BioBERT word-embedding module, that is based on BioBERT, a model

trained with 29 million PubMed articles with the same process of BERT. In this research the dimension of the word or sentence-embedding is 768, which is the same as the embedding size of BERT (Lee et al, 2020).

2.5 Text Similarity

Text similarity is used to compare how similar two text are to each other. Cosine similarity is one of the most widely used algorithm for text similarity. It is calculated between two vectorized words (or sentences) that is done from the word-embedding step (Li et al, 2013).

2.6 COVID-19 Datasets

Datasets were collected from Kaggle CORD-19 Competition (Wang et al, 2020), FAQs of WHO (who, 2020), CDC (CDC, 2020), CMU-MisCOV19 (Memon et al, 2020), CoAID (Cui et al, 2020), COVID-QA (Möller et al, 2020).

Datasets are divided into two types, scientific datasets and SNS, News datasets. Scientific datasets are mainly published journals or datasets from authorized organizations such as WHO and CDC.

CORD-19 dataset is a collection of published articles from major biomedical journals, mainly from PubMed Central, by well-known AI research communities to support the ongoing researches of COVID-19. It contains over 400,000 articles and 150,000 full texts about COVID-19, SARS-CoV-2, and related coronaviruses (Wang et al, 2020). In this research, full paper is not used but the abstracts of the papers are used to build this model.

Frequently asked questions from WHO and CDC are also used as scientific datasets that are verified by these organizations. It provides basic information of COVID-19 and how to prevent it.

COVID-QA dataset is also in the category of scientific dataset, because the original contexts of Questions Answer data are published articles of COVID-19.

Next datasets are CMU-MisCOV19 datasets, and CoAID, CMU-MisCOV19 contains tweets datasets that is labeled with 16 different themes, such as true public health response, fake cure, conspiracy, irrelevant and so on (Memon et al, 2020).

CoAID is Covid-19 healthcare misinformation Dataset, that contains Tweets, retweets, social platform post (news) datasets (Cui et al, 2020).

3. Research Model and Implementation

3.1 Research Model

Figure 1 is the model of fake COVID-19 QA generation system, using the QA generation system based on Cloze translation. Datasets used in this model are CMU-MisCOV19, CoAID dataset that is from tweets and news. By manually removing the contents duplicated, 153 False Question Answer sets were generated.

Figure 1. Fake Question Answer Generation

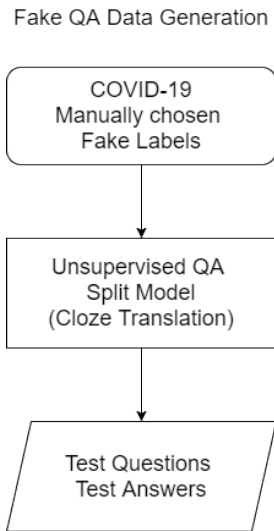


Figure 2 corresponds to the training system of the QA model. Since, data used for fine-tuning the QA model needs to be true, the full contexts are from CORD-19, combined FAQs of WHO and CDC, COVID-QA original contexts, true data of CMU-MisCOV19 and CoAID, directly mentioning the word in Table 1 (Elhadad et al, 2020).

The scientific abstracts of CORD-19’s word length were limited to 150 to 250 words, it is based on the word limit of PubMed Central (PMC), since most of the CORD-19 articles are sourced from PMC.

Text summarization was done for data that are over 250 words, such as the original text from COVID-QA dataset, to use as much various data as possible.

For the QA system, a lightweight wrapper for the deep learning library ktrain, was used for loading the BERT-LARGE model, and build a QA model, that is based on an Open-Domain QA system.

Figure 2. Question Answering Model Fine-Tuning

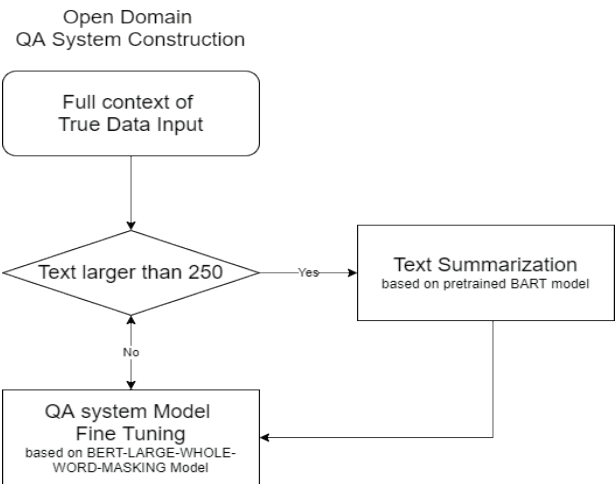
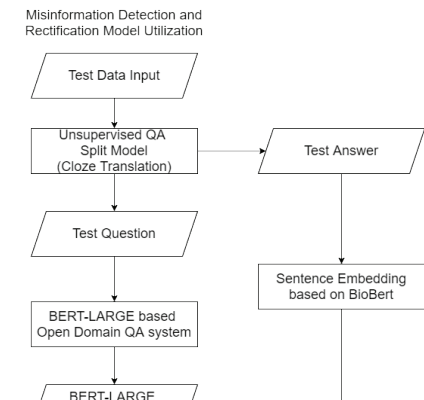


Table 1. Keywords equivalent to COVID-19

Keywords of COVID-19
● Coronavirus
● Corona_virus
● Corona-virus
● Novel_Coronavirus
● 2019-nCov
● Novel-Coronavirus
● NovelCoronavirus
● 2019_nCov
● COVID-19
● SARS-CoV-2
● Covid19

Figure 3 is the detection and rectification model utilization, first the data is put into the QA generation model, then the test question is put into the BERT-LARGE QA model that generates the answer. After the process, the test answer generated from the QA split model and the BERT-generated answer are converted into vectors by BioBERT-embedding library. These vectors are then compared with cosine similarity bringing out the value of 0 to 1, to determine whether the test answer is fake or not.

Figure 3. Misinformation Detection and Rectification Model Utilization



3.3 Model Implementation on different datasets

The model is implemented with 9 different conditions shown in table 2. From two different types of QA model and three different datatypes

Table 2. Testing conditions

Methodology	Dataset Types
Closed Domain QA system (base model)	Aggregated Data of Scientific, SNS and News
	Scientific Data
	SNS and News Data
Top BERT-LARGE answer with Open Domain QA system	Aggregated Data of Scientific, SNS and News
	Scientific Data
	SNS and News Data
Top Three BERT-LARGE answer with Open Domain QA system	Aggregated Data of Scientific, SNS and News
	Scientific Data
	SNS and News Data

The dataset types are divided into three categories. The scientific dataset, SNS and news dataset, and the aggregation of both datasets. The scientific datasets are the published articles and answers of the FAQs from WHO and CDC, the SNS and news datasets are mainly tweets and news that was contained in CMU-MisCOV, CoAID.

There are certain questions that cannot be answered by the QA model. In this case, the QA system generated answer is labeled as “No Response”. The evaluation of the model is done by excluding the “No Response” answers.

The Closed Domain QA system is the base model, that of finding the highest matching theme context and find the answer within the text.

Top BERT-LARGE answer is based on Open Domain QA system that generates the answers by searching the highest semantic similarity from the whole context.

Top Three BERT-LARGE answer QA system is similar to the explanation above, but finds the answer with top three highest semantic similarities, then determines the answer by choosing the majority by voting.

There are three rules for determining whether it is true or misinformation for the top three answer condition, after calculating the cosine similarity between each three answers and the test answer.

1. If the question has three or two answers with the same result, vote for the majority
2. If the question has two answers with a tie, pick the top

answer, since it has the highest semantic similarity between the context and the question

3. If the question has only one answer pick the top answer as the result

For example, if answer 1 and test data has similarity of 0.9, answer 2 and test data has 0.8, answer 3 and test data has 0.4 and the threshold of determining the true or fake is 0.7, then the true is 2 and fake is 1, meaning the test answer is true.

4. Results

4.1 Accuracy and F1 score

As shown in table 3 the closed-domain QA system had at most 0.592 accuracy with 0.362 F1-score, which was using the scientific datasets, and the lowest score with the SNS and News Datasets that had the accuracy of 0.394 and F1-score of 0.257. In this case, the similarity thresholds were very high, which are 0.9, compared to other testing conditions.

Table 3. Closed-Domain QA system results

Dataset Types	Similarity Threshold	F1 score	Accuracy
Aggregated Data	> 0.9	0.351	0.564
Scientific Data	> 0.9	0.362	0.592
SNS and News Data	> 0.9	0.257	0.394

Table 4 shows the top Answer comparison between the BERT-LARGE QA system generation and the given test answer. There are questions that could not be answered, and the value with “Excluded” is the value with those unanswered questions removed. The highest score among all within the “Excluded” category, the accuracy was 0.724 from the scientific datasets with 0.793 similarity threshold, whereas the lowest was the SNS and News Dataset with 0.573 accuracy and 0.654 f1-score with a similarity threshold of 0.740.

Table 4. Top answer BERT-LARGE QA system results

Dataset Types	Similarity Threshold	No Response	F1 score	Accuracy
Aggregated Data	> 0.796	Included	0.715	0.722
		Excluded	0.719	0.717
Scientific Data	> 0.793	Included	0.723	0.732
		Excluded	0.728	0.724
SNS and News Data	> 0.740	Included	0.649	0.572
		Excluded	0.654	0.573

Unlike the other two results table 5 indicates dataset with the highest accuracy is the aggregated data of both scientific, SNS and News data. It has an accuracy of 0.760 with F1 score of 0.758, the SNS and News data still got the lowest accuracy and F1 score of 0.741, 0.733 respectively.

Table 5. Top three answer BERT-LARGE QA system results

Dataset Types	Similarity Threshold	No Response	F1 score	Accuracy
Aggregated Dataset	> 0.792	Included	0.753	0.764
		Excluded	0.758	0.760
Scientific Data	> 0.792	Included	0.733	0.741
		Excluded	0.738	0.734
SNS and News Data	> 0.791	Included	0.613	0.629
		Excluded	0.620	0.632

4.2 Analysis of correctly/falsely answered questions

Figure 4 and table 6 show the most frequent words from correctly answered questions. According to figure 4 and table 6, cure, patients, vaccine, immune, and prevent were the most frequent questions that the QA system answered correctly

Figure 4. Wordcloud of correctly answered questions

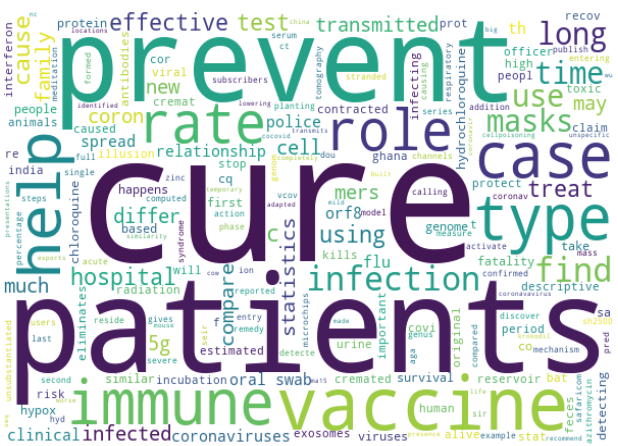


Table 6. Frequency of word from correctly answered questions

Most Frequent words	Word count
Cure	20
Patients	12
Vaccine	8
Immune	6
Prevent	6

Figure 5 and table 7 show the frequent words of falsely answered questions, which were 5g, cure, medicine, hydrochloroquine (correctly hydroxychloroquine), towers.

Figure 5. Wordcloud of falsely answered questions

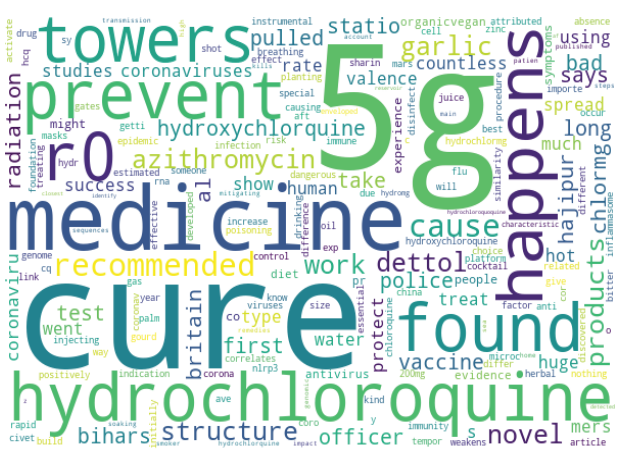


Table 7. Frequency of word from falsely answered questions

Most Frequent words	Word count
5g	10
Cure	7
Medicine	4
Hydrochloroquine	3
towers	3

From these results, the answers containing 5g, medicine were not answered correctly. For the word “cure”, it appeared in both sides that 74% of answering the questions.

5. Conclusion and Limitation

The research aims at detecting and rectifying misinformation of COVID-19. Most of the misinformation detection models are based on classification models, without correcting the false information, and the limitation of these models. First, it cannot indicate which part the wrong information is in the context, it may identify it as false, but it may not indicate which part is wrong. Secondly, there should be tremendous datasets that are labeled true or false to train the model. To solve these problems, the proposed model uses Question Answer system, Question Answer generator, text similarities and only true labeled datasets for training.

The goal of this study has been tested between 9 testing conditions. Comparison between closed-domain, and open-domain question answer systems, scientific dataset and SNS, News dataset, and choosing the highest semantic similarity or the highest three candidate answers for voting.

The top accuracy among all testing conditions was 76% that used aggregated dataset of scientific, SNS and news datasets for Open-domain question answering system with

voting the top three candidate answers, outperforming the highest accuracy from closed-domain using scientific dataset by over 16%.

From the analysis of words the model has predicted the words including “patients”, “vaccine”, “immune”, “prevent”, on the other hand, questions including words like “5g”, “medicine”, “hydrochloroquine (hydroxychloroquine)”, “towers” were not predicted properly. For the word “cure”, it was in both sides with almost the most frequent words in the questions. The question including “cure” was predicted properly 20 times, whereas it was wrongly answered for 7 times showing 74% of correct answering rate.

There are several limitations that can improve the result of this model. First of all, the scarcity of computing resource is one of the main problems. This led to using the text summarization to reduce the size of the dataset, even abstract is an abbreviated essential information of the article, still it is not as precise as it compared to the full paper. If there were enough computing resources, it would have been able to use the full published articles of COVID-19.

Secondly, unlike other fields of study, COVID-19 is a new subject that has only been around a year that lacks various dataset, such as formatted question and answer datasets that are verified to predict with high accuracy.

Thirdly, since this was a binary classification with one boundary of determining true or false, we do not know the degree of how much is true or how much is fake. If it was labeled in much precise standard, there could have been more possibility to improve the model.

Finally, creating a new word-embedding model specialized to COVID-19 would improve the model by having accurate vectors, that leads to more accurate text similarity calculation to determine true or false of the data.

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Smart, sustainable and resilient (SSR) healthcare supply chain: A Fuzzy-AHP Approach

Md Kamal Hossain^a and Dr. Vikas Thakur^b

^a*School of Management, National Institute of Technology Rourkela, India 769008,*

Tel: +91-6294997929,

Email: 518sm2001@nitrikl.ac.in

^b*School of Management, National Institute of Technology Rourkela, India 769008,*

Tel: +91-6612462807, Email: thakurv@nitrikl.ac.in

Abstract

The smart, sustainable and resilient (SSR) in healthcare supply chain (HCSC) has been considered as a crucial element in the healthcare industry. However, the existing practices and processes are facing many challenges in the real world scenarios along with the absence of a very few studies in SSR in HCSC. The present study aims to analyze the drivers of implementing SSR in HCSC in the Indian context. The method of fuzzy-Analytical Hierarchy Process (AHP) has been implemented to prioritize the identified factors and subsequently ranking them. The study has found process coordination and integration, flexibilities in HCSC and HCSC information system to be some of the most prioritized factors of implementing SSR in HCSC. Policy makers can make the best of the highly prioritized factors and improve on the least prioritized one to suit the organizational need. The implications and conclusion has been highlighted in the present study.

Keywords

Smart, Sustainable and Resilient (SSR); Healthcare Supply Chain (HCSC); Fuzzy-Analytic Hierarchy Process (AHP); Coordination and Integration.

1. Introduction

The implementation of the contemporary information and communication solutions has aggravated the problems of inefficient practices urging for the implementation of highly advance and innovative technological solutions (Jayaraman et al., 2019). Thus to counter the shortcomings of the contemporary information and communication technologies, the fourth industrial revolution called as the industry 4.0 can be implemented to achieve innovation for the increased HCSC efficiency (Javaid and Haleem, 2019). The concept of industry 4.0 was first established in Germany in 2011 and since then some countries such as the USA, Japan and China have appropriately applied it in their own plan to revolutionize industries (Gunasekaran and Ngai, 2004; Ding, 2018). Industry 4.0 constitutes of four important components, namely, Internet of Things (IoT), Cyber-physical Systems (CPS), Internet of

Services (IoS) and Smart Factory (Hermann et al., 2016). The IoT consists of inter-connected physical objects that are enabled using Radio-frequency Identification (RFID), wireless networks and cloud computing (Trappey et al., 2017). CPS constitute the integration of physical and cyber networks to render more transparent and efficient actions (Zhong et al., 2017). The concept of smart factory involves instituting of robots to automate the processes (Waibel et al., 2017) and cloud computing facilitates recording of all the details being developed across the supply chain through the scanning of bar codes, QR codes and RFID tags (Kache and Seuring, 2017; Alloghani et al., 2018).

Hence, industry 4.0 would facilitate the HCSC to perform various integrated and productive functions to solve various problems multi-dynamic approaches in the HC industry such as: enhanced productivity, quality improvements,

improved accuracy and efficiency, managing HCSC data efficiently and an improved information system (Javaid and Haleem, 2019). In carrying out the study very little research works have been carried out providing a window of opportunities to fill the literature and policy gaps in implementing industry 4.0 for designing smart and sustainable HCSC. Hence, the purpose of the current study is to identify and analyze the drivers of implementing the smart, sustainable and resilient (SSR) HCSC. In relation to the pursuance of the study, the following research questions have been developed:

1. What are the crucial drivers of implementing SSR HCSC?
2. How are the selected drivers of implementing SSR HCSC have been analyzed?
3. What are important practical managerial implications of the study?

Based on the above research questions, the following objectives of the study have been derived:

1. To identify the important drivers of implementing SSR HCSC through literature support and experts' opinions.
2. The selected factors have been processed and prioritized by implementing the fuzzy-Analytic Hierarchy Process (AHP).
3. The practical managerial implications have been highlighted to facilitate implementing the prioritized drivers of implementing SSR HCSC.

The present study proceeds firstly, by identifying the various drivers of implementing SSR HCSC through literature review and experts' support. The experts were consulted to finalize the drivers. The experts consulted include: HCSC experts, procurement officers, medical doctors and hospital managers. The rest of the paper has been carried out by the following ways: Section 2 covers the literature review, Section 3 discusses the solution methodology, Section 4 highlights the application of the methodology, and Section 5 covers results and discussions. Finally, Section 6 highlighted the practical managerial implications and conclusion of the study has been developed in Section 7.

2. Literature Review

In the HCSC, mass customization, shorter lead time and other issues cannot be solved with the existing practices and require incorporating SSR techniques. The technologies of industry 4.0 enables safety, conforming

standards and increased information management (Javaid and Haleem, 2019). Implementing industry 4.0 would revolutionize the entire HCSC through the integration of the physical and the virtual realm involving people as well as things (Kagermann, 2015). The big data and advanced analytics perform a crucial role in implementing SSR in the HCSC (Waller and Faucett, 2013).

Some of the research studies of implementing industry 4.0 in HCSC have been conducted to highlight the technical basis and implications in the HC industry (Waibel et al., 2017). The implementation of smart technologies in the manufacturing sector have given birth to the evolution of industry 4.0 helps to decentralize business process (Wiengarten and Longoni, 2015). In order to realize the application of industry 4.0 in the HCSC, process integration is required to achieve expected performances that demands coordination of various stakeholders across the entire supply chain (Gunasekaran and Ngai 2004). Besides, HCSC flexibilities enabled through stakeholder's collaboration is required to enhance the performance and responsiveness of the supply chain for an effective HC services.

Table 1: The drivers of implementing SSR in the HCSC

S. N.	Drivers	References
1.	Coordinating and integrating of processes in the HCSC (HCSC1)	Kowalski (2009); Kagermann (2015); Waibel et al. (2017)
2.	Maintaining HCSC flexibilities (HCSC2)	McKone-Sweet et al. (2005); Wiengarten and Longoni (2015)
3.	HCSC information system (HCSC3)	Datta (2017); Waibel et al. (2017)
4.	HCSC agility and resilience (HCSC4)	Altay et al. (2018); Singh (2019)
5.	Implementing IoT in HCSC (HCSC5)	Gunasekaran and Ngai (2004); Jayaraman et al. (2019)
6.	Use of RFID tags (HCSC6)	Kache and Seuring (2017); Hossain and Thakur (2020)
7.	Promoting e-Health services (HCSC7)	Rahmani et al. (2018); Rotich (2018)
8.	Lean HCSC practices (HCSC8)	Hossain and Thakur (2020); Singh (2019)
9.	Adequate HCSC knowledge (HCSC9)	McKone-Sweet et al. (2005); Kasthuri (2018); Lasi et al. (2014)
10.	Managing HCSC quality standards (HCSC10)	Hossain and Thakur (2020); Zhong et al. (2017)

11. Equitable HC accessibility (HCSC11) Kasthuri (2018); Singh (2019)
12. Infrastructural development supporting cyber-physical systems and smart factories(HCSC12) Hermann et al. (2016); Zhong et al. (2017)
13. Investment in HCSC R&D (HCSC13) Hossain and Thakur (2020); Alloghani et al. (2018)

Delivery (Datta 2017). The presence of HCSC viability that is agility and resilience is a critical to implement SSR that enhances required operational performances (Altay et al., 2018). To enhance the HCSC performances, implementing SSR would be considered as a value driven strategy to revolutionize the entire supply chain processes (Kache and Seuring, 2017).

2.1. Literature on solution methodology perspective

The methodology of fuzzy-AHP has been implemented in the study to prioritize the selected drivers of implementing SSR in HCSC. In order to prioritize the drivers, experts were consulted for pair-wise comparison of the drivers. Fuzzy-AHP is an improvement of the simple AHP. Due to the presence of the inconclusiveness and the biasedness of human judgements in the AHP method, the concept of fuzzy has been integrated to form the methodology of fuzzy-AHP (Hossain and Thakur, 2020). The various studies have been conducted implementing the methodology of fuzzy-AHP. Thakur and Ramesh (2017) have implemented the fuzzy-AHP to sort out complex problems.

3. The Solution methodology

The present study has considered the implementation of fuzzy-AHP to prioritize the drivers of implementing SSR in HCSC. The method of fuzzy-AHP is an improvement of AHP as given by Prof. T. L. Saaty in 1990. The step wise process of calculation using fuzzy-AHP is as follows:

Step 1: Identify the critical drivers of implementing SSR HCSC.

The factors have been identified and finalized through the consultation with experts and support from the existing relevant literatures.

Step 2: Recording experts' inputs on the pairwise-comparison of the drivers of implementing SSR HCSC.

The experts were advised to rate the drivers on the basis of a five-point linguistic scale (shown in Table 2) and subsequently their inputs have been recorded.

Table 2: Fuzzy linguistic variables for pairwise comparison of the factors of SSR in the HCSC

Linguistic Variables	TFN	Inverse TFN
Equally preferred (/)	(1, 1, 3)	(1/3, 1, 1)
Weakly preferred (/)	(1, 3, 5)	(1/5, 1/3, 1)
Strongly preferred (/)	(3, 5, 7)	(1/7, 1/5, 1/3)
Very strongly preferred (/)	(5, 7, 9)	(1/9, 1/7, 1/5)
Extremely preferred (/)	(7, 9, 9)	(1/9, 1/9, 1/7)

The pair-wise comparison of the drivers can be developed in the form as given in Eqn. (1)

$$= = (1)$$

Where is the individual brain-storming session.

Step 3: The linguistic variables were converted into Triangular Fuzzy Numbers (TFN).

After recording inputs from experts, the linguistic variables were converted into TFNs using the Eqn. (2). (2)

Step 4: Calculating the fuzzy geometric mean using the Eqn. (3). (3)

Where, is fuzzy geometric mean and pair-wise comparison value.

Step 5: Calculation of the fuzzy weight using the Eqn. (4). = (4)

Step 6: Defuzzifying the TFNs into crisp values by the center of area (COA) method using Eqn. (5)

$$\text{Center of Area} = (5)$$

Step 7: Normalizing the crisp values using the Eqn. (6) to identify the relative weight of the drivers of implementing industry 4.0 in HCSC. = (6)

4. Application of the solution methodology

In the present study, data have been collected from experts having relevant experiences and were analyzed using the fuzzy-AHP method. Initially, the drivers of SSR in HCSC have been compared pairwise by the experts and a fuzzy geometric mean matrix have been developed as shown in Table 3.

Table 3: Fuzzy geometric mean value of the drivers of SSR in the HCSC

2.50	3.86	5.51
1.42	1.94	3.21
0.82	1.10	2.16
0.78	1.09	1.89
0.86	1.25	2.02
0.64	0.99	1.64
0.53	0.80	1.32
0.46	0.73	1.10
0.59	0.93	1.40
0.34	0.54	0.82
0.24	0.37	0.56
0.67	1.31	1.59
0.33	0.64	0.84

After the fuzzy geometric values were calculated, defuzzified weights of the drivers have been calculated. Since, the sum of the defuzzified weights have been found to be greater than 1, normalized weights have been calculated. Finally, the ranks have been developed for the drivers from the normalized weights (shown in Table 4).

Table 4: Normalized weight of the drivers of SSR in the HCSC and their rankings

Drivers	Normalized weights	Rank
Coordinating and integrating of processes in the HCSC (HCSC1)	0.236	1
Maintaining HCSC flexibilities (HCSC2)	0.132	2
HCSC information system (HCSC3)	0.084	3
HCSC agility and resilience (HCSC4)	0.076	5
Implementing IoT in HCSC (HCSC5)	0.083	4
The widespread use of RFID tags (HCSC6)	0.066	7
Promoting e-Health services (HCSC7)	0.054	9
Lean HCSC practices (HCSC8)	0.046	10
Adequate HCSC knowledge (HCSC9)	0.059	8
Managing HCSC quality standards (HCSC10)	0.034	12
Equitable HC accessibilities (HCSC11)	0.023	13
Infrastructural development supporting cyber-physical systems and smart factories (HCSC12)	0.071	6
Investment in HCSC R&D (HCSC13)	0.036	11

5. Results and Discussions

The analysis of the study using the fuzzy-AHP has found that ‘Coordinating and integrating of processes in the HCSC’ is the most prioritized drivers of implementing SSR to achieve the desired HC performances and responsiveness (Datta 2017). The drivers of “maintaining HCSC flexibilities” and “HCSC information system” have attained the second and third rank in the prioritization respectively. Consecutively, “implementing IoT in HCSC”, “HCSC agility, resilience”, “infrastructural development supporting cyber-physical systems and smart factories”, and “the use of RFID tags” have been ranked fourth, fifth, sixth, and seventh respectively. IoT and cyber-physical systems in HCSC is needed to transform the physical processes into virtualized services (Hermann et al. (2016);

Zhong et al. (2017). In order to improve the operational performances of the HCSC, viability in the form of agility and resilience is necessary (Singh, 2019). The drivers, namely, “adequate HCSC knowledge”, “promoting e-Health services”, “lean HCSC practices”, “investment in HCSC R&D”, “managing HCSC quality standards”, and “equitable HC accessibilities” have attained eight, ninth, tenth, eleventh, twelfth, and thirteenth respectively. Limited HCSC knowledge has been an impediment factors and capitalization should be made to enhance the skill set up of the workers (McKone-Sweet et al. (2005). The lean HCSC practices are required to reduce wastage of the limited HC resources and enhance the quality of services at the same time so that much attention can be paid toward providing medical accessibilities to as much population as possible (Kasthuri, 2018; Hossain and Thakur, 2020). The HCSC research and development requires considerable amount investment to enhance the efficiency of delivering HC services (Rahmani et al., 2018; Rotich, 2018) and mainstreaming the e-health services into the realm of the physical HC delivery would alleviate the existing burdening on the HC industry (Gunasekaran and Ngai, 2004; Jayaraman et al., 2019).

6. Implications of the Study

The present research bears important insights for the selected drivers of implementing SSR in HCSC. The results of the study have been discussed with the experts and the following implications are developed:

- (1) The highly prioritized drivers should be patronized and implemented on priority basis whereas, the less prioritized drivers should be controlled and enhanced to raise their performance levels.
- (2) HC managers should exert much emphasis on coordination and integration of HCSC processes to enhances performance of HC delivery.
- (3) Managers should consider the drivers of IoT, cyber-physical systems, internet of services and smart factory applications into HCSC to drive the implementation of SSR concepts.
- (4) Much of the emphasis should be paid towards mainstreaming the e-health services into the physical real of HC delivery.

7. Conclusion of the Study

The implementation of the concept of SSR in the HCSC can be considered as a paradigm shift in the HC industry. The implementation of the highly prioritized factors of the present study, namely, process coordination and

integration, HCSC flexibilities, CPS, IoT, and RFID can initiate the functioning of a highly cohesive and a responsive HCSC. The implementation of these drivers can lead to an enhanced transparency in the supply chain processes. Executing SSR at the organizational level in the HC industry would facilitate process improvements and subsequently, enhances the performance through the enabling technologies. The promotion of digitalization and automation through implementation of SSR in HCSC would result in problem solving by technical and analytical capabilities to enhance the efficiency at the level of supply chain processes.

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Can e-learning enhance the maximum access to education and quality in a developing country: with special reference to Nepal

Sateesh Kumar Ojha and Jagadish Chandra Wagle
Lincoln University College, Malaysia

Abstract

This article reviews the concepts and benefits of e-learning over traditional teaching based on physical proximity. It discusses how the education system of developing countries like Nepal, which is characterized by physically and socially divided civilians, can be benefitted with the help of ICT inhibited eLearning. Also discusses its status from the perception of education administrators and managers running online education during COVID 19 and how this system can ensure access and quality in education.

Keywords

e-learning, education system, curriculum, delivery of education

Introduction

One of the main problems of any country is how to develop it with the maximum contributions of its citizens. One of the main components for the prosperousness of any country is the level of education and types of education being provided to the people of the country. The development principle states that people's development is the root of every development in any society, community, and country. Each people living in the country is expected to maximum productivity so that country can generate maximum productivity. This is possible only when each citizen has access to education according to their interest and intelligence (Howard Gardener multiple intelligence theory, 1983). There are numerous problems as to the access of all to education: topological structure of the country, government policy regarding free and compulsory, the proximity of education institution, availability of interesting subjects, etc. This research is done to discuss how ICT can be used to maximize the access of the students with enhanced quality.

Objective

The objective of the study is to assess the existing online education practices and explore a model of education system indicating how ICT be intervened in the national education system of the country so that maximum access and quality in education by the individual is possible.

Literature review

e-learning

D. R. Garrison & T. Anderson: E-Learning in the 21st

Century "unique ability to bring together a community of learners, unrestricted by time or place". The main actors of the societies are researchers, academicians, and social workers, who have been endeavoring to selecting and giving education looking at the issue of development of society and advocating the education system helps to his direction. The root of social development is educational input that comes from the interaction of these actors. Social workers state education is the right of every individual, if this right of an individual is preserved and executed then every human being becomes able to give a full contribution from his developed abilities. The researchers continuously searching the best way of teaching with the emphasis on how a learner learns best and the educationist [professors, teachers] are the people who are actively involved in teaching directly or indirectly with the focus on how to help the learners so that best learning by him/her is possible. The learners are the people who are learning according to the interest and ability with the intentions that they will contribute to the society for its development. Among these actors, two processes come directly in the field of teaching and learning, ie teaching process and the learning process [1,2,3,4,5].

How fast society can develop depend upon how often the interaction between them takes up. And how they make interact depends on how they think, how they share the knowledge and skill, and how they act with which resource they act. As these are the issues of how these people are being facilitated with the information, so this era is known as the information era with the realization of

informational need and tools and techniques that help to fulfill the information need [6,7,8].

The course of development of tools and techniques took some significant shift to the virtual world from the physical world. This is shortening the needed time for teaching and learning significantly. The time one needs to reach the physical location was different for individuals, now changed and discrimination of it has reduced significantly to zero. Similarly, the differences in quality of education due to quality of teaching and teaching abilities from facilitators were also decreased and can be reduced to zero. It is because an instructor with the highest teaching ability can be used by the institutions to deliver his teaching uniformly to all sectors.

A large number of studies, these days, have consensus in one thing that there are two modes of teaching, one is conventional teaching for which physical proximity of actors and facilities are deemed to be necessary. Another mode distance learning mode where the needs of physical facilities in teaching and learning like institutional buildings, the physical presence of teacher and students, physical libraries, physically made instructional materials, etc. have been replaced by intangibles signals of wireless technologies. A small portable device can be sufficient for the learners and teachers to resolve all types of barriers and bring efficiency in teaching and learning which were not possible in the past [9,10]. Often this is termed e-learning.

Research has concluded that people liked to learn from CD more than books when CD was introduced [11]. Another research compared the learning of e-learning from traditional learning and found that e-learning is 20% to 30% more efficient [12]. Similar another study found that 94 percent of distance learners expressed that they learned more through the distance mode than the trainee who was involved in the traditional model [13].

Why e-learning is better than traditional learning in the context of learning the facts more, researchers found that in e-learning, learners themselves take the responsibility of learning so go to the depth of subjects and problems and builds knowledge to make it meaningful [14-16].

In e-learning, learners have their own pace of learning, schedule, and contents so whenever they are in the mood and feel easy, they read. So, if they feel more responsibility to read and learn they do more [17].

Two important things in learning are freedom of learners and self-determination of learners [15]. These are available

in distance learning because learners are freed from the movement of travel, and rigid schedules and learning is done with the help of technology being separated from teachers. [18].

There is evidence of the effectiveness of e-learning in research done with the learners of 100 miles away and 40 years or over, as there were found a positive correlation between satisfaction of learning and ease of application of learning [19].

Researches have suggested using e-learning according to the demands of higher education by providing adequate infrastructure and education design that suits the virtual environment [23].

Now many of the benefits of e-learning, realized by the researchers are: acquiring basic skills, increased training time, support for students with disabilities, expanding access, improving quality of teaching and learning, increasing speed, skill development, saving natural resources needed at macro level [20]. Many of the largest universities have started e-learning systems as their alternative provisions and converted themselves as universities running their education system from both modes [21].

Out of the many advantages, some advantages realized from e-learning are: learning at any time, anywhere in any field without similar learning prerequisites, individual learning along with cooperative learning, determining the pace of learning process and according to individual needs, 50% savings in time, 60% savings in cost, the possibility of teaching and learning for all people, training and learning bilaterally, getting fast results in teaching and learning, learning by using multimedia features and conservation of resources and reduction of environmental and noise pollution. [23].

The disadvantage of e-learning is: it may not be able to replace the teacher, emotional human interaction, and face-to-face interaction that can be created in the classroom [22].

This method requires appropriate infrastructure and broadband communications to transmit and receive data [5].

Education system

An education system consists of how learners, teachers, and administrators, interact with each other to impart education (knowledge, skill, and attitude) to the people. For learners, the system encompasses formal and

informal systems. For the teachers, it encompasses verities of techniques and strategies which are to be used according to the learner's ability, interest, and situation. Similarly, administrators formulate and enforce different policies based on the national priority, so that the learner will contribute to the organization and nation in terms of quality and productivity.

<https://tophat.com>, a blog devoting to education states an education system is coordination of individuals (among teachers, administrators, and students), infrastructure (including safe facilities and transportation), and functioning institutions and processes. (<https://tophat.com/glossary/e/education-system/>)

Methodology

The methodology used in the study is descriptive based on a review of the literature and reflection derived from the 25 administrators running online education and pieces of training (including universities and different institutions). Based on the average opinion on some statements as given by them in the Likert's scale, 1 to 5 from strongly disagree to strongly agree, their confidence to run online education effectively was measured. Bases on the average opinion of aggregate score the status is evaluated as to whether there is doubt, or no-doubt to run online education regularly. And the researcher's own experiences on curriculum formulation and implementation are used to develop a model of how ICT can be used. The interpretation focused on access to education and quality to education with the help of ICT uniformly in the country.

Models of delivery

It has developed a model of how an individual can be developed to their fullest potentials.

Table 1: level of educational delivery through ICT

Delivery of learning	Core subjects	Specific subjects
Central delivery	More on Knowledge of the country, government policy,	Less on Specific subjects required by the students based on/her interest and local needs
Field delivery	Less on Knowledge of the country, government policy	More on Specific subjects required by the students based on/her interest and local needs

Education Curriculum

Education in any nation is segregated by different programs and levels. For each level, there is a detailed plan for the instruction set by policy-makers, which is known as curriculum. There are three types of curriculum for an education program. Nation oriented curriculum that a nation should impart to every individual to impart necessary information so that learner understands his country. Such courses can be history, geography, religious and cultural practices of the country.

The second type of curriculum will be the curriculum related to the field of interest of the learner. This can be logical, spatial, linguistic, musical, natural, interpersonal, intrapersonal, and kinesthetic. These things must be developed in a person from the local educational body.

The third type of curriculum is the specialized course that an individual should learn to have depth knowledge so that his delivery of service to the nation and mankind can be best. It must be the specific area of learners' interest and intelligence.

Table 2: Use of ICT in connection with curriculum types in a nation

Curriculum types and levels	Use of ICT for the learning process
Nation oriented curriculum [centralized curriculum system]	The central level authority will deliver to all the parts in a scheduled way. The provision of interaction can be made with the help of software
Curriculum-based on the interest of the learners [decentralized curriculum system]	Learning takes place when the individual takes a learning interest. His interest can be from his internal motivation or external motivation. His interest needs to be matched with intelligence which is called multiple intelligence theory. An individual can develop his full potential only when his intelligence and interest are matched. Local and social support is then used as per the needs.
The third level of curriculum to make on the best performer [decentralized curriculum system for developing the learner outstanding performer]	When one goes deeper, then only his service becomes the excellent service in the society. Wide ranges of data and expert services can be essential for this level which can be provided by ICT, even such knowledge and skills should be brought abroad

Assumption of education regarding individual, community, and nation

1. Every individual is productive and, in some area, he/she is more productive
2. Most of the people in the world are in an average and above-average category with differing intelligence, somewhere more and somewhere less.
3. An individual can contribute in the area where he/she has more intelligence
4. A country's total of development means the performance of each individual in a nation performed with the development of his/her potentialities, even if one individual is left to develop means the country's development lags to that level.

Functions of ICT towards education

1. Tracking the total number of people with their age, address, qualification, and intelligence
2. Developing programs and curriculum based on the potentialities [intelligence they have]
3. Developing central and field relation as to recognizing the individuals
4. Implementing the programs and furnishing database for each individual
5. Monitoring the programs supporting the programs to enhance their implementation
6. Involving a person in the job to society and recording it.
7. Maintaining regular conversation on how to improve the individual for the best performance

Prerequisites of e-Learning

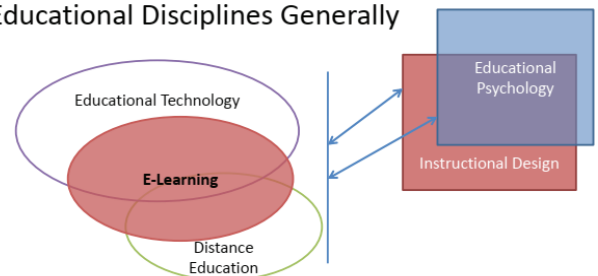
Koper defined e-learning as the use of information and communication technologies (ICTs) to facilitate and enhance learning and teaching" [24]

Better e-learning requires:

8. Well-equipped modern ICT instruments
9. Well trained staffs at the central who must lead from the central describing vision, mission, objectives, policy, etc. to the field staffs
10. A group of well-trained teachers and staffs at the field who can implement the policies designed from the center and report the center
11. ICT enhanced mechanism that can foster central field relation as to understand the individual's interest, aptitude, and intelligence

12. Application of a balanced approach on its design with educational psychology, distance education, education technology, and instructional design.

Educational Disciplines Generally



Institutional confidence

The institutional confidence towards the online training system was found doubtful mostly. The summary is presented in the table below. The score is based on the interview with structured questions with administrators of Twenty-five organizations, during the lockdown period, including non-formal to fully formalized university organizations. training institutions to currently running online training institutions were asked whether doubt or not. The scales were 1 to 5 beginning from fully doubtful to implement to the surety to implement the online education. The remarks were as follows. The primary responsibility of the education department seems to strive towards developing administrators changing their attitudes and readiness towards learning.

Fully doubtful= less than, doubtful= 2.5 to 3.75 and no doubt= 3.75 or above.

Table 3: Confidence level of institutions towards online training

Statements	Mean	Remarks
you are able to run computer programs or mobile apps for online education/ training.	3.75	No doubt
You think online teaching/training work is appropriate	3.00	Doubtful
You are satisfied with the student/ trainee's class participation in education/ / training	2.75	Doubtful
There is adequate interaction between students/trainees during teaching/training	2.25	Doubtful
Adequate textbooks are available to students/trainees online?	2.75	
students/trainees can understand the textbooks provided by the teacher/ instructor online?	2.50	doubtful
Students/trainees can do homework and send for testing online	2.75	doubtful

you are satisfied with the homework done by the students/trainees?	2.00	Doubtful
Participation of students/trainees in any work done by the teacher/instructor in the class is satisfactory.	2.50	doubtful
You are satisfied with the evaluation of the online exam?	2.50	doubtful
Students/trainees can interact in writing with the teacher/instructor using the Nepali / English medium	2.75	doubtful
you are confident that students/trainees can learn enough from online teaching/training?	3.25	doubtful
you are satisfied with experimental learning through online means	3.00	doubtful
Exams conducted with students/trainees to evaluate online education are effective and reliable.	2.25	Doubtful
Students/trainees have been found to have maintained the dignity of the examination in the online examination	2.25	Doubtful

Discussion

How the use of ICT in education can be catalysts to solve the problem of access to education by the poor and quality in the education can be understood clearly in the instances of present crises of developing country like Nepal. These instances are discussed in the following paragraph.

A national daily Rising Nepal has published the educational status on Friday, 12 February 2021, about some Districts of Nepal, Manang, and Sindupalchowk. About Manang, it writes, In Manang, there are 28 schools in the district and 600 plus students are studying in these schools. Children in the remote parts of the Manang district are deprived of school education for six months. Few children in areas with internet access have been studying online at home, the children without internet access are deprived of education, which is a matter of concern.

From development perspectives, many parts of the country are still remote. Quality education has not reached there. These regions are remote also because civil code provisions do not make any sense when it comes to sit together, eat together, walk together to school and eat lunch together with so-called 'untouchable' neighbors of the 'touchable' ones. Remote is not only a physical, geographical reality; it is a mental feeling and attitude. Another case comes from Humla, Jumla, and other remote districts, where the positions of schoolteachers are filled in by the teachers from the Terai and hill regions. First, a teacher from the hot plains would find it unacceptable to spend time in the areas upon the advent of the very

cold season, particularly snowfall. Even after the melting of snow and opening of schools, teachers do not feel it their responsibility to report to the duty and move slowly up around. How would they complete the courses and prepare the students for promotion to higher grades?

Two-thirds of Nepal's population is illiterate; only 22% of the girls are literate. Schools in villages are grim with a high dropout rate. Schools don't have sufficient teachers; the ones they have are poorly trained, and schools lack educational materials. School-aged children migrate to urban areas to work as domestic servants or laborers. These situations could have been solved or minimized if time ICT and e-learning were incepted and developed in the country.

Conclusion

Installation of ICT and inception of e-learning can be the cheapest and reliable means to make all people access to education by all people. It is only the education that touches everybody without discrimination in a developing country. Nepal is in the practice of e-learning and has to focus on it for better and quality education for all citizens.

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The Impact of Knowledge Sharing on the Organizational Innovation among Private Universities in Malaysia

Ali Ameen*, Pradeep Bastola, Dhoha Younis, Neupane Chanda, Osama Isaac

Lincoln University College, Selangor, Malaysia

* Correspondence: ali.ameen@aol.com

Abstract

It has been observed that innovation in governance leads to many positive results. It helps in better utilization of resources and capacities and promotes a more open culture in the government which leads to good governance. The main objective of this study is to examine the impact of Knowledge Sharing on the Organizational Innovation within the educational organization in the private universities in Malaysia. This study has adopted questionnaires to collect data. PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilizing the software SmartPLS 3.0. Results reveal that Knowledge Sharing has a significant impact on the Organizational Innovation. Variance explained by this study was 32%. The results of the current study have the potential to give further insights into innovation of organizations strategies of the educational organization in the private universities.

Keywords

Knowledge development; knowledge sharing; learning access; organizational innovation.

1. Introduction

Organizational Innovation creates a better image of the government which builds trust amongst its citizens. Another major advantage of innovation is that it has a domino effect wherein a successful innovation in one sector opens the doors for innovation in other sectors. One successful innovation leads to a series of innovations which leads to a favourable environment (A. A. A. Ameen & Ahmad, 2012; A. A. B. Ameen & Ahmad, 2013; A. Ameen, Al-Ali, Isaac, & Mohammed, 2020; A. Ameen, Alshamsi, Isaac, Gazem, & Mohammed, 2021) process innovation, and product innovation. Current research utilized smart PLS as a suitable instrument of structural equations modeling (SEM). The idea of innovation is to seek opportunities in order to capitalize them to gain a competitive edge (Schumpeter & Elliott, 1934). The opportunity seeking and advantage seeking behaviours are the practical form of innovation (Tidd & Bessant, 2014). The better understanding of knowledge allows an individual or education organizations to come up with better innovative ideas (Dewar & Dutton, 1986). The innovative ideas also need to practically survive and prosper in their environment as external environment of any educational organization is not static. The concept of innovation evolves therefore it has a better chance of survival in an external environment. Several studies show

that the organizations that are capable of implementing innovative ideas are the most successful ones in the business (Calantone, Cavusgil, & Zhao, 2002). The innovative culture of the whole educational organization is very important as some organizations simply do not identify opportunities while others fail to capitalize those opportunities (SKerlavaja, Dimovskia, Mrvarb, & Pahora, 2010).

Simpson, Siguaw, & Enz (2006) suggest that continuous innovation can increase sustainability of a firm. The implementation of innovation within an educational organization is a difficult task as the whole educational organization needs to share same beliefs. It is important for an organization to first understand the concept of innovation before implementing it (Dombrowski et al., 2007), an innovative culture is the base of success of any firm or organization (Hamel, 1999). The organizations that are innovative have different properties than the ones that are less innovative (Subramanian & Nilakanta, 1996). Communication and collaboration are two of the most important components in an innovative workplace. It is imperative that the educational organization acquires services of talented individuals who can help the educational organization to gain a competitive edge. The collaborative innovation is important for any educational organization as it helps the employees to work with each

other (De Long & Fahey, 2000)(Al-Obthani & Ameen, 2019b, 2019a; Albreiki, Ameen, & Bhaumik, 2019; Albreki, Ameen, & Bhaumik, 2019; Alghawi, Ameen, & Bhaumik, 2019; O. Alshamsi, Ameen, Isaac, Khalifa, & Bhumic, 2019; O. Alshamsi, Ameen, Nusari, et al., 2019; R. Alshamsi, Ameen, & Isaa, 2020; A. Ameen, Al-Ali, et al., 2020; A. Ameen, Alfalasi, Gazem, & Isaac, 2020) there is a clear gap between the indicator of the impact of technology innovation output and government's vision in United Arab Emirates (UAE). The collaboration helps the employees to capitalize on opportunities. The educational organization also needs to reward employees on their innovative work.

The research conducted by Easterby-Smith, Araujo, & Burgoyne (1999) pointed on the role of learning in the process of innovation along with identification of various levels on which a empirical investigation can be developed. While the relationship between the organization's learning & performance of innovation has been subject to conceptual evaluation in the literature concerning organizational innovation and learning, little or negligible research evidence was found with the phenomenon largely being under-examined (Bontis, 2002; Pérez López, Manuel Montes Peón, & José Vazquez Ordás, 2006; Saru, 2007; (Alkatheeri, Ameen, Isaac, Al-Shibami, & Nusari, 2020; Alkatheeri, Ameen, Isaac, Duraisamy, et al., 2020; Haddad et al., 2020)specialty, in contemporary organisations. The theory of technology readiness can be used for measuring the readiness of an organisation to adapt big data. Structural equation modelling is used in this study through AMOS to analyse 381 valid questionnaires to evaluate the proposed model built on the Theory of Technology Readiness to determine the factors that could affect big data adoption. This research concentrates on one of Abu Dhabi's public organisations (ADPOspecialty, in contemporary organisations. The theory of technology readiness can be used for measuring the readiness of an organisation to adapt big data. Structural equation modelling is used in this study through AMOS to analyse 381 valid questionnaires to evaluate the proposed model built on the Theory of Technology Readiness to determine the factors that could affect big data adoption. This research concentrates on one of Abu Dhabi's public organisations (ADPO. In addition, a limitation was observed in terms of the factor Knowledge Sharing and their effect on innovation at various levels. Therefore, the main problem statement for this research study is "To identify the factors or challenges which affect innovation in privet universities".

2. Literature Review

2.1 Knowledge Sharing (KS)

In a broad sense, Knowledge Sharing is a business concept, which includes concerted, coordinated, and deliberate efforts to manage the organization's knowledge through the processes of creating, structuring, disseminating and applying it to enhance organizational performance and create value. The Knowledge Sharing strategy of an educational organization is predicated on shared learning, collaboration, and the sharing of knowledge (Holsapple & Singh, 2001; Liebowitz, 1999; Nonaka & Takeuchi, 1995; Quinn, Anderson, & Finkelstein, 1996; Rhodes, 1996).

An organization's knowledge is only as useful as its ability to be enhanced (Carneiro, 2000). Moreover, knowledge can increase in value over time (Carneiro, 2000) and the advantages that are brought forth by human capital can decrease over time as well (Cabrales, Pérez-Luño, & Valle, 2009). Working through innovation processes requires the harnessing of new acquired knowledge regarding the sub-processes put in place (Nonaka & Takeuchi, 1995; A. A. B. Ameen & Ahmad, 2013; A. Ameen & Ahmad, 2011, 2013, 2017; A. Ameen, Alfalasi, Gazem, & Isaac, 2020; A. Ameen et al., 2021; A. Ameen, Rahmah, et al., 2020) sustainability, and growth. In recognition of the importance of FIS, various countries have started to invest massively in such a system. The World Bank has financed several projects worth billions of US dollars, which have been designed with a better focus on the quality of information to reduce the risk of fraud and improve system reliability. This paper aims to develop a conceptual framework that examines FIS effectiveness in reducing corruption in the public sector. The research approach draws on extant literature in financial information strategies, information systems quality, strategic information systems planning, and international anti-corruption strategies to identify determining factors of information quality, system quality, service quality, FIS characteristic effectiveness, and financial corruption reduction. Results of the literature review suggest 19 propositions and 5 main factors grouped into determinants, including information systems quality, information quality and service quality. Linking financial corruption reduction with anti-corruption strategy, the proposed framework adopts the anti-corruption strategy four-perspective approach to examine the impact of increasing transparency, increasing accountability, decreasing discretion, and low enforcement. FIS characteristic dimensions in this

research comprise monitoring, auditability, tracking, and controlling. Originality/value: The framework provides a starting point for researchers and practitioners to further investigate the use of FIS in governance. For researchers, the framework clarifies the determining factors that can successfully enhance the quality of FIS and the impact of these systems on financial corruption reduction through proposed relationships. For practitioners, the framework can be used to gain insights into the contributing factors of information systems quality and its effectiveness in reducing corruption. □ 2005-2013 JATIT & LLS. All rights reserved.", "author": [{"dropping-particle": "", "family": "Ameen", "given": "Ali A.B.", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], {"dropping-particle": "", "family": "Ahmad", "given": "Kamsuriah", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Journal of Theoretical and Applied Information Technology", "id": "ITEM-1", "issue": "1", "issued": {"date-parts": [{"2013", "10", "8"}]}, "language": "en", "page": "59-72", "title": "A Conceptual Framework of Financial Information Systems to reduce corruption", "type": "article-journal", "volume": "54"}, {"uris": ["http://www.mendeley.com/documents/?uuid=b5e5b631-7b2e-429b-b16d-7ad69546dcce"]}, {"id": "ITEM-2", "itemData": {"ISBN": "978-981-15-3284-9", "abstract": "Firms' performance in terms of financial performance can be considered as an organizational innovation issue. For the reason being firms' performance is considered as a result of product innovation, process innovation and administrative innovation in developing and implementing effective ideas, the performance is crucially depending on effective organizational innovation. This research aims to examine the impact of organizational innovation (product, process and administrative. This means that incubating knowledge is an important factor to create innovative ideas and demonstrating them through a specific project. Knowledge-based absorptive capacity can point out the extent to which an enterprise can nurture this innovation."}

Knowledge Sharing empirically connected to incremental as well as radical innovation (Darroch, 2005; Darroch & McNaughton, 2002) 743 surveys were mailed out and 443 were returned and usable (27.8 percent response rate. Awareness of an enterprise's human capital as well as providing opportunities for employees for sharing of information as well as communication are termed as key necessities that facilitate the management of knowledge

(Prajogo & Ahmed, 2006). Some of the practices for knowledge-based human resources that encourage innovation can include appraisal and compensation practices (Cabrales et al., 2009), as well as providing new sources of knowledge and incentives that create new knowledge both in external as well as internal habitats (Mumford, 2000) fall under the scope of people management.

Hence, based on relevant practice, the adaptive of knowledge by employees and the resulting success and failure, add to the collaborative efforts of the team learning objective (Kolb, 1984). However, creating more mistakes can lead to more uncertainty and panic among employees (Courvisanos, 2012). Knowledge Sharing and its nurturing require stringent and robust assessment and evaluation of decisions and actions that can all be achieved through internal infrastructure. A hypothesis is therefore suggested:

H1: Knowledge Sharing has a positive effect on organizational innovation.

2.2 Organizational Innovation (OI)

Crossan & Apaydin (2010) defined innovation as the product of a deliberate and successful realization of a new idea that provides advantages to the firm. Moreover, it has a procedure from innovation as a result and recognizes three categorizations: process vs. product, radical vs. incremental, and technical vs. managerial

Numerous scholars and practitioners from varied fields have been showing increased interest in the innovation in the private universities (Borins, 2014; Brown & Osborne, 2013; Damanpour, Walker, & Avellaneda, 2009; Hartley, Sørensen, & Torfing, 2013; Osborne & Brown, 2011; Walker, 2014). There is growing endorsement in the belief that innovation can play a significant contributing role in improving the value of public services alongside also enhancing the problem-solving prowess of governmental outlets to tackle societal obstacles (Damanpour et al., 2009; Walker, Damanpour, & A. Devece, 2010). In many scenarios, private universities innovation has been lauded for spearheading reform movements like New Public Management (Hood, 1991; Llewellyn, 2009; Pollitt & Bouckaert, 2011) but that any critique which is to survive NPM's claim to 'infinite reprogrammability' must be couched in terms of possible conflicts between administrative values. The conclusion is that the ESRC'S Management in Government? research initiative has been more valuable in helping to identify rather than

to definitively answer, the key conceptual questions raised by NPM."author":[{"dropping-particle":"","family":"HOOD","given":"CHRISTOPHER","non-dropping-particle":"","parse-names":false,"suffix":""}], "container-title":"Public Administration","id":"ITEM-1", "issue": "1", "issued":{"date-parts":[["1991","3"]]}, "page":"3-19", "publisher":"John Wiley & Sons, Ltd (10.1111, e-governance (Bekkers & Homburg, 2005), the makeover-shift from government towards governance (Rhodes, 1996), and, presently, talks pertaining to the (minimizing) participation of government in a 'Big Society' (Lowndes & Pratchett, 2012).

There are also a lot of factors which prove to be a hindrance to private universities innovations. Chief among them is the lack of adequate financial motivation and the other is the lack of genuine competitors. Probably the most important of the lot is the lack and deficiency of adequate resources. This includes not just financial investment but also the lack knowledge sharing and Knowledge Sharing. Innovation requires adequate personnel to being about the necessary changes. There is also a lack of the opportunity to make use of supporting services (Bloch, 2011).

3. RESEARCH METHOD

3.1 Overview of the Proposed Conceptual Framework

Isaksen & Tidd (2006) highlight innovation as being the ability of the enterprises to identify the new technologies and current trends and by studying them closely enough to exploit the knowledge and information from them to create new technologies and processes. This essentially highlights the importance of the Knowledge Sharing as being part of innovation (Lichtenthaler, 2013). In figure 1, the conceptual framework is depicting the relations suggested by this study based on the literature review.

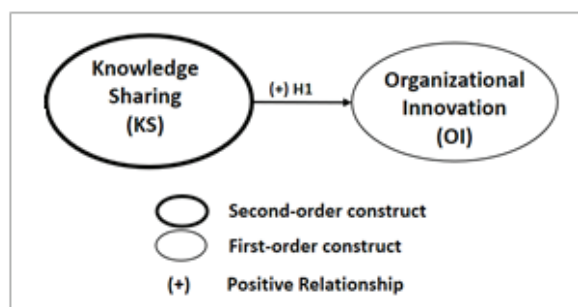


Figure 1: The conceptual framework

3.2. Development of Instrument and Data collection

This study has adopted questionnaires to collect data. It was divided into two sections, the first measuring six

core constructs using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (please refer to Appendix A for the instruments), while the second covered the demographic profile of respondents, measured using a nominal or ordinal scale. PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilizing the software SmartPLS 3.0.

4. DATA ANALYSIS AND RESULTS

PLS (Partial Least Squares) SEM-VB (Structural Equation Modelling-Variance Based) was employed to assess the research model by utilizing the software SmartPLS 3.0 (Ringle, Wende, & Becker, 2015). Analyzing Data through the second-generation multivariate data analysis technique which is SEM offers a simultaneous analysis which leads to more accurate estimates (Osama Isaac, Abdullah, Ramayah, Mutahar, & Alrajawy, 2018; Osama Isaac, Abdullah, Ramayah, & Mutahar, 2018; organisations, and nations driving growth and prosperity. However, there are countries such as Yemen which have very low internet usage rates and which see little economic, social and cultural progress as a result. Therefore, this study has developed an integrated conceptual model based the DeLone and McLean information systems success model (DMISM A. Ameen & Ahmad, 2014; A. Ameen, Almari, & Isaac, 2019; A. Ameen, Almari, Isaac, & Mohammed, 2019; Isaac, Abdullah, Aldholay, Ameen, & Ramayah, 2019; Sudhana, Ameen, & Isaac, 2020)there is limited evidence on how institutions can be strengthened. Evaluating the effects of specific reforms is complicated by the lack of exogenous variation in institutions, the difficulty of measuring institutional performance, and the temptation to “cherry pick” estimates from among the large number of indicators required to capture this multifaceted subject. We evaluate one attempt to make local institutions more democratic and egalitarian by imposing participation requirements for marginalized groups (including women).

4.1 Measurement Model Assessment

The individual Cronbach's alpha, the composite reliability (CR), The average variance extracted (AVE), and the factor loadings exceeded the suggested value (Kline, 2010"title":"Principles and practice of structural equation modeling","type":"book"},"uris":["http://www.mendeley.com/documents/?uuid=ce196a23-c1d7-4597-b1f4-9e6b546c0986"]},"mendeley":{"formattedCitation":"(K line, 2010; Hair, Black, Babin, & Anderson, 2010) as illustrated in Table 1.

Table 1: *Measurement model assessment*

Constructs	Item	Loading (> 0.7)	M	SD	α (> 0.7)	CR (> 0.7)	AVE (> 0.5)
Knowledge Sharing (KS)	KS1	0.879	3.657	1.024	0.922	0.942	0.763
	KS2	0.893					
	KS3	0.831					
	KS4	0.867					
	KS5	0.896					
Organizational Innovation (OI)	OI1	0.826	3.576	0.890	0.888	0.917	0.688
	OI2	0.862					
	OI3	0.860					
	OI4	0.858					
	OI5	0.734					

Note: M=Mean; SD=Standard Deviation, α = Cronbach's alpha; CR = Composite Reliability, AVE = Average Variance Extracted.

Key: KS: Knowledge Sharing, OI: Organizational Innovation.

The degree to which the articles distinguish among concepts or measure different constructs is demonstrated by discriminant validity. Fornell-Larcker was 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) Modern methods for business research (pp. 295-358. According to Hair et al. (2017), this indicates good discriminant validity. Furthermore, exogenous constructs have a correlation of less than 0.85 (Awang, 2014). Therefore, all constructs had their discriminant validity fulfilled satisfactorily.

Table 2: *Fornell-Larcker criterion*

	KS	OI
KD	0.923	
OI	0.782	0.874

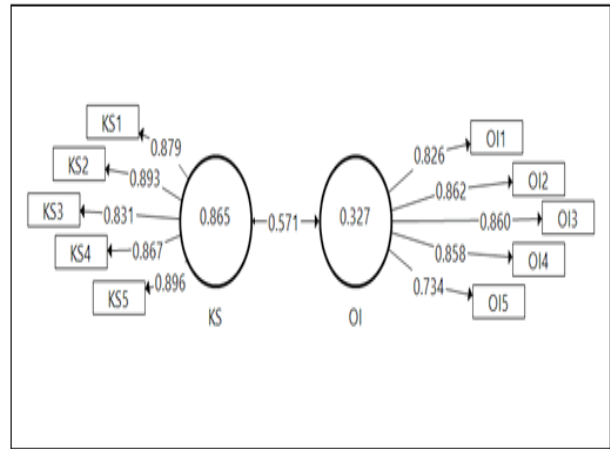
Note: Diagonals represent the square root of the average variance extracted while the other entries represent the correlations.

Key:KS: Knowledge Sharing, OI: Organizational Innovation

4.2 Structural Model Assessment

The structural model can be tested by computing beta (β), R^2 , and the corresponding t -values via a bootstrapping procedure with a resample of 5,000 (Hair, Hult, Ringle, & Sarstedt, 2017) by Hair, Hult, Ringle, and Sarstedt, provides

a concise yet very practical guide to understanding and using PLS structural equation modeling (PLS-SEM).



Key: KS: Knowledge Sharing, OI: Organizational Innovation

Figure 2: PLS algorithm results

Figure 2 and Table 3 depict the structural model assessment, showing the results of the hypothesis tests. Knowledge Sharing positively influence organizational innovation. Hence, H1 is accepted with ($\beta = 0.571$, $t = 14.354$, $p < 0.001$). Knowledge Sharing explains thirty-three percent of the variance in organizational innovation. The values of R^2 have an acceptable level of explanatory power, indicating a substantial model (Cohen, 1988; Chin, 1998).

Table 3: *Result of Direct Effect Hypotheses*

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	Decision	R^2
H1	KS→OI	0.571	0.040	14.354	0.000	Supported	0.33

Key: KD: Knowledge Sharining, OI: Organizational Innovation

5. Discussion

The main objective of the current study is to examine the impact of Knowledge Sharing in term of (knowledge development, knowledge sharing, and learning access) on the organizational innovation within the Private universities in Malaysia . One hypothesis was proposed to be examined.

H1 assumes that there is positive impact of Knowledge Sharing on the organizational innovation. Results revealed through the SEM analysis that Knowledge Sharing has a significant direct positive impact on the organizational innovation with ($\beta = 0.584$, $t = 14.896$, $p < 0.001$). Thus, H1 is achieved. The researcher examined the existing theories and literature and was able to establish a significant

relationship between knowledge management and innovation. Knowledge Sharing relates to organizational. The integration of better knowledgeable workforce in the Private universities will lead to enhanced integration and sharing of knowledge across all departments, allowing the human capital to learn new skills and be a part of the development. It also boosts productivity and innovation that in turn leads to new knowledge creation. In a similar fashion, the results of the research indicated that there is a significant impact of knowledge sharing on the innovation execution.

6. Limitation and Future Work

This study was conducted by the researcher in Malaysia and therefore its approach is limited. The researcher faced several limitations while conducting the study. Firstly, time was a great issue to complete the study with accurate results. While the researcher had an adequate time period to complete the study, time constraints were experienced since government entities were involved. The researcher was not able to get permissions easily to conduct the study.

After collecting the data, the researcher faced certain issues in analysing them since a few replies were inconsistent and in many cases it was understood that the respondents did not get the meaning of the questions. The researcher had to therefore spend time in making the respondents understand the questions in order to ensure accurate replies were received for analysis of data. The focus was on receiving the precise data that would enable the researcher to meet the aims and objectives of the research.

Although the researcher has presented a revised conceptual framework which is based on the data analysis and has undergone validation, it might be difficult to generalize the framework for other countries until it has been tested and validated for the said country. Although the good practices framework would act as a framework to help in the implementation.

In the opinion of the researcher there is a need to study the topic from the change management perspective since it has a significant impact on the innovation and creativity execution in any organization. Change management is an important aspect during implementation of innovative business processes and therefore if there is resistance to change it can have effects on the implementation. Therefore, there is a need to study change management

in detail with respect to innovation and creativity. Furthermore, it is also important to note that change differs from educational organization to hence the approaches to change management must be customized according to the requirements of the educational organization and thus the impact of change management needs to be studied and recorded further.

While the study was specific to the private universities organizations in Malaysia, the researcher has generalized the frame of reference such that the framework can be applied to a wider context. This was especially because the factors affecting the innovation and creativity execution vary from region to region. Additionally, the key actors and their roles and responsibilities have an impact on the tasks and activities that are carried out during the implementation of innovative business processes or during the development of new, innovative, technology-driven products and services.

7. Conclusion

The researcher conducted this study in view of the fact that more detailed picture about organizational innovation and their critical factors can statistically be investigated by using questionnaire method as it provides an insight into different views and opinions of organizational innovations. The proposed hypothesis was supported statistically. The conclusion derived from the present study is that knowledge management positively and significantly contributed to the organizational innovation within the educational organization sector in Malaysia. These factors are relatively important techniques that contributed to the innovation in the private universities in Malaysia, since their explanation of the total variance 32%. As a result, this study empirically reveals that private universities in Malaysia ought to critically employ the effective knowledge management practices (knowledge development, knowledge sharing, and learning access) (to cope with business environmental changes). The result further showed that Knowledge Sharing is important for private universities. Particularly in Malaysia. Results would give insights for private universities in Malaysia to improve the organizational innovation focusing on Knowledge Sharing management.

Appendix

Appendix A

Instrument for variables

Variable	Measure	Source
Knowledge Sharing (KS)	KS1: Our educational organization culture facilitates the sharing of information. KS2: Sharing of information is provided at all levels KS3: Through sharing of knowledge, we have retained top talent KS4: Sharing of knowledge has allowed our educational organization to build creativity. KS5: Our educational organization has tools in place to enable the sharing of knowledge across all individuals and teams.	(Amabile, 1983; Nonaka & Takeuchi, 1995; Youndt, Subramaniam, & Snell, 2004)
Organizational Innovation (OI)	OI1: Our educational organization always tries applying a new idea/technology at our organization. OI2: In our organization, new technology is adapted for improving the work processes. OI3: Our educational organization is quick to respond to the changing needs of its customer. OI4: In our organization, employees are hired on their creativity. OI5: In our organization, we believe in the open communication environment.	Sufian & Noor (2009) Khrwish (2011)

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Organizational humor, work space and time

HeeSun Kim

Department of Business Administration, School of Government and Business Administration
Yonsei University, Wonju, South Korea

Tel: +82 33 760 2315, E-mail: hs-kim@yonsei.ac.kr

Abstract

Organizational humor is generally perceived as a phenomenon that helps to develop happy feelings and positive workplace atmosphere. While humor may affect organizational members in diverse ways, the ambiguous nature of humor may create uncertainty and unexpected outcomes. In particular, humor used between organizational members during non-work time and space (including through technological mediums) may create further confusion to communicators. Connectivity between work colleagues may increase through the use of humor, as the light and fun nature of humor creates difficulties for individuals to disconnect. Findings suggest that such experiences via humor may slowly blur the boundary between work and personal life by creating confusion between what is work and non-work, and help to reconfigure the idea of time and space. In an age of hyper-connectivity, organizational humor may provide insights into how workers interact, and manage work and personal space and time.

Keywords

Boundaries, communication, Confucian values, connections, humor, Korean workplaces, organizational space.

Introduction

In an age of constant connectivity, workers experience continuous linkages to work and work colleagues through Information and Communication Technology (ICT). This has blurred the boundaries of work and worker relationships, where individuals are unable to fully separate personal and professional lives. Work may no longer mean 8 hours in office spaces. Continuous connections to work may seem to encourage productivity but it may also lead to inefficiency [25], as individuals are required to redefine when, where, and how they work. In this process, humor may be helpful to smooth communication processes and develop positive workplace relationships [9]. The ambiguous nature of humor means that individuals may respond to humor more easily than other communication medium as the fun and light nature of humor serves as a safety mechanism in organizational interactions [20]. Boundaries in terms of work and work relationships may be pushed through humor [38], and thus humor may help to understand how individuals respond to the changing work environment in terms of work time and space. This study attempts to explore the relationship between humor and boundaries, and provide insights into the changing definition of work and personal

time and space, through investigating three South Korean (hereinafter Korean) workplaces.

Literature Review

Organizational humor

Organizational humor is a contextual phenomenon [1] that is perceived as a form of interaction that provokes enjoyment and laughter to users [5][39]. However, humor may be difficult to define. Humor may be described as a mental process that identifies a feeling of amusement, leading to other emotional outcomes [32]. However, humor may also be suggested as a multi-faceted phenomenon which includes unexpected situations, amusement, laughter, but also negative feelings [37]. Despite such complexities, humor may be an effective communication medium by delivering the communicator's intent [20].

Organizations often emphasize the positive role of humor in the workplace, and thus humor is frequently encouraged to be used between workers [35]. Humor may help to develop interpersonal relationships by emphasizing similarities and constructing positive experiences. Cooper's relational process theory (2008) suggests that humor may help to influence the quality of organizational relationships through processes of affect-reinforcement, similarity-attraction, self-disclosure, and hierarchical

salience. This means that individuals may develop positive work relationships regardless of hierarchical differences, as they create a feeling of similarity and attraction through laughter [36], while also sharing a non-work (humor preferences) aspect of their individual identity [9].

Humor may also perform diverse roles within the workplace. This includes developing social norms [16] (Duncan, 1985), cultivating identities, and reinforce power relations [21]. Humor may be used as a medium to display authority and control [33], but also a way to contest management [38]. However, as past experiences, relationship between communicating individuals, and underlying cultural values of the communicators shape how individuals understand a particular humor interaction [13], the outcomes of humor may be unpredictable, and individuals may interpret the same humor instance differently [40]. Formality and organizational constraints may be blurred through humor [43] and at the same time ensure safety of workers who contest such boundaries[20] (Holmes, 2000) by utilizing the ambiguous nature of hour that embeds both fun but dark contents[31] (Martin, 2003). Regardless of the intention of the joker, sharing laughter through humor may help individuals to develop familiarity [6] by finding similarities and emotional connections with others [8].

While humor interactions are highly influenced by the communicators and their cultural values, organizational humor is also affected by the organizational [37] and societal culture [11]. Values and beliefs of the wider society influence how individuals communicate and structure their relationships, and thus leading to different approaches towards humor [1]. In particular, humor perception between Western and Eastern contexts seems to differ, where humor is perceived as positive in the Western contexts, but humor is often considered as an uncommon interpersonal characteristic in Eastern contexts [45][46]. This may depend on the different cultural values and how interpersonal relationships are structured. For example, many East Asian countries are influenced by Confucianism which values hierarchy and harmony [44]. Appropriate communication depends on the relational status (hierarchy) of the communicators, where obedience [41] and silence [29] is recommended for those in lower hierarchical positions. Hence environmental factors should be considered [12] which may include cultural or other contextual influences to humor in the workplace [23].

Therefore, humor may be an inappropriate behaviour within East Asian contexts, such as Korean workplaces. Similar to other East Asian cultures influenced by traditional Confucian values, Korean society values hierarchy and harmony [15], and humor may be considered as an informal form of communication that harm the hierarchical structure within the society[7]. However, this does not mean humor does not exist in Korean organizations. Studies such as Lee (2015) and Kim and Lee (2016) show that humor occurs actively in Korean workplaces, and especially by those in managerial positions. Therefore, humor is not simply rejected with Korean workplaces, but perceptions towards humor are highly dependent on the context- especially between ‘work’ and ‘non-work’ situations.

Work space and time

Development of technology and the increase in remote work (work from home) have shifted the idea of work space. Individuals are no longer bound to the physical office to perform work tasks, and have expanded the boundary of work to their homes. The use of ICTs means that individuals may connect to work anywhere and at any time. While this change suggests that individuals may be able to gain flexibility in where and how they work, it also means that workers are (potentially) constantly connected to work regardless of their intentions.

The idea of work ‘space’ describes physical space such as office structure and building, but also includes the notion of private (personal) and public (work) areas where individuals can work. Baxter and Kroll-Smith (2005) suggests that the boundary between work and private space also correlates with time, where work space links with work time and private space with personal time. Traditional notion of work and space were clearly divided and thus ideas of private and public space were portrayed as two ends of a continuum [4], and only a few professional occupations such as medical doctors were considered to have more flexible, but integrated life [47]. However, the work environment is rapidly changing (i.e. due to Covid-19) and this need of flexibility is now a necessity for most workers. Flexibility in this sense does not only mean work is taken to home settings- but ‘personal’ activities such as taking naps are also introduced to work space[3][14] to further blur the boundary between work and private space.

Virtual work environments may be created by adopting technological mediums at home (such as online

meetings) and this may surpass the traditional idea of work ‘space’. Workers mentally construct the idea of work with their colleagues through online connections and collaborations, to build trust and surveillance that act as a source of control for work performance [28]. This means that this subjective experience of workers of being connected with other workers alters the notion of work space, and individuals may experience their private homes as work space indifferent to company offices. Baxter and Kroll-Smith (2005) suggest that behaviors which were traditionally identified as deviant behaviour may be the key to reconfigure the relationship between home and work, and private and public space and time. Such change may assist in creating more flexible work environment, which may serve an important role in times of organizational change.

Taylor and Spicer (2007) summarize the idea of organizational space into three areas of physical distance, display of power relations, and lived (subjective) experience. Under this integrated review, organizational space may no longer mean physical walls, desks, and building. Organizational space may display ideas of power and surveillance between workers, where each individual may experience and create ‘space’ differently. Therefore, organizational space embeds physical, relational, and subjective interpretations than the traditional static view of space [17].

Humor, boundaries, and work space

Martin’s (2004) study of women in middle management suggests that workers may bring in their non-work role (i.e. mother) into the workplace through humor, in order to cope with the organizational role. This suggests that while non-humorous communication that reflects individual’s personal role may be perceived as unprofessional, humor may help to blend these identities and spaces to the joker’s advantage. Similarly, Heiss and Carmack (2012) suggest that humor may be an effective medium to adjust to organizational change, and make sense of new norms between workers.

Digital environment provides a new form of decontextualized platform where there are higher chances of misinterpretation of information between individuals [18]. This problem also applies to humorous interactions, and thus the online medium used by many companies may deepen existing social gaps. Organizational members that experience new platforms of work are required to adjust and find the ‘right’ way to work. For example,

while organizational negotiations may traditionally be performed in person, problems such as distance and time have force workers to negotiate online instead. Kurtzberg, Naquin, and Belkin (2009) suggest that the quality of interpersonal relationships between negotiators may be enhanced through the use of humor via e-mail prior to the negotiation, to increase trust and satisfaction between the negotiators. Similarly, Imlawi and Gregg (2013) suggest that the use of humor through online social networks helps to increase user engagement, as the humorous post serves as a form of self-disclosure that improves the writer’s credibility. Therefore, humor interactions may help individual to communicate and work more effectively outside the traditional office space, by creating a sense of ‘sharing’ (information or relationship) and extending the boundaries of work and personal life.

Methodology

This study adopts a qualitative research approach to investigate humor interactions and perceptions in different work spaces. In particular, multi-voiced interpretivist approach [2] [10] is used to explore diverse interpretations of humor by individuals, and to capture their unique perceptions in humor events. Participant observation and semi-structured interviews were used to collect data across three Korean organizations. For anonymity purposes, these three participant companies were renamed as Truscene, Mintrack, and Wisepath. The researcher spent 1 month in each of the participant companies (in full emersion) to observe humor instances and participant behaviour. Duration of the interviews was approximately 1 hour per participant, and questions with regards to workplace humor interactions, individual perceptions in diverse situations, and cultural values were asked. All participants were provided with information sheet and consent form about the research, and all communication with the participants were conducted in Korean language. Individual participants were also given pseudonyms, and a total of 46 individuals were interviewed across the three companies. Details of the participant companies and interview participants are summarized below.

Table 1- Summary of participant companies

Compa-ny	Industry	Size	Employee’s age group (range)
Wisepath	Manufactur-ing	63	20 - 60
Mintrack	Online Gam-ing	33	20 - 60

Truscene	Information Technology	49	20 - 40

Table 2- Details of interview participants

Company code name	Wise-path	Min-track	Truscene	Total
Gender				
Male	5	10	20	35
Female	2	4	5	11
Age range				
Below 30	0	7	12	19
30- below 50	2	7	13	22
50 and above	5	0	0	5
Organizational hierarchy				
Junior staff	4	7	15	26
Middle manager	0	7	9	16
Senior manager	3	0	0	3
Top management	0	0	1	1

The data was recorded using field notes and audio recording methods, and then transcribed after the data collection period. The collected data was then analysed using thematic analysis to outline themes and categories that illustrates unique stories. Data analysis was conducted in four steps, where initial analysis occurred during the data collection period. Second, the analysed categories were organized for each of the participant company after the data collection period. Third, data across the three participant companies were combined and coded, and last, themes were arranged and some recoding of data was conducted using NVivo program.

Findings

Context

The organizational culture and characteristics of the participant companies provide important information in understanding the data, as context influences worker perceptions and behaviors significantly. The three participant companies operate in different industries and have different organizational culture. First, Wisepath is an Information Technology (IT) company with 49 workers, and the workers were observed to use some humor in the workplace. However, this was limited to those in superior positions, or shared between individuals at the same

hierarchical level. Second, Mintrack is an online gaming company with a relatively young average age. With 33 workers, employees in Mintrack used humor most actively across the three participant companies. While the style of humor differed, individuals at diverse hierarchical levels employed humor in everyday conversations. Last, Wisepath is a manufacturing company that operates two different divisions of factory and office. With a total of 63 workers, Wisepath displayed most patriarchal behaviors, such as using full honorifics to seniors and showing full obedience to managers.

Themes and categories

Three broad themes emerged from the collected data. First theme *deviant behaviour* discusses how humor is perceived as an inappropriate behavior within the workplace, and may harm professionalism and productivity. Second theme *uncertain and situational humor* suggests that individuals may interpret humor instances differently according to the context, and also create various uncertainties especially in unfamiliar situations. Last theme *social co-creation* discusses how humor interactions may help to reconfigure the idea of space between the interacting individuals by temporarily altering the quality of interpersonal relationships. These are deviant behaviour, uncertain and situational humor, and social co-creation. Table 3 below provides a summary of these themes.

Table 3- Themes

Themes	Description
1. Deviant behaviour	Humor is perceived as an inappropriate workplace behavior
2. Uncertain and situational humor	Interpretations of humor can differ according to the situation, and thus create uncertainty in different contexts
3. Social co-creation	Humor may help to socially redesign space and interpersonal relationships by blurring work-personal boundaries

Deviant behaviour

In discussing humor used within the organizational context, participants suggested that although humor occurs within the workplace, it is generally perceived as a negative behaviour that is incongruent with the societal cultural expectations. 37 interview participants suggested that humor is an inappropriate form of communication within the workplace:

Humor isn't crucial. Not having it won't stop you from having decent conversations

Turquoise, 35, Truscene

Work is the focus, when you come into work. Not things like humor and joking around.

Opal, 24, Mintrack

Examples above imply that humor and work does not fit well, and is an unnecessary part of organizational communication. Similarly, another participant suggested that humor does not fit with Korean culture:

It doesn't fit with Korean culture. A workplace needs to be formal. Mixing (humor) with work makes you look arrogant, so it doesn't suit workplace settings.

Agate, 30, Truscene

Agate discusses humor as an unfavourable personal characteristic t work (*'makes to you look arrogant'*), and also implies that within Korean culture, workers should behave in a humble manner.

Uncertain and situational

Although many participants suggested that humor should not be used in the workplace, 233 humor instances were observed across the participant companies. However, how humor should be used seemed to differ according to the situation, such as in formal and informal situations. Humor may be interpreted differently according to the context or space, and thus lead to uncertain outcomes. 11 participants suggested that there are situational boundary differences in using humor, especially depending on work or non-work hours:

Work is usually formal and serious [...] so people usually joke during lunchtime, breaks.

Citrine, 33, Mintrack

The interviewee suggests that work hours should involve communication that is *'formal and serious'* (thus no humor) but non-work hours such as *'lunchtime'* and *'breaks'* are considered as appropriate situations to use humor. Thus, this implies that humor may be approached and interpreted differently according to the when and where humor is used- whether its during working hours and within work spaces- or not. However, this division is unclear and rather confusing.

This confusion is suggested to create uncertainty in humor outcome and approaches to humor. 28 interview participants suggested that the different interpretations to humor seem to escalate outside the office space.

Expectations towards humor were suggested to change outside the physical office space. One of the interview participants explains his confusion in understanding humor communication in diverse work space and hours:

During work, it's not good to use humour because then you can't concentrate. But when we go out for coffee or something, then I like the whole liveliness and joking and all. But then again when it's associated with work, I don't like the loud and lively... no, I do like it. It's kind of confusing.

Peridot, 31, Mintrack

One of the observation examples also illustrates how workers may respond to humor interactions in ambiguous situations. This example involves workers at Mintrack attending a company 'workshop' during the weekend. This workshop involved young workers spending two days at a holiday house to play games, drink alcohol, and socialize. All expenses were paid by the workers and no support was provided by the company. This particular example focus on the behaviour of Tourmaline, a young male worker that was frequently pranked (target of humor) within the workplace:

While everyone is still eating and drinking in the outdoor BBQ area, Diamond stands next to the BBQ grill, where Iolite is cooking the last few sausages left. They discuss about religion, and Diamond suddenly questions Iolite in a loud voice, holding up a bottle of beer in his hand.

Diamond: Of course I believe in God! I was born a Christian! Do you even know who Abraham is?

Tourmaline: Lincoln.

Tourmaline, who is passing by the BBQ grill with an empty plate in his hand answers Diamond's question. Diamond looks startled, as Tourmaline has suddenly appeared behind him. Diamond and Iolite frown, stare at Tourmaline for a few seconds, and both laugh hysterically. Diamond nearly drops his beer bottle, and then grasps the bottle with both hands while breathing heavily in an exaggerated way. Iolite laughs while shaking his head from side to side, as if disapproving of the situation, but continues to cook the sausages on the grill.

May 23, Mintrack Observation notes

In the above example, Tourmaline voluntarily responds and engages in humor with his seniors (by saying 'Lincoln' to Diamond's question and creating an incongruity). In normal workplace situations (i.e. in office) Tourmaline

does not react to any humor initiated by the managers, even if he is the target of the joke. Therefore, such abrupt engagement may not be acceptable to Diamond and Iolite who are positioned at a more senior level than Tourmaline. However, rather than rejecting Tourmaline's statement, Diamond and Iolite both laugh and signals consent to Tourmaline's action. This observation suggests that humor initiated in non-work space may be used and interpreted differently to normal work situations, and thus influence the boundaries of work and non-work relationships.

Social co-creation

The third theme discusses how humor interactions may help to reconfigure the idea of space between interacting individuals by using the 'light' nature of humor, and allow individuals to interact smoothly. For example, one interviewee explains how humor used during work hours and space leads to a non-work engagement, as her superior jokes about her personal issues which would not usually be shared within the workplace:

The CEO talks a lot about my age, and when I will get married. I guess he's concerned about my personal life (marriage), so he often comments about it in a jokingly way. Honestly, he's just using humor to be nosey about my personal life [shakes head], but because he's laughing and joking, it seems weird to get back at him.

Citrine, 33, Mintrack

Citrine suggests that the CEO uses humor to talk about her 'personal life' which is unrelated to work. Citrine also displays body language that seems to disapprove the CEO's jokingly action ('shakes head'). Although this humor interaction did not seem to lead to an aggressive conflict, it implies that the uncomfortable humor used by the CEO creates a temporal space outside of work. Similarly, another participant describes an experience where a manager's text message after working hours creates a sense of 'work' even at home:

Sometimes the manager sends us a funny link (webpage). Sometimes it's funny, sometimes not so much. It's not work, but I still have to respond back even during weekends. At least a short phrase like LOL (laugh out loud- original translation 'ㄹㅇ' which describes a laughing sound)

Topaz, 24, Truscene

This example suggests that when superiors contact subordinates after working hours (i.e. weekends), subordinates are unable to completely separate themselves from their work roles, but feels obligated to respond as a 'subordinate'. This immediate shift in roles (from personal to professional) implies that humor may play a

complex role in merging work and personal space. While the casual nature of humor may feel as if it is not work ('it's not work'), the fact that this perception (that it's not work) persuades Topaz to connect with his manager implies that humor may perform as a 'lure' to increase connections between workers during personal time. Another interviewee explains his experience of how this blurred boundary may affect his week:

We joke, talk about dating and non-work stuff. It's fun [...] then it leads to us meeting during the weekend, go for a drink, karaoke. Then back to work on Monday.

Turquoise, 35, Truscene

By enjoying humorous interactions with work colleagues, participants above imply that such casual or light-headed conversations lead to increased amount of connections with other workers, and even sharing personal time ('during the weekend').

Discussion and Conclusion

Humor is a contextual phenomenon that may be interpreted differently within organizations [1]. This study suggests that although humor may not be a preferred form of communication within the wider Korean society, humor occurs actively within organizations to help blur workplace boundaries. Within the studied workplaces, humor is perceived as a non-work behaviour that crafts a sense of personal time and space, regardless of the physical location of the communicator. This extends Baxter and Kroll-Smith's (2005) study of public and private space and time, where traditional non-work behaviour becomes normalized within organizations to help blur boundaries of appropriate behaviors at work. Humor observed in this study not only changes the idea of appropriate workplace behaviour, but also contributes to developing workplace relationships beyond that of work colleagues by increasing the level of interaction between individuals after working hours and outside of work space. The 'fun' nature of humor means that workers may connect whenever and wherever more flexibility, and subconsciously merge work and private time and space.

This may be significant as the increased need to work from home, and adopt flexible working hours have creased problems in terms of balancing work and life, where individuals desire to separate their work and personal domains. However, this separation may be difficult, and from the organizational perspective, increasing the connectivity of workers to work may be necessary in maintaining work performance in an era of change. Therefore, utilizing humor may help to subconsciously connect workers with the organization, and blur the work-private life boundary in both time and space. Humor may

help to understand the process of boundary recreation (work and personal space and time) and the risks involved in using humor as a method to reconfigure time and space for workers. The ambiguous nature of humor means that humor may be interpreted differently and thus result in unintended outcomes, especially when the humor interaction occurs in unfamiliar spaces (such as online).

There are various limitations to this research. First, the qualitative nature of this study means that the findings may not be generalizable to other Korean organizations. Second, as only three companies were examined for a short (1 month) period of time, investigating a larger number of companies for a longer duration may help to understand humor and space further in depth. Future research may consider these limitations and study a larger number of company, and perhaps those in other Confucian-based cultures (such as Japan or China) to analyse the influence of Confucian values to humor interactions in East Asian contexts. Furthermore, developing a quantitative research design may also help with increasing the generalizability of the research findings.

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Employees' intention to leave job – The case of Micro finance institution

Rabin Subedi^a, Dr.Surendra Neupane^b and Raju Ram Adhikari^c

^a PhD Scholar, Lincoln University College, Malaysia (Email-rusubedi3@gmail.com)

^b Tribhuvan University-Lincoln College, Kathmandu (Email-snpworld3@gmail.com)

^c PhD Scholar, Tribhuvan University, Nepal

Abstract

The main purpose of this study is to examine the factors that influence the employee's intention to leave the current job. A descriptive survey design was conducted and primary data were collected by using questionnaire. The study was based on random sampling; a sample of 200 was drawn from the employees who work in different micro finance institutions in Nepal. For the data analysis percentage analysis and chi square-test were used. The study revealed that salary, working condition, career growth, supervisor behavior and outstation influence the job quitting process. The study also defined the association between the reasons for leaving job such as salary, working condition, career growth supervisor behaviour & outstation and satisfaction, time spent in the organisation, training & development facility, frequency of changing job & encourage from immediate boss. This study establishes the importance of intentions of employees to quit job and provides further evidence in revealing the intentions to quit among the employees.

Keywords

Turnover, retention, job, reasons, microfinance, intention

Introduction

Managers in microfinance institutions are focusing the human as an intellectual capital and implementing policies, strategies and processes to satisfy them. They know human resource is prepared through different human resources practices such as, appropriate remuneration packages, training and development, work life balance, flex working hours, flex places, good working environment, effective communication so that the employee feels comfortable, which helps to retain employee in current organisation and minimize employees turnover. Generally employee turnover is the proportion of a firm's workforce that leaves the job cause of different factors during the course of a year.

Large numbers of factors that seem to be repeatedly associated to employee turnover in micro finance institutions in Nepal. Turnover intention is one's behavioural intention to quit. The turnover intention among microfinance employees refers to the conscious and deliberate effort of the employees to leave the microfinance institution. Employee turnover occurs when employees leave/quit their jobs. The number of employees that leave the organisation largely determined by pay, promotion, the work itself, working condition, tenure, satisfaction, encourage from immediate boss, work

load and salary, training and development, behaviour of supervisor, out station and career growth.

Employee turnover has become a worldwide issue that has puzzled organizations, researchers and practitioners for years. Currently, employee turnover permeates most of the organizations in both developed and developing countries (Tariq, 2013). Employee turnover can be conceptualized in terms of different categories which include: demographic (e.g. gender, age, educational level), occupational (e.g. skill level, experience, tenure, status), organizational related factors (e.g. firm size, industry, job content, working environments, style of leadership, type of organizational structure, pay scale, reward, advancement opportunity, job security and job involvement (CIPD, 2011).

Some employee may leave their job because of lack of freedom while they work. However, even with the widespread recognition of the importance of facilitating the relationship between job satisfaction and motivation in facilitating organizational commitment, there are varying perspectives on the means of doing this. The earliest strategy is to use wage increases to link job satisfaction and motivation to organizational commitment (Ellickson, 2002). In the words of Asad, Jorge and Bhupesh Kumar in their study on employee' intentions to resign from

job in luxury hotels in India where they considered two aspects; firstly, the employees' enthusiasm for the profession and organization, the nature of the work and its impact on social and family life and Secondly, their level of satisfaction with the job in terms of organizational loyalty, relationship with supervisors, job security, earnings and additional benefits. They suggested that when considering intentions to resign from the job, a negative relationship is found between professional and organizational enthusiasm and perceptions about the work being stimulating. No support was found for a positive relationship between the extent work impacted social and family life and the intention to quit. However, results supported the notion that the employees' organizational loyalty has a negative effect on their intention to resign from the job (Asad Mohsin, 2013).

Training is crucial and fruitful for both employee and organizational improvement. Employee training provides prospects to employees broaden their knowledge and capacities. When employees attended to training programs, they achieve self-confidence to perform their jobs, they observe career development opportunities and they think that companies make investment in them. As result of this positive situations, employee satisfaction increases. Many authors claim that job training is an important predictor of employee positive attitudes (Schmidt, 2007). Milne reported that rewards and recognition are two useful tools that are applied in different organizations to appreciate the hardworking employees for their job performance and for their effective contribution to the overall organization's achievement. The extrinsic rewards are those that the employees receive from their organizations as a kind of gratitude and appreciation of their excellent performance. Extrinsic rewards can be offered in different forms such as promotion opportunities or outstanding performance appraisal (Milne, 2007). The employee turnover also creates negative influence to the organization's performance if the management cannot be fully aware and manage in terms of work load of employees. The decision to leave of one employee may cause pressure and bad emotional effect to the remaining employees since they may feel stressful about the workload or think that the company may in unstable status (Beardwell, 2014).

Most of the scholars emphasized that the lack of job satisfaction led to think about quitting current job. According to Chan M. Hellman on the study on Job Satisfaction and Intent to Leave, concluded that the

relationship between job satisfaction and intent to leave was significantly different from zero and consistently negative. Furthermore, across levels of job satisfaction, employees from a large U.S. federal agency were less likely than employees within the private sector to leave the organization. Subsequent analyses on the federal agency studies showed that career stage indicators (age and tenure) moderated the relationship between job satisfaction and intent to leave (Hellman, 1997).

The experience of job related stress ,factors that lead to job related stress, lack of commitment in the organisation; and job dissatisfaction make employees to quit (Hassan, 2016). The job satisfaction and organizational commitment has organic relationship with intention to leave organization and profession, and these two phenomena relate to intention to leave consistently through almost all determinants and outcomes. The study suggested that by intentionally bringing satisfiers and commitment stimulators, organizations can benefit by controlling or eliminating such intentions totally, as they have dangerous effects on individual and organizational performance. (Halwai, 2014). One study from Pakistan tried to fill up gap by exploring the turnover intentions of female employees in the commercial banks of Faisalabad, Pakistan. Intent to quit has been tested empirically for its association with work-to-family conflict and family-to-work conflict. The analysis proved that intent-to-quit is positively and significantly associated with work-to-family conflict and family-to-work conflict. (Saira Ajaz, 2015).

Inefficient organizations have a high level of staff turnover (Tziner, 1996). Therefore, in different situations where organizations are not stable, employees tend to quit and look for stable organisations because with stable organisations they would be able to predict their career advancement. The imposition of a quantitative approach to managing the employees led to dissatisfaction of staff and hence it leads to labour turnover. Therefore management should not use quantitative approach in managing its employees (Morrell, 2004).In the case of academic institution, pay and supports were significant and negatively related to faculty intention to quit behaviour in any condition. However, the relationship of job security and faculty intention to quit depends on control variables (Mohd Hasanur Raihan Joarder, 2015). If high performers are insufficiently rewarded, they quit. If jobs provide adequate financial incentives the more

likely employees remain with organization and vice versa. There are also other factors which make employees to quit from organisations and these are poor hiring practices, managerial style, lack of recognition, lack of competitive compensation system in the organisation and toxic workplace environment (Griffeth R. W., 2000).

More factors contribute to high employee turnover in the sense that there is no proper management practices and policies on personnel matters hence employees are not recruited scientifically, promotions of employees are not based on spelled out policies, no grievance procedures in place and thus employees decides to quit. There is a crucial need to have more comprehensive studies on the factors that influence the intention to quit among micro finance employees. The results of this study will give a new perspective to the findings of the previous studies on the issue of intention to quit of the micro finance employees. The significance of this study was to extend or contribute to the existing knowledge of employee turnover in the micro finance industry. The main purpose of this research is to explore the factors influence the intention to quit among micro finance employees in Nepal. The study also examined the relationships between reasons for leaving job and time spent in current organization, work load and salary, training and development, encourage from immediate boss, frequency of changing jobs and satisfaction. Therefore, research on intention to quit job can help the organization to identify main factors that can contribute to the turnover intention and rate of turnover. Based on finding of study an organization can make remedy action in order to create favourable working conditions that can enhance the rate of retention and minimize the job leaving phenomena.

Methods

This study was based on the descriptive and exploratory research design. Total 200 respondents were selected through simple random sampling technique. Questionnaire was administered for collecting data. For the data analysis percentage analysis and chi square-test were used.

Result and Discussion

The reasons for quitting job such as low salary, bad working condition, low career growth, supervisors behaviour, out station and job switching factors such as satisfaction from the job, encourage from immediate boss, work load and salary, training and development facility, time spent on previous job were analysed. Also the association between reasons for leaving job and

time spent in current organisation, work load and salary, training and development facility, satisfaction, encourage from immediate boss & frequency of changing job were tested.

Table No. 1: Job switching factors

Variables	Group	Frequency	Percentage
Satisfaction	Fairly satisfaction	64	32
	Dissatisfaction	28	14
	Satisfied	98	49
	Completely satisfied	10	5
Encourage from immediate boss	Not at all	19	9.5
	Sometimes Yes	96	48
	Always	65	32.5
	Usually not	13	6.5
	Neutral	7	3.5
Work load and salary	Yes	58	29
	No	142	71
Training and development facility	Yes	152	76
	No	48	24
Time spent on previous job	Before 3 months	16	8
	3 – 6 months	26	13
	7 – 12 months	43	21.5
	13 – 24 months	13	6.5
	2 – 3 years	23	11.5
	4 – 5 years	8	4
	Over 6 years	5	2.5
	First job	66	33
Frequency of changing job	0	66	33
	1	62	31
	2	52	26
	3	15	7.5
	4	4	2
	5	1	0.5

Source: Field survey, 2019

According to field data, 32% were fairly satisfied with their job, 14% were dissatisfied from their job, 49% were satisfied from their job and 5% were completely satisfied from their job. Similarly, 9.5% were not getting encouragement from immediate boss, 48.0% were getting some level of encouragement, 32.5% were regularly getting encouragement, 6.5% were usually

not encouraged by their immediate boss and 3.5% were neutral about it. The field data also revealed that 29% felt that there was perfect match between work load and salary, whereas 71% were not satisfied with work load and salary. The field data also showed that 76.0% of respondents were getting training development facility and 24.0% were not getting training and development facility. Whereas 8.0% left their previous job before 3 months, 13.0% left in between 3 – 6 months, 21.5% left their previous job in between 7 – 12 months, 6.5% left their previous job in between 13 – 24 months, 11.5% left their previous job in between 2 – 3 years, 4.0% left their job in between 4 – 5 years, 2.5% worked for over 6 years in their previous job and 33.0% were doing their first job similarly 33.0% haven't changed their job, 31.0% have changed their job 1 time, 26% changed their job 2 times, 7.5% changed their job 3 times, 2.0% changed their job 4 times and 0.5% changed their job 5 times. The result reveals that the majority of respondents were satisfied from their job but there was a room for dissatisfaction, employees were getting some level of encouragement but they were expecting more encouragement from their boss in regular basis, employees were feeling discomfort with work load and salary, majority were getting training and development facility, minimum number of respondents were working long term in a single organisation, and there was high frequency in changing job.

Table No. 2: Reasons for leaving previous job

Factors	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%
Salary	102	51	61	30.5	21	10.5	11	5.5	5	2.5
Working condition	48	24	92	46	29	14.5	21	10.5	10	5
Career growth	58	29	98	49	29	14.5	11	5.5	4	2
Supervisors behaviour	28	14	98	49	51	25.5	16	8	7	3.5
Out station	27	13.5	99	49.5	54	27	12	6	8	4

Source: field survey 2019

The data depicts that 51.0% of respondents were strongly agree, 30.5% were agree, 10.5% were neutral, 5.5% were disagree and 2.5% were strongly disagree with their salary. Similarly, 24.0% were strongly agree, 46.0% were agree, 14.5% were neutral, 10.51% were disagree and 5.0% were strongly disagree with their working condition. According to data, 29.0% were strongly agree, 49.0% were

agree, 14.5% were neutral, 5.5% were disagree and 2.0% were strongly disagree with their career growth in current organisation. Whereas 14.0% were strongly agree with the behaviour of supervisors, 49.0% were agree, 25.5% were neutral, 8.0% were disagree and 3.5% were strongly disagree. For the outstation working area, 13.5% were strongly agree, 49.5% were agree, 27.0% were neutral, 6.0% were disagree and 4.0% were strongly disagree. The above table reveals that the employees getting satisfactory salary from their organisation, majority were agreed for working condition, employees always looking for career growth opportunity in the job, the support from supervisor plays the major role in the organisation and out station job also influence the leaving process.

Table No. 3: Association between reasons for leaving job and time spent in current organisation, work load and salary and training and development facility

Reasons	Pearson Chi square (Time spent in current organisation)			Pearson Chi square (work load and salary)			Pearson Chi square (Training and development facility)		
	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)
Salary	29.639 ^a	16	.020	4.410	4	.353	9.026	4	.060
Working condition	33.069 ^a	16	.007	3.057	4	.548	8.314	4	.081
Career growth	37.222 ^a	16	.002	1.979	4	.740	7.317	4	.120
Supervisors behaviour	24.433 ^a	16	.080	3.130	4	.536	11.757	4	.019
Out station	21.077 ^a	16	.176	3.615	4	.461	3.968	4	.410

Source: Field survey 2019

The computed value of Chi-square statistic between times spent in current organisation and reasons for leaving job is compared with table value for 5% level of significance. Since the calculated value for salary ($0.05 > 0.020$), working condition ($0.05 > 0.007$) and for career growth ($0.05 > 0.002$) is less than the table value and for supervisor behaviour ($0.05 < 0.080$) and for out station ($0.05 < 0.176$) is higher than the table value. Similarly for work load & salary and reasons for leaving job, since the calculated value for salary is ($0.05 < 0.353$), for bad working condition ($0.05 < 0.548$), for career growth ($0.05 < 0.740$), for supervisor behaviour ($0.05 < 0.536$) and for out station ($0.05 < 0.461$) is higher than the table value. For training and development facility and reasons for leaving job, the calculated value for salary ($0.05 < 0.060$), for working condition ($0.05 < 0.081$), for career growth ($0.05 < 0.120$)

and for out station ($0.05 < .410$) is higher than the table value and for supervisor behaviour ($0.05 > 0.019$) is less than the table value. So there was significant relationship between time spent in current organization and salary, working condition & career growth of employees and not significant relationship supervisor's behaviour and out station. Similarly, there was not significant relationship between work load & salary, and reasons for leaving jobs. As well as there was not significant relationship between training and developments and salary of employees, working condition, career growth and out station of job and significant relation with supervisor behaviour.

Table No. 4: Association between reasons for leaving job and satisfaction, encourage from immediate boss, frequency of changing job

Reasons	Pearson Chi square(satisfaction)			Pearson Chi square(Encourage from immediate boss)			Pearson Chi square (frequency of changing job)		
	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)
Salary	42.287 ^a	12	.000	37.169 ^a	16	.002	28.430 ^a	24	.242
Working condition	32.894 ^a	12	.001	34.227 ^a	16	.005	60.431 ^a	24	.000
Career growth	19.793 ^a	12	.071	30.050 ^a	16	.018	49.535 ^a	24	.002
Supervisors behaviour	17.350 ^a	12	.137	18.476 ^a	16	.297	41.931 ^a	24	.013
Out station	14.765 ^a	12	.255	27.199 ^a	16	.039	32.136 ^a	24	.124

Source: Field survey, 2019

The computed value of Chi-square statistic between satisfaction and reasons for leaving job is compared with table value for 5% level of significance. Since the calculated value for salary ($0.05 > 0.000$), for working condition ($0.05 > 0.001$) is less than the table value and for career growth ($0.05 < 0.071$), for supervisor behaviour ($0.05 < .137$) and for out station ($0.05 < .255$) is higher than the table value. Similarly encourage from immediate boss and reasons for leaving job were compared. Since the calculated value for low salary ($0.05 > .002$), for working condition ($0.05 > .005$), for career growth ($0.05 > .018$) and for out station ($0.05 > .039$) is less than the table value and for supervisor behaviour ($0.05 < .297$) is higher than the table value. And for the frequency of changing job and reasons for leaving job, the calculated value for salary ($0.05 < .242$) & for out station ($0.05 < .124$) is higher than the table value and for working condition ($0.05 > .000$),

for career growth ($0.05 > .002$), for supervisor's behaviour ($0.05 > 0.013$) is less than the table value. So there was significant relationship between satisfaction and salary & working condition and not significant relationship with career growth, supervisor's behaviour and out station for employees. Similarly there was significant relationship between encourage from immediate boss and salary, working condition, career growth & out station and not significant relationship with supervisor's behaviour. In the same way there is not significant relationship between frequency of changing job and salary & out station and significant relation with working condition, career growth & supervisors behaviour.

Conclusion

The intention to quit from job is an important area of research for the companies, government, HR experts. This study proposes thoughtful and precautionous use of satisfiers and boosters, which can be utilized in order to diminish the risk and expected harm from bad intentions like planning to leave. The present study provides further evidence in revealing the intentions to quit among the employees. Employees getting satisfactory salary from their organisation, agreed for current working condition, always looking for career growth opportunity, regular support from supervisor, and out station job influence the job quitting process. It also reveals that there was a room for dissatisfaction, expecting more encouragement from their boss, feeling discomfort with work load and salary, training and development facility requires to develop themselves. Minimum number of employees was working long term in a single organisation, and there was high frequency in changing job.

Likewise, the reasons for leaving job such as salary, working condition & career growth of employees were relates with time spent in the organisation and not relates with supervisor's behaviour & outstation. Similarly, the reasons for leaving jobs recite with work load & salary. As well as training and developments facility has no any connection with salary, working condition, career growth and out station and has strong connection with supervisor behaviour. In the same way, satisfaction level of employees relates with salary & working condition and not relates with career growth, supervisor's behaviour and out station. Also, encourage from immediate boss supports salary, working condition, career growth & out station and not support supervisor's behaviour. Moreover, frequency

of changing job was determined by working condition, career growth & supervisor's behaviour whereas there was no any effect of salary & out station.

For managers who are concerned about the impact of intention to quit and possible turnover, these factors over which they have some control and can be adjusted. This may reduce intention to quit, and subsequent turnover, therefore it helps the microfinance institutions to reduce a considerable amount of financial cost and effort involved in recruitment, induction and training activities.

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Quality Assurance in Engineering Education: Provision and Practices in Nepal

Basanta Chandra Marahatta
PhD Scholar, Department of Engineering,
Lincoln University College, Malaysia
E-mail: basantamarahatta@yahoo.com

Abstract

Higher Engineering Education in Nepal was started only in 1978. With the liberal policy of the Government of Nepal, 43 private engineering colleges were established after 1994 and are in operation. Due to the globalization, the mobility of engineers from one country to another is increasing every year. International mobility of the engineers compelled engineering colleges to enhance the quality of engineering education through the introduction of various quality assurance and accreditation processes. This research paper aims to analyze provision and different practices that are being adopted by different institutions of Nepal for quality assurance in engineering education. For this purpose, different literature in regards to the quality assurance and accreditation of engineering education was collected as a secondary data and reviewed from one side, and from the other, information on quality assurance and accreditations were collected from the website and reports of colleges, universities, Nepal Engineering Council (NEC) and University Grant Commission (UGC). The colleges and universities that are providing engineering education have developed and implemented their own system for quality assurance. NEC as per its checklist is regularly monitoring engineering colleges to know whether they are keen to maintain quality of engineering education or not. UGC from another side has started quality assurance and accreditation of Higher Education Institutions based on its QAA Guideline.

Keywords

Engineering, Education, Norms & Standards, Quality, Assurance, Accreditation, Globalization,

Introduction

From very ancient to modern, an Education is taken as basic needs like food, shelter, and other economic needs. Without Education, no society could last more than a generation. Aristotle declared that “*educated men as much superior to uneducated as the living are to the dead.*”

The meaning of the Education is a conscious effort of the state towards the welfare of the growing child to mould him fit in the society, where he lives.

Engineering Education is to prepare a technically competent graduate, and to add several dimensions of broadening the knowledge of planning, implementation, controlling and communication of development projects. Engineering is the application of creativity and teamwork using math and science principles as tools to solve problems. It is “Science” to describe electromagnetic radiation, but it is “Engineering” to build a radio or TV. Engineering Education develops technically sound engineers, who can solve different technical problems through the application of creativity and teamwork using

math and science principles.

There is great importance of engineering education. The engineering profession is very sensitive. One minor mistake done by an engineer can cause high casualty. Engineering is applied science. Science provides theoretical knowledge and theory of science is changed in practice by engineering. It is done through the development of new technology. The technology is changing very fast in the world. Engineers are the one who develops and uses new technology. The change of the technology is possible only through research and development activities.

Different factors like physical infrastructure of engineering institutions; Curriculum; minimum requirements of the student to apply for admission and admission procedure adopted by the institutions; qualification, experience and number of faculty involved in the institutions; laboratories and library facility; and others are considered as major determining factors of the quality of engineering education.

Some time the terms “quality control” and “quality

assurance" are taken as synonymous. But they are different in meaning as well as in purpose. Quality control detects the problems that occur, while quality assurance prevents detected problems (Emeasoba, 2015).

Quality control is described as the process of ensuring a certain set level of excellence that have to be met either in service or in product. Quality Control compares the achieved results with expected. So the quality control can only be done after doing the work (Emeasoba, 2015).

Quality assurance involves different parameters like the quality of teaching personnel; quality of available instructional teaching materials, equipment, college environment, students, and quality education delivery. It includes all functions and activities that will ensure quality of the academic (teaching, curriculum, etc) and structures (buildings infrastructures etc.) which will allow an objective review of the quality of the program/instructional delivery. Quality assurance is a way of measuring, improving, and maintaining the quality of any human activity that has a value. Quality assurance principles regulate both the external and internal activities of an educational institution. It is done by expert having supervisory capacity over the person doing the work and can decide on means, methods, and materials (Emeasoba, 2015).

Quality Assurance makes sure the right things are done on right way. The aim of the both quality control and quality assurance is to improve the quality of education for all students.

The globalization and mobility have created unique opportunities for the flow of technology, knowledge and ideas of people across the borders. Engineering education has become an integral part of this globalization as engineering graduates from a country can undertake employment in another country (Harun Chowdhury, 2013). This international mobility of engineering graduates has compelled educational institutions to enhance the quality and standard by introducing various quality assurance and professional accreditation processes. The educational institutions, employers, and professional organizations have a keen interest in the quality of education received by engineering graduates who aspire to be internationally mobile especially in today's globalised economy. This quality assurance and professional accreditation are more important for countries which rely on human resources export and import.

Quality assurance mechanisms for engineering education vary considerably from country to country ranging from strong peer-run accreditation programs to large government bureaucracies. The accreditation methods used by the Washington Accord signatory countries are considered to be the best developed and most well respected systems for the accreditation of engineering education in the world.

Engineering Education is comparatively new in Nepal. It was started only in 1978 through Institute of Engineering (IOE) under Tribhuvan University (TU). The government of Nepal, particularly, after the dawn of democracy in 1990, has given major priority to the privatization. Consequently many private institutions in educational sector have come into existence. For the first time in 1994, private engineering college was established in Nepal. Now there are 43 different private engineering colleges affiliated to four different universities. Now, there are 11 universities in Nepal. Out from 11, six are providing engineering education through their constituents and private affiliated colleges.

There are already 51 (8 constituents and 43 affiliated) engineering colleges in Nepal. Annual intake capacity of these colleges is about 9500 and about 7000 student complete engineering study each year and goes for either further study or job. Hence, the big number of engineers, the product of these engineering colleges, is performing professional practice inside and outside the country.

There are three separate governmental entity formed under separate act namely Nepal Engineering Council (NEC), Universities and University Grant Commission (UGC), who are responsible for the quality assurance and accreditation of engineering education in Nepal. The NEC was formed under Nepal Engineering Council Act 1998. In 1999, NEC has developed and approved the norms and standard to run engineering colleges. The major objective of the Norms and standard is to have basic guideline to monitor and evaluate engineering institutions to maintain quality of engineering education compatible to the international standard. The universities, providing engineering education have also their separate Norms and standard aimed at maintaining quality of engineering education at par of international standard. In 2007, UGC had established separate Quality Assurance and Accreditation (QAA) division to perform regular activities related to QAA of higher education institutions.

This research paper aims to identify provision and process

adopted by different governmental and non governmental entities of Nepal and abroad to assure the quality of engineering education inside the country. This paper would be useful for the colleges and universities that are being involved in engineering education.

Literature Review

In Nepal, Nepal Engineering Council (NEC) and the concerning universities are responsible to provide approval to run the engineering colleges and monitoring and evaluation of these colleges. For this, they have their own Norms and Standard, but almost similar. The Norms and Standard of the NEC was thoroughly reviewed. Similarly, different research papers prepared by different scholars, books and technical journals about the quality assurance and factors affecting quality of engineering education and steps taken to enhance the quality of education by different colleges was collected and reviewed. Some of them are given below

In the year 1999 through Nepal Engineering Council Act-1998, NEC is vested with the formulation of norms and standards, monitoring and evaluation, and ensuring co-ordinated and integrated development of engineering education in Nepal. Some of the functions of Nepal Engineering Council to ensure maintenance of standards are (Council, 1995):

- To lay down norms and standards for courses, curricula, physical and instructional facilities, staff pattern, staff qualifications, quality instruction and examinations;
- To grant approval for starting new technical institutions and for introduction of new courses or programs in consultation with the agencies concerned;
- To take all necessary steps to prevent commercialization of technical education;
- To set-up a National Board of Accreditation to periodically conduct evaluation of technical institutions or programs on the basis of guidelines, norms and standards specified by it and to make recommendations to it or to the affiliating universities regarding recognition or de-recognition of the institutions or the programs.

Accordingly, NEC has developed and approved the norms and standard to run engineering colleges. The major objective of the Norms and standard is to have basic guideline to monitor and evaluate engineering institutions

to maintain quality of engineering education compatible to the international standard.

The Norms and Standard of NEC are developed based on salient features of an engineering college with an annual intake capacity of 300 students. There are eight different indicators with weightage of each indicator as given below (NEC, 1995):

Table 1: Weightage of indicators

S.N.	Description of infrastructure	Weighted
1	Lands and building space	15%
2	Laboratory equipments	20%
3	Library books and journals	15%
4	Permanent faculty	25%
5	Administrative staff	5%
6	Faculty development program	10%
7	Furniture	5.5%
8	Other: health, sports, canteen	4.5%
Total		100%

Methods

The study is descriptive and is based on an analysis of available secondary sources of information on quality assurance and accreditation activities in the Nepalese context of higher education system. Such information on quality assurance and accreditations will be collected from some colleges, universities, Nepal Engineering Council (NEC) and University Grant Commission (UGC).

The study also relies on primary data. Different colleges were visited and conducted informal meeting with relevant and concerning persons of the colleges to know about the internal quality assurance system adopted by the concerning colleges. Similarly, UGC and NEC were also visited and met with responsible dignities to know about their external quality assurance system used in evaluating engineering institutions. Besides, it was also discussed with them about the provision and practices in Nepal about Quality assurance in Engineering Education.

For secondary data relevant and appropriate documents were collected from some colleges, NEC and UGC from one side and from other related documents, research papers and articles were downloaded from different website about quality assurance of engineering education and analyzed thoroughly.

Result/Discussion

The Engineering profession in Nepal is treated as one of the prestigious profession because of the potential effects of its work in the society. It covers everything from buildings, roads, dams, bridges, airports and railways to

industries, computers, software, aircrafts and satellites. Its works cover the entire spectrum of the nation, from the most affluent and urban to the most backward. Engineers have been commanding high respect in the society. Besides, due to the high demand in golf countries and in western countries Nepalese engineers are getting international jobs. So the demand of engineering study is substantially increasing. Hence, to meet the increasing demand of the engineering education, private engineering colleges were established. With the establishment of these colleges, access in engineering education has been increased substantially, but at the same time the quality of education seems deteriorating. Therefore, the issue of quality assurance and accreditation of all engineering institutions seems essential and of great importance.

With the review of documents and discussion with relevant persons of different engineering colleges, universities, NEC and UGC, the provision and practices in Quality assurance in engineering education in Nepal is summarized below.

Different colleges have their own system of operation of the institutions. Most of the colleges have their own policy and procedure on faculty recruitment, faculty development, lesson planning, and provision of extra classes in particular subjects for student upon their request, conduction and coverage of curriculum on time; all are oriented to quality assurance of the education. Most of the institutions have the provision of separate unit like Research and consultancy, Student support and Guidance.

Acme Engineering College has developed and implemented Acme system for smooth operation of the college's activities and aimed at quality assurance of engineering education. The following given are the systems developed and implemented by the college:

1. Procurement System.
2. Item Issue from Store.
3. Communication System.
4. Class Allocation.
5. Gate pass.
6. Sell of practical components.
7. Maintenance Reporting System.
8. Reporting by the person, who attends workshops or seminar.
9. Field Visits.
10. Audio-Visual equipment handling.

11. Remunerations
12. Leaves
13. Medical and Dashain Kharcha.
14. Teachers Evaluation.
15. Students Evaluation.
16. Class Monitoring Format.
17. Monitoring and Evaluation System for Teachers and Staff.
18. Disciplinary monitoring of Students.
19. Teacher / Staff Recruitment System.
20. Guardian Coordination System.
21. Commitment from Full time Teacher.
22. Commitment from Staff
23. Commitment from Students.
24. TOR of Teachers and Staff.

The universities have also the system of periodic monitoring and evaluation of the colleges. They have developed their own checklist for this purpose.

Nepal Engineering Council has developed Check List as per the Norms and Standards for monitoring and evaluation of Engineering Colleges. In the checklist the requirements on different thirteen facilities is mentioned. The first one is Physical Infrastructure. Under this facility, there are 13 components and required areas of each component. They are Land area of the institutions; Rooms (class room, Tutorial room and Drawing hall) area; Laboratory area (10 general lab area and for five specific programs, Civil, Electrical, Electronics and Communication, Mechanical and Computer/IT engineering). Each program has different laboratories and the required area of these laboratories. For Civil engineering there are 11, for Electrical there are five, for Electronics and Communication there are seven, for Mechanical engineering six and for Computer/IT engineering six. The fourth one is Workshop area. The fifth one is Library area, sixth is administrative space, seventh is other amenities, eighth is hostel (optional), ninth is staff accommodation (optional), tenth is play field (minimum two); and last one is area for future expansion.

The second facility is Laboratory equipments. Under this facility number of laboratory requirements and details of equipments and their quantity of each laboratory is given. The laboratories are divided in two major parts namely General and program specific for five different programs. Under general there are seven different laboratories namely: Physics, Chemistry, Communication, Thermal

Science, Basic Electrical Engineering, Basic Electronic Engineering and Workshop Practices. The name of equipments and their quantity is given in each of the above mentioned seven laboratories in checklist. Under specific there are five programs mentioned earlier. There are 10 laboratories (Civil Engineering Materials and Concrete Technology; Strength of Materials; Hydraulics; Fluid Mechanics and Hydrology; Surveying; Analysis of Structure; Soil Mechanics; Transportation Engineering; Environmental Engineering; Structural engineering; and Hydropower engineering) and name of equipments and their quantity of each laboratory under civil engineering program. Under electrical engineering program, there are five laboratories (Maintenance Shop; Electrical Machines Laboratory; Measurement, Instrumentation and Control; Basic Circuits; and Power System Engineering) along with the name of equipment and their quantity of each laboratory. There are six laboratories (Electronics Engineering; Advanced Electronics; Electromagnetic & Microwave; Communication; Printed Circuit Board; and Project Work (Optional)) with the name of equipments and quantity of each laboratory under electronics and communication engineering. The forth program is mechanical engineering. There are five laboratories (Thermodynamics & Heat Engineering; Fluid Mechanics and Fluid Machines; Mechanics of Solid; Mechanism and Machine Dynamics; and Instrumentation, Control and Measurement) together with the equipments and their quantity. Under computer engineering, the checklist mentions that the colleges should manage additional required software.

Based on the need and demand for accreditation due to the rapid growth in the number and variety of Higher Education Institutions (HEIs) and programs since the 1990s in Nepal, Quality Assurance and Accreditation Committee (QAAC) was formed for the development and implementation of Quality Assurance and Accreditation (QAA) activities in higher education in Nepal in 2007. The QAA Division in UGC has been established as the permanent functional entity to undertake quality assurance and accreditation related matters and to facilitate QAAC and to perform regular activities related to QAA. The QAAC is responsible for executing quality assessment and accreditation of higher education programs and institutions. The objectives of QAA are to:

1. Facilitate higher education programs, institutions and universities to develop quality assurance mechanisms by providing formats for self-assessment, peer reviews and quality audits,

2. Recognize the contribution of the various professional councils,
3. Certify the quality of the programs and (HEIs) on the basis of reviews, assessments and audits of the programs and the HEIs,
4. Offer quality advocacy in relation to measuring the equivalency of the various academic degrees earned from the universities across the world,
5. Help the HEIs to assess their strengths, weaknesses, opportunities and threats through an information processing system, and
6. Make QAA a publicly popular move for an overall development of higher education in the country.

As per UGC, participation in QAA is a voluntary process. At present, UGC is running only Institutional Accreditation. Any HEIs which meet the following eligibility criteria can participate in the QAA process:

- HEIs must have at least 50% full time teachers
- Designation of the academic posts listed by the HEI must have been approved by the respective affiliating university.
- Executive head and Head of Departments (HoDs) must be full time teachers
- HEIs must have produced at least 2 batches of graduates or have run graduate programs for 5 years
- In the case of professional HEIs, they should be recognized by the respective professional councils and meet the minimum requirement of the councils.

The scope of QAA covers quality audit, quality assurance and accreditation on the basis of voluntary participation of various higher education institutions including public, communities and private institutions.

QAA procedure consists of a following four-stage process, which is a combination of self-study and peer review:

1. Submission of a Letter of Intent (LoI)

The HEIs willing to participate in the QAA process have to submit a Letter of Intent in the specified format (LoI format is given in the website of UGC: www.ugcnepal.edu.np). QAAD will then send the manuals and guidelines to the eligible institutions to complete the entire process of self-assessment.

2. Preparation and Submission of Self-Study Report (SSR)

The eligible institution itself has to prepare the Self – Study Report (SSR). Preparation of SSR is an internal exercise for the participating institutions expected to be done with honesty, self-trust and confidence. It aims at providing an opportunity for the institutions to measure their effectiveness and efficiency, and to identify core strengths and weaknesses.

3. Peer Review

After receiving the formal SSR report from the participating institution, QAAC forms a Peer Review Team (PRT) to evaluate the QAA status based on the SSR and visit the institution and inspect the patterns of evidence to validate the SSR through observation and interaction with the people concerned in the respective institution. The team also checks the validity and reliability of the information reported in SSR. It also provides a confidential score to facilitate the final grading. The PRT report and the assessment will be discussed in the Technical Committee and will be submitted to QAAC.

4. Final Decision for Accreditation

QAAC reviews the PRT report and recommends to UGC for the accreditation status. UGC gives final decision. In case of the accreditation the certification will be valid for a period of five years. The institutions will have to apply for Accreditation and undergo a fresh QAA process after five years. However they may apply it even before the maturity of this period and the process will be started accordingly.

QAA process is completed through the process of Self-Assessment and Peer Review using defined criteria. As currently UGC is undertaking only institutional assessment and accreditation. It has defined generic criteria only. The following given are eight different generic criteria, based on which assessment of institutions are being done by UGC:

1. Policy and Procedures
2. Curricular Aspects
3. Teaching-Learning and Evaluation
4. Research, Consultancy and Extension
5. Infrastructure and Learning Resources
6. Student Support and Guidance
7. Information System
8. Public Information

Conclusion/Recommendations

Higher Engineering Education in Nepal is still young. It has a history of about 30 years. Due to the lack of sufficient experiences, it is not progressing as per expectations. To develop engineering education at par of the international level and enhance the quality of education, quality assurance and accreditation of engineering education in Nepal is essential. Based on this reality, the initiation taken by University Grant Commission (UGC) in this regard is very commendable. Some out from 51 engineering colleges has already got QAA from UGC and remaining engineering colleges are in the process of getting QAA, based on the UGC guideline. The engineering colleges as well as the universities providing engineering education are also taking necessary actions to enhance the quality of engineering education by introducing various quality assurance and accreditation processes.

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Effectiveness of School Dropout Prevention Practices in Nepal

Jayaram Wagley

PhD Scholar, Faculty of Social Science

Lincoln University College, Malaysia

E-mail: wagley.jayaram@gmail.com

Abstract

Lots of primary school and high school students drop out each year. School dropout phenomenon has been a serious issue in the current scenario which poses a major challenge in the educational commitment of a country. The main objective of this article is to study the effectiveness of school dropout prevention practices in Nepal. The secondary data has been used in this article to find out how effectively the preventive practices are put in place and the gaps if any. So preventing school dropout has been a crucial task and campaigning successful completion of school education has been a prime concern of each and every country. Therefore the students who are at the greatest risk for dropping out of school can be identified and proper methods of bringing them back to school can be applied. The government should also start the most effective intervention programmes to reduce the dropout rates. It is equally important to track students who are at risk for school failure and to maintain a focus on students' progress toward educational standards. Various factors and indicators responsible for school dropout have to be addressed to impact enrollment status. The school dropout process is directly related to educational and socioeconomic status of the parents as well as child labour and school environment. So it is important to look upon the issues associated with dropout factors. To leave no child out of school, government as well the educators must emphasize the issues related to student mobility, alternate routes to school completion, and alternate timelines for school completion. The paper highlights the role of government policies on positive action as well as effective public awareness programmes which will help in the reduction of the number of dropout students which ultimately keeps the students in the school and contributes to the nation's educational development.

Keywords

School dropout, preventing, intervention, effectiveness, education.

Introduction

The number of students that enroll to basic level education in Nepal is very high but the number that graduate is not considerably high. Many students cannot complete the basic level education or secondary level and most of them are constantly repeating the classes. So this article is focused on the primary and school dropout phenomenon, the factors related to it and the various preventive measures put in place in Nepal.

Education

It is the basic right of every child to get education which develops their mental and physical abilities as well their personality and talents. Education is essential for the overall development of an individual as well as the nation. It is an important tool due to which people are empowered and become well-off economically and socially. Children are the future workforce and the leaders.

The constitution of Nepal ensures the right to education and every citizen is supposed to get the free education upto the secondary level. Since the school year 2009, the government of Nepal has begun to implement the School Sector Reform Programme and has restructured the education system primarily in three groups, i.e. early childhood development classes, Since the school year 2009, the government of Nepal has begun to implement the School Sector Reform Programme (SSRP), which aims at restructuring school education with basic education; grade 1-8 and secondary education; grade 9-12 (MoE, 2011)

School Dropout

It can be observed that a quite big number of students are dropping out of the school every year before they complete their education.

Dropouts are learners who temporarily or permanently stop attending school before completing an education cycle, for example, primary level or secondary level. Lekhesa (2007) view dropouts as those learners who leave school before the ultimate year of the learning cycle during which they're enrolled, which might be the initial level or secondary level or college levels. Dropouts from school are defined as young children, who enroll in class and for a few reasons apart from death leaves school before completing the grade and without transferring to a different school (Chugh, 2011).

School Dropout and its Reasons

Dropping out of children from school has become a solemn problem in many countries around the world (Young & Chavez, 2002), especially in low earning countries like Nepal. According to Lewin & Sabates (2012), although substantial number of youths has started grade school than ever before, the speed at which children drop out from school had remained high in poorer countries. More than half of the children who start primary school do not complete the full cycle of education. Nepal is a primary example where large number of children dropout from schools due to poverty and social backwardness. The school dropout simply refers to an individual who does not complete his or her primary or secondary level education due to some reasons. Many children enter the primary school but are unable to complete their education.

Dropout Causes

Students drop out of school for a variety of reasons, including (a) poor socioeconomic condition of the parents (b) academic failure, (c) poor relationships with teachers, (d) pregnancy and other medical reasons, and (e) family or job obligations and child labour (Bridgeland et al., 2006; Croninger & Lee, 2001; Shuger, 2012). Due to the variety of reasons students drop out, school completion interventions must include multiple components, with efforts to increase student engagement at their core. It has been found that student outcomes are most likely to improve when a caring and supportive school environment is combined with a focus on learning and high expectations for student achievement (Dynarski et al., 2008).

Other factors associated with school dropout include low educational and occupational attainment levels of parents, low family income (Ekstrom et al., 1986; Chan et al., 1984). Poverty was the main reason for dropout,

as a result, they work for supporting the family economy (Umesh R. Dixit, 2010). Jayachandran (2006) indicate that the major factor of dropout are children and parents who are not interested in studies, unable to cope, work for wages, salary, participation in other economic activities, attend to domestic duties and financial constraints. Another study also found out the reasons for the school dropout of girls was to take care of a home and younger siblings as both parents were working (Patel & Gandhi, 2016). A similar study associated with school dropout emerges from children's household situations such as child labour and poverty. (Sabates, 2011)

The children dropouts from school due to lack of interest in their studies; reasons the cost of a fee was too high for which they need to earn outside work for payment at the same time they need to do household work (Gouda & T.V.Sekher, 2014). Dropout was more from the families when they give a full permissive lifestyle to children of making their own decisions about their behaviour and activities (Rumberger et al. 1990; Steinberg et al. 1989). The peer pressure influences student's dropout (Omollo & Yambo, 2017). The most frequently reported reason by scheduled tribe, scheduled caste parents for drop out of their wards is due to earning compulsion, household work, lack of interest in continuing education and failure in their examinations (Arindam Banik and Debasis Neogi 2014).

Sebatane (2009) considers disability as one of the contributing factors to primary school dropout. They stated that the lack of initial access to school for learners with disabilities and special educational needs (SEN) means most of them are able to drop out of school.

UNESCO (2011) stated that some schools in Nepal are situated so far away that travelling to and from school every day is difficult and tiring for the disabled learners and consequently they drop out of school.

Perrin (2007) maintains that the physically abused learners exhibit lower intellectual and cognitive functioning compared to learners with average intellectual and cognitive functioning on general intellectual measures. They also experience problems in specific measures of verbal facilities, memory, dissociation, verbal language, communication ability, problem-solving skills and perceptual motor skills. Academic performance is another area of substantiated difficulty in physically abused learners. Compared with non-abused learners, victims of physical abuse display poor school performance and

adjustment. These abused learners also receive more special education services; score lower on reading and mathematics tests; exhibit more learning disabilities and are more likely to repeat a grade. A learner may thus feel obliged to drop out of school (Perrin 2007).

Pridmore (2007) explains those long term effects of health and nutritional status of younger learners, the implications of school enrolment; dropping out and school achievement may negatively influence learners. School-aged learners who suffer from lack of protein, energy, malnutrition, hunger or lack of certain micro nutrients in their diets do not have the same potential for learning as healthy, nourished learners. According to Perrin (2007) these disadvantaged learners attend school less frequently, are more likely to repeat grades, dropout early, fail to learn adequately due to poor levels of attention and display little motivation and poor cognitive function.

The school environment also contributes towards dropouts due to the lack of appropriate facilities for learners with disabilities such as school toilets or play grounds which are accessible for the learners in wheelchairs.

Lack of interest, even with high rates of return from educational investment, also appears to be a strong factor influencing a student's decision to drop out from school

Dropout Prevention Practices-Worldwide

The challenge of school completion is not confined to the developed countries such as United States or the West European countries. Millions of children and youth around the world are denied or have limited access to education. For those who are fortunate to have the opportunity for some level of public schooling, it is often limited to a primary education and they don't get a chance for further education. For those who attend school, the promise for a future based on their education is dim, causing countless numbers of students to drop out of school and look for some other alternatives such as child labour or to survive on the streets.

The following points describe the various dropout prevention practices around the globe.

Mentoring

Students who are at risk of dropping out often have a variety of personal, academic, and family problems that hinder their likelihood of succeeding in school. These problems may also negatively impact students' attendance at school and when students are frequently absent, it can affect their

ability to bond with others in the school environment. Having a connection to an adult in the school setting can increase students' sense of belonging in school. The teachers can play effective role in mentoring the students in explaining the importance of education. Research on mentoring indicates that even informal relationships with caring adults can increase the likelihood that students with disabilities will graduate (Ahrens, DuBois, Lozano, & Richardson, 2010; Dunn, Chambers, & Rabren, 2004; Murray & Naranjo, 2008). Some American businesses have established partnerships with schools in an effort to upgrade the quality of education. They have counselling services which will help in preventing the students from dropping out of students and increase the number of skilled workers for the future. In these partnerships, business employees act as mentors to help develop human and social capital in at-risk children beginning at an early age so that they will graduate from high school and be prepared for post-secondary education. (Einolf 1995)

Family Engagement

When families are engaged in their children's education, children are more likely to be successful in school (Epstein, 1987, 2001). It is important that schools create a welcoming atmosphere for families and convey the message that family participation is wanted and valued. It is particularly important to reach out to parents who have low rates of participation in school activities. Holding informal school functions, such as potluck dinners, usually draws many family members and provides a relaxed setting in which teachers can develop relationships with parents. Such functions also provide opportunities for parents to network with one another. It should not be assumed that parents have the information and skills needed to help their children succeed in school. Schools should provide parents with materials that explain school rules and expectations, and adapt materials for families from culturally and linguistically diverse backgrounds (Bae & Clark, 2005). A Study was done among the 1,010 fourteen-year-old students (51% female) from the population of students attending the ninth grade of a public school in the capital city of Iceland. It is found that the students from the more authoritative families were less likely to be disengaged at school at age 15 and therefore more likely to have completed upper secondary education at age 22. Therefore there exists a relationship between parenting practices and school dropout/graduation rate. (Blondal & Adalbjarnardottir, 2014).

Academic Intervention

Low academic performance and frequent absences may result in students being retained a grade. Falling behind with work and being retained significantly increase students' likelihood of dropping out (Jimerson, Anderson, & Whipple, 2002). Students who fail courses need support to develop academic skills as well as accumulate credits. Providing academic supports, such as tutoring, academic enrichment, and credit recovery, can help students catch up with work, improve their academic skills, and increase the chances that they will pass the required courses and high school exit exams needed to graduate (Wilkins, 2011a).

Class/School Restructuring

Students who attend large schools may feel lost and disconnected from school. When students feel little attachment to school, it is usually not a difficult decision for them to drop out. Some school restructuring programs involve smaller classes and block schedules in which students have fewer teachers. In such learning environments, teachers can focus on building relationships with students and between peers. A personalized learning environment promotes a sense of community and has long been associated with students' increased sense of belonging in school and improved academic performance (Cotton, 1996; Oxley & McCabe, 1990; Raywid, 1998). Small learning environments also enable teachers to interact with students on an individual basis, which gives teachers the opportunity to target students' interests to motivate them and be more attentive to students' areas of difficulty. Some of the European countries have developed the Personal Learning Environments (PLE) which help the students take control of and manage their own learning. They can set their own learning objectives by taking help with their teachers. Such learning requires interactive classrooms with personalized ICT solutions.

Methods

This article mainly uses secondary data from various sources and finds out what preventive measures have been applied in the reduction of dropout students from the school. Various journal articles have been studied to discover the effectiveness of the preventive measures of school dropout.

Government Policies and Practices for the Reduction of School Dropout

This topic discusses the key government policies and preventive measures implemented to control the barriers to education.

Poverty

Poverty is a major issue in Nepal. Approximately 41.8% of the Nepalese population live below the poverty line (NLSS 2011). More than 60% of out of school children belong to this portion of population (Census 2011). Around 3.5 million girls, Dalits, Janajatis, children with disabilities, children affected by conflict, and other disadvantaged students are in a condition of being out of school status. Existing policy of government is to provide free education up to secondary level, including free textbooks. It has also provided scholarships for socially disadvantaged groups and the girls. Action plan of making education compulsory for this disadvantaged group has been endorsed. The government has provided free and regular midday meals in public primary education schools in 19 districts.

Social exclusion linked to caste/ethnicity

The non-Dalit Muslims have the highest number of school leaving students, accounting for 14.3% of total out of school students. Dalit castes such as Dom, Musahar, Halkhor, Pasawan etc. have high proportion of children not attending school. The constitution of Nepal has specified that there will be no discrimination based on religion, race, gender, caste and tribe. Vulnerable Communities Development Plan 2007 reemphasizes commitment to free education for girls and Dalits. There has been a policy which hires teachers from Dalit, Madhesi and Janajati groups. There has been the provision of scholarships for Dalit children from Grade 1 to 8 to cover stationery and uniform.

Disability

Children with physical and mental disabilities are more likely to drop the school. 30.6% of the total disabled students are not attending the school. Constitution of Nepal ensures that every citizen even the person with disabilities have right to education. The government has also provided scholarships, Braille books and other required materials provided for free. Special and integrated schools are also set up to overcome such problems.

Child labour

37% of children in the age group 5-17 years are engaged in child labour. The children in work are more likely from the poorest sector (MICS 2014). According to Annual

Household Survey, 2014, 8.3% of children aged 5-9 years and 38% of children aged 10-14 years are engaged in child labour. Therefore Child Labour Act 1992 have made legal restrictions on employment of children. Kamaiya system was also banned in Nepal since 2002. The government has established various commissions and bodies to monitor and prevent child labour.

Social norms and gender biases

Gender biasness can be observed in Nepal. Girls are discriminated than boys. The dropout number is high among girls and especially dalit girls. The government had started scholarship for girls since 1971. Girls were made specific target group in the Education For All (EFA) National Plan of Action 2001-2015. Legislation against child marriage has been adopted.

School infrastructure and staffing

The school infrastructure is not same in terms of quality throughout the country, particularly in the Terai and Mountain areas. Nepal has the highest dropout and repetition rates in South Asia at both primary and lower secondary education levels, leading to inefficiency and wastage of human resources. So a standard of number of students in each class and classroom size has been stipulated in School Sector Reform Plan 2009. After the 2015 earthquake, the infrastructure of the school has been improving. Plan for nationwide policy and implementation for education safety and making buildings safer to different kinds of disasters, and improving the infrastructure and facilities of new schools.

Language

The non-Nepali speakers have learning difficulties. The language can be the barrier to education. So the constitution has recognized the right to education in mother tongue. Different types of 21 text books have been developed.

Emergency and Natural Disaster

Over 1 million students were affected due to 2015 earthquake. Over 1 million children in the Terai region were affected by the prolonged protests and economic blockade. The families and children vulnerable to disasters caused by natural hazards in Nepal (like floods, landslide, drought, cold wave, disease outbreaks and earthquakes) have also been affected. It has been committed nationally that schools have been declared as 'zones of peace.' Comprehensive Disaster Risk Management Plan has been put in place.

Governance

Nepal has been transformed into a federal democratic republic following the declaration of the new Constitution in September 2015. The government became decentralized and local government was also formed. The school level education has come under the responsibility of local government. So extra attention has been given on school education. (UNICEF, 2016)

School Dropout Prevention Practices in Nepal

National ECD initiatives

The EFA National Plan of Action and the EFA Core Document 2004-2009 programs in Nepal (NNC-UNESCO 2003 and MoES 2003) committed to expanding and improving ECD centres in Nepal. The ECD strategy paper (2004) and the SSRP (MoE 2009) set the target to provide ECD services to 80 percent of 3-5-year-old children by 2015. The ECD strategy also targeted to have 80 percent of new entrants at Grade 1 with ECD exposure by 2015. The government's Tenth Five-Year Plan (2002-2007) and the three-year interim plan (2007/08-2009/10) had ECD centers as a strategy for increasing school enrolment, retention and reducing repetition and dropout rates of students. The number of ECD centres in Nepal were 35,121 as of the 2014-2015 school year (Van Ravens, 2009; FLASH Report 2014).

Constitutional Right

Nepal's 2015 constitution declared that every citizen had the right to free education up to the secondary level. The constitution also protects the right to instruction in the mother tongue up to secondary level. Grades 1 to 8 are kept under basic level education while grades 9 to 12 are kept under secondary education in Nepal. Apart from this, there are various scholarships, free textbooks and free meals.

Teacher training

In 2015/16, there were about 95.3 percent fully trained secondary school teachers. It is also found that Compared to lower grades, it is spotted that Grades 9 and 10 have lower drop out and repetition rates (3.3 percent for girls, 3.2 percent for boys). Teacher training plays important role in reducing dropout rate. (NIRT, 2016)

Non-formal Education and Lifelong Learning

The distinction between formal and non-formal education is often based on where learning takes place. Formal education primarily occurs in training establishments and often leads to recognized outcomes and qualifications.

Non-formal education has intended learning outcomes, but the learning often happens in places where teaching is not the primary business. In the face of a situation in Nepal of high school dropout rates, high numbers of out-of-school children, and a high percentage of low skilled workers, and the low fit between tertiary education and labor market needs, non-formal education and lifelong learning are increasingly important in Nepal. The ability of Nepalese to adapt their knowledge and skills to the needs of the modern labor market at home and abroad will significantly determine the extent to which they can secure gainful jobs and break the cycle of economic vulnerability. Most non-formal education happens through labor market programs, on-the-job training, professional associations, work experience and volunteer organizations. Informal education comprises learning that comes because of participations in clubs, libraries, museums, family activities, playground activities, volunteering and other arenas. In Nepal, it seems that technical education and vocational training (TVET) is conflated with non-formal education and lifelong learning. While, the overlap is justified in the cases of non-formal settings, it is important to underscore that when TVET is delivered as part of vocational streams in formal learning institutions, it is really a part of formal education. (Dahal, 2020)

Effectiveness of School Dropout Measures

Most of the dropping out students in Nepal come from the poverty and they have to work harder to make earning for the family. Nepal's adult literacy rate is low. Almost half of its population has not completed basic level education. After the abolishment of Panchayat system in 1990, Nepal has leapt tenfold in education after the establishment of many educational institutions. The dropout rate is in decreasing trend but it is not satisfactory. (Lillian Zmarzly, 2019)

There are still many things to be done. Education has not been made compulsory yet. The scholarships provided may not reach to the targeted group and the indirect costs involved make education expensive for the poor people and dropout still exists. Low education status of parents also affect the children to drop the school. The number of Dalit students in primary level is more than the number of Dalit teachers. All the students with disabilities have not been identified. Disability is still an issue for dropout since the infrastructures lack facilities for disabled students. Child labour act and different regulations are there in place to stop children to work and go back to

school but in practice, these rules and regulations are not functioning well. Gender biasness is making students out of school. One-third of the school still lack the separate toilet facilities for girls. The child marriage is prevalent in many parts of the countries. Many classrooms were destroyed due to the earthquake in 2015. There are so many things still need to be solved. Even though there are many plans and policies applied to reduce to school dropout rate, the change is rather slow.

Conclusion

It is hence studied that many students are leaving the school due to various reasons. Dropping out of school has been very common among the children from economically deprived communities. The governments in the third world countries like Nepal are trying to increase the number of enrolment in the primary and secondary level and retain them in the school until they proceed to the next level of education, but the school dropout has been a serious problem especially in the public schools in Nepal. Poverty, child labour, distance to the school, parents' intention towards education, early marriages, social deprivation, etc are the major reasons which have to be solved first and then, keeping the children in the school will not be a difficult task. Solving the contributing factors of school dropout will help to make the public policies effective.

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Integrating Values in Education: Managing Learning Crisis for Sustainable and Holistic Achievement

Romkanta Pokhrel

Ph.D. Scholar, Lincoln University College, Malaysia
romkanta@gmail.com

Abstract

This paper attempts to explore the need and importance of values integration in educational activities to mitigate learning crisis and promote sustainable learning achievement. The traditional approach, commercial motive, focus on instrumental knowledge coupled with many other contemporary issues have collectively smothered the fundamental humanistic principles of education. To avert the situation and execute the core objectives, we need to shift our focus: a shift from instrumental knowledge to humanistic-transformational knowledge; a shift from the traditional approach of supplying and storing information to learning to deal with the real-world problems; a shift from head to heart. Values integration is an attempt to initiate and promote this shift. Rather than teaching values and moral principles under a particular subject heading, values need to be a part of everyday in-school and out-school activities. To concretize this concept, a model is proposed in this study as a holistic model of values integration via whole school ambiances and community support.

Keywords

Learning Crisis, Values Integration, Holistic Education, Sustainable Learning.

Background

The International Commission on Education for Twenty-first Century writes, “Education should contribute to every person’s complete development - mind and body, intelligence, sensitivity, aesthetics, appreciation, and spirituality” (Delors et.al, 1996). This holistic approach incorporates the broader spectrum of knowledge, skills, and values as the fundamental aspects of learning. The report also recommends that an effective education builds on the four pillars of learning: learning to know - knowledge, learning to do - skills, learning to live together- relationships, and learning to be- an integrated personality. It envisions the development of a complete human capable of understanding the self and the others.

Education in its holistic approach does not focus only on acquiring knowledge and information; it focuses on developing values and intelligence for transformation. Psychologist Abram Maslow claims that “the purpose and function of education in its humanistic goal is to prepare a person for self-actualization” (Maslow, 1956). The self-actualized person can seek the meaning of life, the purpose of ‘being’ -who he is. Maria Montessori (1953) adds on this as “the best preparation for teaching is to nourish the spiritual embryo of students and make them

aware of their potentials and cultivate a good attitude and moral values” (65). To achieve the holistic goal of education, our educational practices need to integrate the fundamental values in their in-school and out-school activities. Danah Zohar (2010) argues,

As an educator, we need to encourage students to think about the broader implications of why and how they can contribute to society in substantial and ethical ways that add values to our communities. I think the purpose of education— which we have lost largely in our society today— is fully to develop human beings who are good people, good citizens, good parents, and good servants to whatever they choose to pursue. (4)

Statement of the Problem

Despite being fully aware of the needs, goals, objectives, and functions of education, educators and educational institutions have limited the educational practices to an act of collecting information. The comprehensive approaches of developing students’ physical, social, intellectual, emotional, and spiritual needs are grossly ignored. This has eventually prepared a child to pass the test without any awareness of what he is learning. Bass and Good (2004) quote “a student schooled just to pass the standardized tests, however, is ill-prepared to cope

with the today's rapidly changing world" (163). This is the major problem in our education system at present.

When the focus lies in collecting and storing information, education ultimately becomes a "banking concept-students being the depositories and the teachers the depositors" as Paulo Freire (1987) argues. This concept ultimately infects teaching and learning with a 'narrative sickness', dehumanizes the entire process. Such an approach kills every potential and creativity of a student and creates confusion that memory is intelligence, compliance is the virtue. A student ultimately takes learning as an act of gathering information; it has nothing to do with transformation. This is another problem in our system.

John Dewey (1993) opines that teaching students just by dictating or lecturing is finally restricting the learner's potential, intelligence, and imprisoning the spirit. When this becomes a pedagogical approach school is a bad place for children as John Holt writes. He argues that school – with a traditional approach – is a place to pacify a curious, determined, enthusiastic, energetic, skillful learner - a place to dehumanize a human and the place where what is counted and has important is what the teacher likes him to do and be.

Need and Significance of the Study

We shape our tools and afterward, we are shaped by our tools. – Marshall McLuhan

A cursory review of the literature reveals a fact that there exists a noticeable gap in our practices so far as the goal of education for holistic and sustainable learning is concerned. To revive this loss, we need to focus on the integration of values in our educational practices. This study is an attempt to add a brick on the foundation of a values-integrated approach to learning for holistic goals. Study on such a topic bears an urgent need and a great significance to make all the stakeholders aware of the fundamental objectives of education. It is equally important to make people know and realize how values help in addressing the problem of learning crisis and promote the holistic education.

Limitations of the Study

This paper is limited to qualitative studies based on information from secondary sources like – books, journals, news articles, and online sources. Due to lack of time and resources, it has a shallow coverage of the topic despite the in-depth and comprehensive nature of the topic.

Objectives of the study

The study aims to:

1. introduce learning crisis and sustainable leaning
2. explore the importance of values-integration in educational activities
3. design and propose a model of values integration

Research Question

1. What role does integration of values play to achieve sustainable and holistic learning goals? And how?

Methodology

As the study attempts to answer a qualitative research question by describing and analyzing a situation or a phenomenon, I have chosen the content analysis method. This method helps me to bring the ideas on the floor and answer the – 'what' and 'how' of my research question.

Conceptual Framework

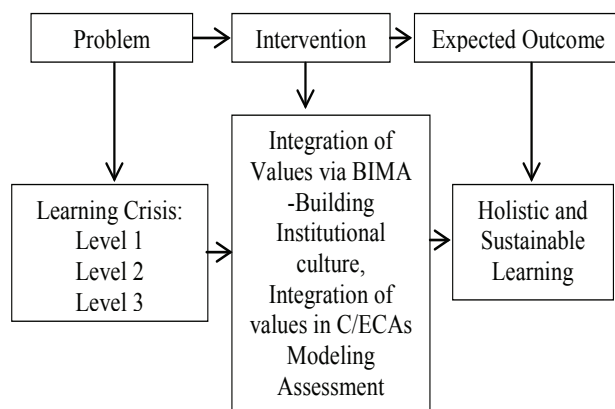


Figure 1: Conceptual Framework

Review of Related Literature

Learning Crisis and Sustainable Learning

A learning crisis is a crisis or situation where a child does not have access to learning nor an effective and conducive learning environment. This crisis takes place at three levels- *Level 1*: A significant number of children are deprived of school enrollment. World Development Report (WDR, 2018) states, "258.4 million children are out of school globally". *Level 2*: A noticeable number drop without the basic skills of literacy and numeracy. "More than 40% of school attendees are below the basic achievement level of literacy and numeracy." *Level 3*: Those who pass certain levels lack the fundamental values and life-skills that they are expected to learn. Following this situation, the WDR 2018 concludes that "in many countries and communities learning is not up to the standard. Mere school enrollment without effective

learning is a terrible waste of precious resources and human potentials.” – a state of learning crisis.

Exploring the determining factors of this crisis, the World Bank Team in its comprehensive research has outlined four primary responsible factors for this crisis: learners’ preparation, teachers’ skills and motivation, availability of relevant institutional inputs, and the school management cum governance that bring these together. It is true in most of the situation that children do not arrive at school with readiness to learn. For different reasons – economic situation, family issues, physical and emotional issues, discriminatory attitudes, caste, color, gender, and many more – children are ill-prepared for active learning in school as well as at home. Another crucial factor causing a learning crisis is the teacher. Teachers are the most trusted person and are also considered moral agents in the learning process. Unfortunately, ‘teaching’ in many countries like Nepal, is not still a chosen profession as a result they often lack the motivation and do not even attempt for needed skills. WDR 2018 reports the shortage of high skilled motivated teachers in developing countries. In addition to learners and teachers, lack of proper management skills, insufficient infrastructural development and resources, inefficient school inputs - training and teaching materials, lack of innovative approach, and many others including family and community environment are largely responsible for the global learning crisis.

Sustainable learning is an inclusive approach aimed at producing a responsible social citizen by providing knowledge, skills, and values that address real-life problems. The concept of sustainable learning contrasts with the narrow, utilitarian, market-oriented, instrumental approach of learning. It is an educational framework for life-long, trans formative values; a new and different idea of learning to make it useful to the life-process. Sterling in his 2010 publication *Sustainable Education* provides us with four worthy criteria for sustainable learning. He says,

Sustainable learning sustains people, communities, and ecosystems; is ethically defensible, working with integrity, justice, respect, and inclusiveness; is itself a viable system, nurturing healthy relationships and emergence at different system levels; and it works well enough in practice to be able to keep doing it. (127-40)

Sustainable learning is more relevant as the goal of education is not only to acquire information and knowledge but more importantly the transformative

power via its right application in a real-life situation. David Orr says, “We must recognize that the goal of education is not the mastery of knowledge but the mastery of the self through knowledge” (Orr, 1996). Here, self-mastery of learning involves developing skills of inquiry, discovery, critical thinking, problem-solving, reasoning, judgment, imagination, collaboration, and other higher-order capacities, including and especially reflection, and the disposition and discipline to make the most of them. In particular, education should equip students “with the skills, disposition, and discipline to continually learn and to apply that learning toward ends that contribute to long-term global survival, if not flourishing” (Brundiers and Wiek, 2017). This is what sustainable education aim at and for this mere delivery of content is not sufficient. We need to help students and ourselves to integrate and practice the fundamental values in the context.

Values and Values Education

Oxford dictionary defines values as “the belief about what is right and wrong, and what is important in life” (OLD). Scholars like Shaver and Strong define values as “our standards and principles for judging worth. They are the criteria by which we judge ‘things’ (people, objects, ideas, actions, and situations) to be good, worthwhile, desirable; or, on the other hand, bad, worthless, despicable” (Shaver and Strong, 19796). In this sense, values are not mere ideal prescriptions to be followed rather the principles and criteria by which we evaluate, choose, prioritize what is worth adopting and act in a just way.

In a broader spectrum, Arjo Klamer defines values from three different domains: In standard economics, he equates values with the price of goods (having use value, exchange value, and a social value). In the culturalist domain, he relates values to the quality of the work of art. The value of any work of art lies in its form –how it looks – the aesthetic part; and the content - as to how it contributes to the recipient or general public. His third domain of discussion is on moral philosophy where he links values with the moral implication of human behavior with the qualities like respect, benevolence, solidarity, honesty, etc. For Klamer, “a value-based approach should never see these aspects in isolation rather integrate them”. (Klamer, 2005)

David Throsby (a cultural economist) prescribes a set of six values that a work of art possesses or people perceive in it. Values such as aesthetic value, spiritual value, social value, historical value, symbolic value, and authenticity

value determine the quality of artwork (qtd. In Klamer, 2005). Besides economic and cultural aspects, values are also associated with the pleasure that an individual experiences at different levels. Edward C Hayes writes “The things that give satisfaction, happiness, or pleasure to an individual in physical, emotional, intellectual, and spiritual domains are the real values to be adopted” (Hayes, 1913).

Hayes mentions physical pleasure (comfort and warmth or gratification of physical appetite), aesthetic pleasure (the experience of the beauty of nature, work of art, home, personality, morality), intellectual pleasure (the joy of comprehension, perceptions, insights, gratification of the instinct of curiosity), social pleasure (pleasure of our association with others like friendship, the pleasure of loving others and being loved, praising and being praised), and personal pleasure (personal satisfaction, sense of one’s personality, moral standards, success, and worth) as the five ultimate values of an individual. (Hayes, 1913)

Nature of Values: Universal vs Relative

One of the fundamental questions the literature on values asks whether the values are universal or relative. Some scholars opine we cannot have universal values common to all. For them, values are not precise especially at the individual and social level in a multicultural setting. Various scholars also claim that certain values are intrinsic, common, and irrefutable to every human so far as the role of values in behavioral change is concerned. Nick Tate argues that a pluralist society entails common values. He says, “the idea - increasingly widely accepted - that because this is a pluralist society, we have no common values, is false” (Tate, 2005). When we think beyond a narrow domestic wall, there are values common to all humanity, they are everyone’s values. Klaus M. Leisinger writes,

A core set of universal values and binding normative imperatives valid over time and across geography, cultures, and religions is available. ... Global values such as nonviolence, reverence for life, solidarity, fairness, justice, truthfulness, tolerance, equality, sustainability, respect for human rights, and integrity have no cultural boundaries – these are everyone’s values. (Leisinger, 2014)

It is not easy to make an exhaustive list of everyone’s values. However, based on the review of the literature and personal experiences, a set of values is prepared and proposed here (Table 1) in three categories: personal,

social, and global. The classification is purely subjective. It is done to consolidate what values we need to integrate into our pedagogical practices.

At the personal level, everyone possesses a unique personality accomplished with physical, emotional, intellectual spiritual and moral progression. Personal values have a relationship with oneself, be it on a physical, emotional, or intellectual level. They help in the understanding of our characters, strengths, and weaknesses. Once we share our values with the outer circle, they become a part of socio-cultural values or the values of relationships. We value our relationship with other members of the community. We have shared norms, moral beliefs, and principles that are accepted by all the members that make a society function. Social values help us internalize our responsibility, relationship, and interconnectedness with various aspects of society. Moving beyond the personal and social level we realize our connectedness at the global level. *Mahaupanishada states* that we all are the members of a global family. [अयं बन्धुर्यनेतगिणना लघुचेतसाम् उदारचरितानां तु वसुधैव कुटुम्बकम् ॥] This verse states, ‘this is my own and that a strangers’ is the construction of the narrow-minded people. For the generous hearts, the entire earth is a family. All other narrow walls of religion, geography, and politics are the construction of the narrow minds and shrunken hearts.

Table 1: Values and Value Components

Area	Values	Core Components
Personal (the Values of the Self)	Values of physical development	Physical fitness, wellbeing, comfort, longevity, holistic health, reverence to life
	Values of intellectual development	Curiosity, creative and critical thinking, reflective thinking, multiple intelligences, emotional intelligence, wisdom
	Values of spiritual development	Peace in mind, harmony, unity, connectedness, coordination of 3H i.e. head, heart, and hands
Social (the Values of Relationship)	Values of ethics and morality	Love, compassion, honesty, integrity, empathy, kindness, self-sacrifice, sharing and caring, forgiveness, righteousness
	Aesthetic values	Adoring the beauty, creativity, flexibility, imagination, appreciation of work of art
	Values of social development	Relationship, trust, recognition, justice, peace, tolerance, non-violence, altruism, collaboration, forgiveness, problem solving, interconnectedness, humility

Global (the Values of Common Good)	Values of global harmony	responsibility, democracy, interdependence, respect of human rights and dignity, global solidarity, world peace, mutual respect, law and order, unity in diversity, shared responsibility
	Values of environmental sustainability	human-nature relationship, interconnectedness, sustainable development, environmental health, conservation of biodiversity, climate change
	Values of economic development	quality of life, the sustainability of the resources, equity and equality, integrated development

Need and Importance of Values in Education

To educate a person in mind and not in morals is to educate a menace to society -Theodore Roosevelt

Education, in its core objective, is inbuilt with values. It is to prepare the young minds to be responsible adults. Its need and importance are felt everywhere as a tool to improve the eroding individual lives, mounting social, political, and environmental problems, and many more. “Values education can alleviate the social problems caused by youth misbehaviors and brings the positive difference in students’ moral behaviors” (Lickona, 1993). For these and many other reasons, values education - though not the panacea of all contemporary ills - is a strong tool to correct the situation. It is because “students’ behavior, performance, choice-making are directly related to the values students place upon a particular task or learning situation” (Eccles, 2005). To materialize this, we need an appropriate approach that can best impart values to students.

Bill Puka believes that values education program emphasizes two key activities as the methods of transmitting values to the students: first, nurturing the moral virtues and second promoting moral literacy – the basic knowledge of right and wrong. He prescribes six key methods of imparting values:

Instructing students directly in certain basic values and ideals; Establishing behavioral codes and enforcing them; Telling stories with moral lessons; Modeling desirable traits and values; holding up moral exemplars in history, literature, and current-day communities, extolling their traits; providing in-school and community outreach opportunities (service projects) through which students can exercise good traits and pursue good values. (Puka, 2005)

Values can be imparted explicitly and implicitly or in simpler words – teaching values directly as a subject and integrating with curricular and extra-curricular activities. Scholars agree that it has been a mistake in the past, where teachers have been teaching morality, ethics, values, good character as subjects. Learners memorized them and passed the examinations, but they failed to put them into practice in their daily lives. As a result, there seemed to be a general decline in morality in individuals. Transformation of a person cannot take place by mere teaching but can be achieved through self-realization values from within the learner.

Models of Values Education

In response to certain philosophical and pedagogical questions regarding how can values be integrated and how do individuals internalize values, I have briefly reviewed few models followed by a proposed model.

Values Clarification Model: Developed by Lois Rath and associates in 1978, this model provides an individual with smart values selections through choosing, prizing, and behaving. This model has four key elements: i) A focus on life: students are encouraged to how their priorities reflect a hierarchy of values; ii) Acceptance of what it is: students should be encouraged to accept themselves as well as the situation around them as such. iii) An invitation to reflect further: after accepting the self and the situation as what it is, the students should be helped and encouraged to reflect on the values they have accepted under teachers’ guidance; iv) Nourishment of personal powers: after a constant process of clarification of values, the practitioner gains a sense of personal direction and fulfillment. But this model doesn’t speak about the role of school, teachers, pedagogy, content, methods, and peer behavior regarding how they influence values internalization. The ultimate impression this model creates is that all values are primarily matters of personal perspective, preference, or taste – a relativistic model.

Values Discussion Model: This model is based on Kohlberg’s cognitive theory model. It aims at developing the reasoning and judging skills of the students in a team. More particularly, this model develops the ability to support one’s viewpoints with reasoning and justification along with admitting others’ supporting ideas. It works in five phases: presenting the dilemma, dividing on the action, organizing small group discussion, conducting a classroom discussion, and closing the discussion. Students conclude their moral dilemma through these processes.

However, concluding classroom discussion by children is not so easy. Bill Puka writes in the possible failure of this model as “obviously, arguing for viewpoints is not the end-all of moral reasoning. Indeed, it can frustrate thoughtful understanding, jumping to speak before it hears”

Rational Building Model: Introduced by James Shaver, this model emphasizes the critical reflection on the part of the teachers and students alike in values education. Rather than imposing certain values, we need to teach specific analytical skills. Shaver has proposed some techniques of teaching values education as identification and clarification of values (what are our actual values? what we prefer to do), label generalization (putting the chosen value in the context of moral norms), value conflict analysis (analyze the situation where two values have competing claims—for instance, while respecting the decision of majority it is equally important to listen to the voice of minority), and qualified decision making (analyzing all possible consequences of all possible criteria/alternatives and taking a rational decision). It is more directly concerned with teachers’ moral decision making and seeks to clarify how teachers can help their students develop meaningful ways of dealing with moral issues.

Social Action Model: This model aims at bringing social change by active participation in public affairs. Fred Newmann introduced it to teach students how to influence public rule by developing in them the environmental competencies. According to Newmann, morality does not merely comprise judging or caring at an individual level. Actual morality is the ability to affect the desirable social changes so that the social injustice rooted in the system at the macro-level is minimized, and people develop a caring attitude and do not overlook their moral obligations. In general, children start acting as moral agents. A moral agent according to Newmann is one “who deliberates upon what he ought to do in a situation that involves possible conflicts between self-interest and interests of others” (Newmann, 1996).

Values Analysis Model: This model is based on the cognitive development theory of moral development. The origin of value analysis is related to the philosophical ethics, moral reasoning, and application of rational problem-solving methods to current social problems.

Value analysis provides a detailed step-by-step process for analyzing value questions. More specifically it is concerned with helping students to gather and weigh the facts involved in value judgments. D.H. Coombs, in *Value Education: Rationale, Strategies, and Procedures* give a detailed account of the value analysis model. This model goes through seven different steps or phases in a classroom situation: presenting the dilemma, identifying and clarifying value conflict, asking for conceivable alternatives, asking for possible consequences of each alternative, asking for evidence to support the likelihood of consequence occurring, asking for an evaluation of likely consequences, and asking for judgment as to which alternative seems the best and why. This model possesses considerable limitations as “The basic questions of where values come from, how they are internalized and how some values are determined to be better than others were never fully addressed in values analysis theory.” (Zohar and Marshall, 2000)

All the models discussed here share certain commonalities but are not free from limitations. Being said there are limitations of values theories and models, we can’t throw up our hands in discontent. Williams (1985) writes “a child must be educated with values no matter what. Values education will go on in the classroom whether wanted or not. To ignore values education is to ignore a major factor in the formation of what people ultimately become.” (82) With this realization, this study attempts to propose a new model of values integration – BIMA – with an assumption that values are embedded in institutional and community culture, subject matter, the pedagogical processes, the kind of role model they have, and the way students are assessed.

BIMA: A Proposed Model of Values Integration

‘BIMA’ stands for **B**uilding Institutional Culture, **I**ntegrated Pedagogical Practices, **M**odeling by teaches and community, and the **A**ssessment on KAB. It is taken as a multifaceted model of values integration in education. I believe an active implementation helps materialize the educational goals in more effective and efficient ways.

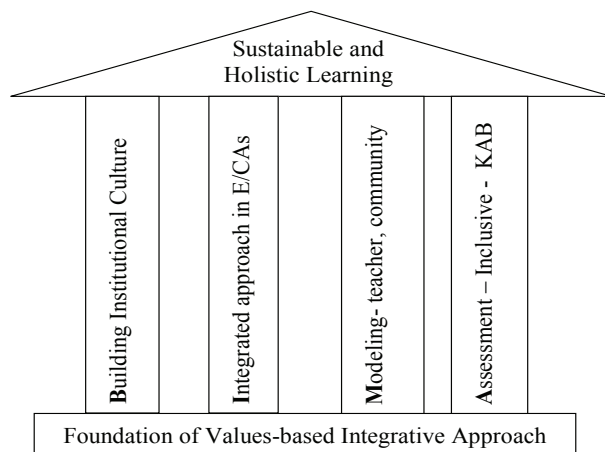


Figure 2: BIMA- A Model for Sustainable Learning

Building a whole school culture or institutional culture

Human values will not be internalized if the environment is not conducive to them. Moreover, “honest discussion of values education is sterile and counter-productive without robust reflection on the potential of teachers and their host institutions” (Hunter 1991). Hunter suggests the collective efforts of all stakeholders. Classroom discussion of values in a single subject by a single teacher will be a futile act. It is a continuous and collective process needing a great deal of practice, perseverance, and consistency. The overall environment of a school needs to have a positive influence. Schools fail to transmit values to the students if their environment (which includes all animated and unanimated aspects of school premises) is not conducive to values learning. Schools and the school environment should act as the safeguard against the forces that demoralize and de-civilize an individual like poor parenting, community, and media influence.

Since values are acquired or learned better from the reflection of the surrounding, the school environment must be exemplary. If we want our children to act in a civilized manner, we need to reflect on it first. To make school a moral or ethical place, the policies, motive, and collective approach of all the stakeholders need to be ethical and moral. Predictably, poor school culture reflects the poor values to the students.

Modeling by Teachers and Family/Community

Home is the first school and school is the second home. There must good coordination between the two. Any practice, if contradicts, negatively affects the child. So, one must be cautious to be a good role model. Among the

stakeholders, the teachers play a more significant role as the students spend most of their time in direct interaction with them. For students, teachers are the best role models- a person to be trusted and followed. Values are reflected in every act of the teacher. The way he comes in, speaks, interacts, responds, and exits. Every activity and teacher’s personality has to be a role model to students. Besides, the community- family, relatives, and neighbors play a greater role in influencing a child’s behavior. The values that a child learns at school should not be contradicted with the community practices.

Integrating values with co-curricular activities

Co-curricular activities ranging from morning assembly to different club activities, house activities, seminars, workshops, elocutions, yoga and meditation, cultural programs, sports, field works, community services, and others help students gain practical knowledge and socialization. In doing so, they also learn various values connecting to real-life situations. Researchers have discovered a positive value component in co-curricular activities. Lickona, based on his studies of character education in schools, opines that by facing challenges outside the classroom “students develop a practical understanding of the requirements of fairness, cooperation, and respect” (Lickona, 1993). Holland and Andre concluded from their study that students can learn cooperation, participation, and respect for others when they participate in extra and co-curricular activities.

More importantly, every student cannot do equally well in curricular activities and might feel inferior. Extracurricular activities can help teach positive values to this group and overcome their inferiority complex. This is the greatest value that one learns by exposing the self via an activity of his choice. Many extra-curricular activities like relief and rescue activities during calamities, a campaign against disease or any social evils, service in orphanages/ old age homes, community sanitation campaign, scout camps, rallies for awareness programs, etc. can be the best medium to inculcate values. The values associated with their personal development and relationship with others can thrive via all these activities.

Community Service cum Experiential Learning

Mere understanding the concept of values does not guarantee its internalization no matter how beautiful the concept is. To internalize the concept, one must integrate

the concept into the real-life situation—experiential learning. Experiential learning is done by the first-hand experience of the learner. The values learned via experiences become life-long, meaningful, and actualized as one's own. Experiential learning is far better than imperative learning in terms of values internalization. Values cannot be forced upon the learners though with a good intention of the imparter. It is more internalized if the learner agrees with the value said and experienced by the self. Values can be shared and argued but cannot be imposed. They should be learned by interaction, observation, questioning, and practice- truly experiential learning.

Community service learning, as a part of experiential learning, can also be made a pedagogical tool as it can capture the values of social responsibility while reinforcing academic learning. It contributes to a perfect socialization process of the students. It entails a community activity or project that links hands-on experience to course concepts. According to Kolb (1984), “the first hand or concrete experience transforms into knowledge through reflection, it develops a meaningful framework for new knowledge and the testing of this knowledge in different situations.”

Experiential learning or service seeks to foster civic values. It helps students to have an active intellectual and emotional engagement. The body of knowledge gained in the real-life situation is the main aspect of experiential learning.

Disciplinary Integration

As every educational activity is values-laden, all academic disciplines are the potential of imparting values in varying degrees.

Language and Literature: Language and literature can best connect the texts and their characters to real-life situations of the learners. Teachers can associate and at the same time disassociate the students from the character to teach certain values. Questions like do you think character ‘A’ is right in doing so? What would you do if you were in character ‘A’ or ‘B’s place? Students can identify what is wrong in the content and character and correct the wrongs. In doing so, they learn values of right conduct, responsibility, and many more. They learn what is fair, what the right way of doing things is, what behaviors people generally don’t like, and how others are to be treated. These aspects ultimately help students develop their codes/values - the crux of values in education.

Social Science: Contents of social sciences are directly

related to the social, cultural, economic, environmental, and political aspects. Social values and the values of relationship can best be integrated via these subjects. Values of family life, community responsibilities, environmental sustainability, patriotism, sustainable economic development and equality, cultural diversity, the beauty of harmony and connectedness, etc. can be imparted in different courses under social science.

Natural Science: Everyday science can help connect the theoretical concept with our every activity and add values to them. While teaching animal dissection, they can be asked to think about the values of reverence to life, respect to the non-human world and in the due course find the alternatives of animal dissection. Similarly, the advantages and disadvantages of modern medical science like genetic engineering, human cloning, its ethical aspects, etc. can also be discussed in science classes. Besides, the physical and environmental health, healthy habits, physical fitness, and the comfort that science has brought to human life, etc. can help students internalize the recent updates and also the negative impacts the development of science and technology in society can be discussed in science classes.

Performing Art: Fine arts, music, drama, dance, paintings, etc. help students develop aesthetic values and capable of artistic expression of a different dimension of human culture. The values of connectedness, beauty, harmony, fairness, respect to culture, tradition, and practices, promote multiple intelligences and emotional intelligence. Values can best be imparted through various genres of Performing Arts.

Assessment

Assessment is generally taken as a tool cum process to evaluate the learning achievements of students. It is also an effective medium to integrate values in teaching-learning activities. Moving beyond cognitive evaluation, priorities need to set on evaluating the affective domain of human personality. Berman and Graham (2018) mention three tiers of assessment:

Assessment of learning occurs when teachers use evidence of student learning to make judgments about student achievement against goals and standards. Assessment for learning occurs when teachers use inferences about student progress to inform their teaching. Assessment as learning occurs when students reflect on and monitor their progress to inform their future learning goals or when the assessment task is also a learning task. (p. 97)

Students' assessment, particularly concerning promoting holistic and sustainable learning, should focus on the knowledge, attitude, and behavioral aspects of students. Project-Based Learning, case studies, situation analysis, etc. can help in evaluating students' attitudes and behavior along with knowledge in a better way. The projects directed towards connecting the text with the context, help students solve academic as well as real-life problems.

Conclusion

Values education is not a separate discipline to be included into national curriculum. Instead, it is an approach or an educational philosophy to be integrated into our pedagogical practices to bring the fundamental aspects of being human into the real life situation. It is not an educational program to be graduated to join a profession in life rather a means to pursue the purpose of life. Integration of values in education, in a long run, helps to improve student's learning, develop an integrated personality, interpersonal relationship, self-management, progressive school outcomes. To a great extent, it helps to minimize the learning crisis (the third level of crisis) and achieve the basic functions and educational goals. When values integration becomes a part of everyday school activities, it prepares a student to deal with the outer world in a more humanistic way. The proposed model inculcates values explicitly and implicitly. But the most important thing every educator and teacher needs to internalize is imposed and instructed values cannot be life-long. Students learn and also pretend of following just for academic purposes but never make it a part of their lives. To make the values a part of life, they should be reflective of every in-school and out-school activity.

Effective values integration ultimately helps overcome the educational ills brought to us by the modern sense of progress and rationality. It also helps to minimize the learning crisis at different levels as it makes students and parents feel the importance. In this process, the fundamental human values that are dormant need to be activated via different models and approaches possible. An individual who is guided by values doesn't only do well in his study and career but also transcends the individualistic, self-centered lifestyle, can manage his life in a better way, becomes fully aware of his responsibilities, and maintains a good relationship with others. Moreover, to materialize the educational goals set by UNESCO and many other national and international policy documents, the national curriculum, and local needs, values integration plays a

significant role. For all these reasons, the foundation of all these traits i.e. schooling can never deviate from values-based approaches, all our educational practices need to be values-laden not only policies.

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Impact of Employee Participation in Decision-making and Organizational Performance: a Review of Literature and Implications for Future Research

Nilesh Kumar Tiwari*, Santosh Rangnekar**

*Research Scholar, Department of Management Studies (DoMS),
Indian Institute of Technology, Roorkee.

** Professor, Department of Management Studies (DoMS),
Indian Institute of Technology, Roorkee

Abstract

The literature review explores the relationship between the involvement of workers in decision-making and organizational efficiency. The study supports the widely held view that employee engagement activities make significant contributions to the success of organizations. Participative leadership has been widely accepted in organizational growth as a technique. This is because most individuals agree that participatory leadership not only allows employees to understand their roles, but also increases their own performance and organizational performance. Beyond this basic relationship, however, there appears to be minimal knowledge. Study on employee engagement in decision-making from a human resource leadership viewpoint seems to be a field of high priority. This study finds that the involvement of workers in decision-making has a profound influence on efficiency.

Keywords

Employee development, Employee participation, Participative decision making (PDM), participative management, organizational performance

A Systematic Review of Learning from Reflection literature: 2000-2020

Mohit Pahwaa and Prof (Dr.) Santosh Rangnekar^b

^a*Department of Management Studies, IIT, Roorkee, India,
E-mail: m_pahwa@bm.iitr.ac.in*

^b*Department of Management Studies, IIT, Roorkee, India,
E-mail: santosh.rangnekar@ms.iitr.ac.in*

Abstract

Reflection plays a pivotal role in the learning process. In today's organizations, most training programs do not yield lasting improvements in the behaviour of employees. To help employees to process and implement new information and skills, training focuses more on memorizing facts or learning-by-doing with little encouragement. Consequently, employees quickly forget what they have given training and revert back to their past behavior patterns and fixed mindsets. Training Programs are missing an integral part of the learning process- the practice of reflection. The reflection cycle theory given by Gibbs provides a theoretical foundation for this paper. Past studies show that reflection is critical to helping us deepen and integrate learning and effectively apply it to our work and our lives. In this article, the authors have systematically explored the literature of learning from reflection to see the trends in the last 21 years. Top ABDC journals in business and management areas were identified in Scopus Database to execute the current study.

Keywords

Learning, Learning by doing, Reflection, Reflective Learning, Systematic Review

Attaining Self-Transcendence through Self-Kindness: The mediating role of Humanity

Rahul Khurana^a and Santosh Rangnekar^b

*a Department of Management Studies, IIT Roorkee
Uttarakhand, India 247-667*

E-mail: r_khurana@bm.iitr.ac.in

*b Department of Management Studies, IIT Roorkee
Uttarakhand, India 247-667*

E-mail: santosh.rangnekar@ms.iitr.ac.in

Abstract

Aim The current study is focused on identifying the relationship between self-kindness, humanity and self-transcendence.

Background. Humans have become self-centred and have feelings of just self-enhancement rather than self-transcendence. In this context, it becomes evident to develop tools to enhance the feeling of self-transcendence. Self Kindness is identified for the purpose which affects self-transcendence through humanity.

Design. Data in this survey was collected using a self-reported google form questionnaire.

Methods. A random sample of 110 employees in North India was collected. Statistical analysis of the model was done using Structural Equation Modeling.

Results. Structural Equation Modeling showed that Self-Kindness was positively associated with Humanity and Self-transcendence, that humanity was positively associated with self-transcendence and that humanity mediated the positive relationship between Self-Kindness and Self-transcendence.

Conclusion. The present study highlights humanity's mediating role as an underlying mechanism between self-kindness and self-transcendence. The theoretical and practical implications and the limitations and future scope of the present study are also discussed.

Keywords

Self-Kindness, Humanity, Self-Transcendence, Kindness, Transcendence

Co-Worker Support and Communities of Practice: Examining the mediating role of employees' Personal Interaction

Anjali Dutta^a and Santosh Rangnekar^b

^aDepartment of Management Studies, Indian Institute of Technology, Roorkee,
Uttarakhand, India.

E-mail- ac_dutta@bm.iitr.ac.in

^bDepartment of Management Studies, Indian Institute of Technology, Roorkee,
Uttarakhand, India.

E-mail- santosh.rangnekar@ms.iitr.ac.in

Abstract

The present study examines the relationship between Co-Worker Support and Communities of Practice with the mediating role of Personal Interaction. The data was collected from 178 respondents representing various Indian Organizations. In accordance with the hypotheses developed in the study, the findings supported the mediating role of employees' Personal Interaction on the relation between Co-Worker Support and Communities of Practice. The structural equation modelling showed that the path from co-worker support to communities of practice mediated by Personal Interaction with highly significant results. The results also showed a positive relationship among the constructs under study. The theoretical and managerial implications concerning the importance of support, most importantly co-worker support, are mentioned in the study. Future scope of research is also suggested based on the current findings of this study.

Keywords

Co-Worker Support, Communities of Practice, Personal Interaction, Mediation, Indian Organization.
