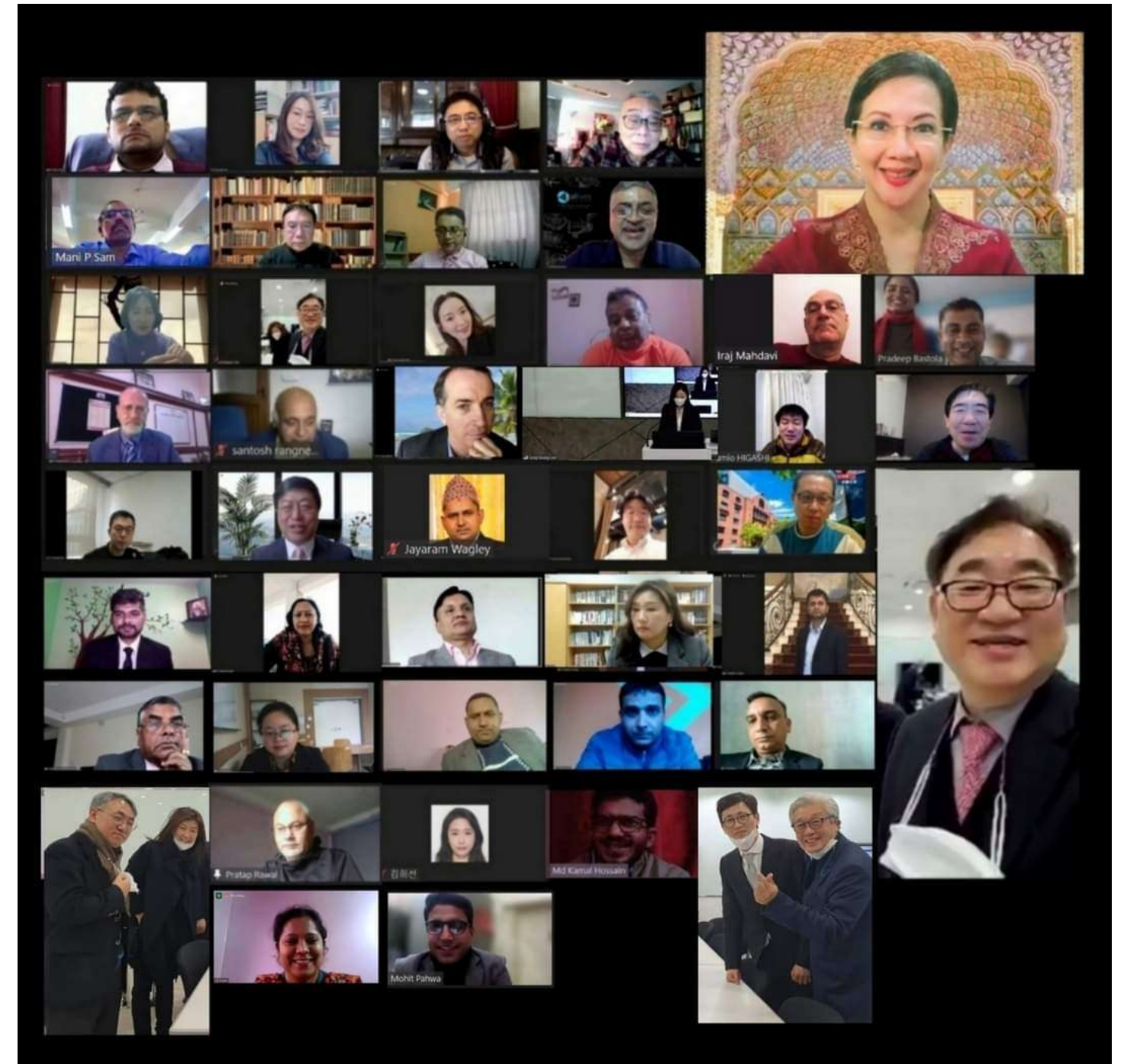25th International Conference on
IT Applications and Management

Theme: Technology and The Global Co-creation of the Future
February 8, 2022

(IITAMS)

Supported by:
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25th International Conference on IT Applications and Management

THEME: TECHNOLOGY AND THE GLOBAL CO-CREATION OF THE FUTURE

On-line Conference February 8, 2022
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Conference Plenary Session (February 8, TUESDAY)

Zoom Access Code: https://cau.zoom.us/j/85767277179

Meeting ID: 857 6727 7179

Pass Code: Not Required

Time	Plenary Session Program
16:00 ~16:50 (East Asia time) **07:00 ~ 07:50 GMT**	**Session Chair:** Kyungjin Cha (Hanyang U., Korea) **Opening Announcement** **-** Jeonghoon Lee (Program Chair of Org. Committee, Hansung U., Korea) **Inauguration Greeting** - Jung Seung Lee (President of KDSS, Hoseo U., Korea) **Welcome Greeting** - Myeong Gil Choi (Host venue, Chung Ang U., Korea) **Note on the society and conference web site** - Sateesh Kumar Ojha (Web Publication Chair, Lincoln Univ. Nepal) **Online on-the-spot greetings among conference delegates** - Members of Advisory Board and Organizing Committee of the Conference Professors Namjae Cho(Hanyang U., Korea), Uthai Tanlamai(Chulalongkorn U., Thailand), Anne-Marie Lebrun(Bourgogne U., France), Sung Kim(Chung Ang U., Korea), Kanes Rajah(CEPD London, UK), Jaehoon Whang(Yonsei U., Korea), Santosh Rangnekar(IIT Roorkee, India), Gyung Min Kim(Ewha W. U., Korea), Chi Chien Wang(National Taipei U., Taiwan), Dai Wei Hui(Fudan U., China), Seokha Koh (Chungbuk Nat'l U., Korea), Yanki Hartijasti(U. Indonesia), Alfonso Vargas-Sánchez(Huelva U., Spain), Ali Ameen(Lincoln U., Malaysia), Oliver Yau(Hong Kong Met. U., China), Kijoo Kim (Konyang U., Korea), M. Mallikarjun(Nirma U., India), Ahmed Bounfour(U. Paris Sud, France), Mani P. Sam(Rajigiri U., India), Sang-Jun Kim(Kinki U., Japan), Iraj Mahdavi(Mazandaran U. of S&T, Iran), Bernard Lee(Chinese U. of Hong Kong, China), Sora Kang (Hoseo U., Korea), Masayuki Maruyama(Int'l U. of Kagoshima, Japan), Hanna Yakavenka (Coventry U. London, UK) and other conference participants.
16:50 ~17:40 (East Asia time) **07:50 ~ 08:40 GMT**	**Keynote Speech: Seyong Lee (v.p. Arthur D. Little, Korea, v.p. Kraft Korea)** **Theme: Digital Transformation in Asian Market** **Valedictory Remark** - Namjae Cho (Chairman, International ITAM Society, Hanyang U. Korea)

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Technical Sessions

(Access each session individually using separate access code.)

(Papers and presentations will be posted at http://www.itamsociety.org/)

18:00~20:00 (East Asia time),   09:00~ 11:00 GMT

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Does Adaptability prepare us for stressful events? The role of Age and Gender

Aakash Khindri[1*], Prof. Santosh Rangnekar[2]

[1]*Research Scholar, Department of Management Studies, Indian Institute of Technology, Roorkee, Uttarakhand, India, 247667,*
E-mail: aakash_k@bm.iitr.ac.in
[2]*Professor, Department of Management Studies, Indian Institute of Technology, Roorkee, Uttarakhand, India, 247667, E-mail:*
santosh.rangnekar@ms.iitr.ac.in
[*]Corresponding Author

Abstract

The present uncertain times is a major source of stress and anxiety among people. To address this concern, we examine the linkage between ability to adapt to different situations and stress tolerance among executives working in Indian organization using a nationally representative data. Based on stress and coping theory, we found a positive association between adaptability to situations and stress tolerance. We also investigated effect of individual differences for this relationship by examining the moderating effect of gender and age and found a significant moderating effect of age over this linkage. The implications for theory and practice are discussed.

Keywords

Adaptability, Stress Tolerance, Moderation analysis, stress and coping theory

Introduction

"It is not the stress that kills us. It is effective adaptation to stress that allows us to live."

- George Vaillant

The uncertainties and disruptions in the last few years have increased the challenges in both personal and professional lives (Di Fabio & Kenny, 2019). Organizations as well as individuals are struggling to maintain their well-being amid these situations. The COVID-19 pandemic has exacerbated the existing conditions and is likely to contribute new stress-related disorders for many (Horesh & Brown, 2020)COVID-19 quickly became characterized as a global pandemic by March of 2020. Given the rapid acceleration of transmission, and the lack of preparedness to prevent and treat this virus, the negative impacts of COVID-19 are rippling through every facet of society. Although large numbers of people throughout the world will show resilience to the profound loss, stress, and fear associated with COVID-19, the virus will likely exacerbate existing mental health disorders and contribute to the onset of new stress-related disorders for many. Recommendations: The field of traumatic stress should address the serious needs that will emerge now and well into the future. However, we propose that these efforts may be limited, in part, by ongoing gaps that exist within our research and clinical care. In particular, we suggest that COVID-19 requires us to prioritize and mobilize as a research and clinical community around several key areas: (a. A recent study conducted over 10,000 Indians revealed that 74% of Indians are suffering from symptoms of stress and 88% reported anxiety (Awasthi, 2020). Amid such

situations, the ability to effectively deal with challenging and stressful situations is of utmost importance. Though there are numerous studies that explore the consequents of stress tolerance (Baird et al., 2016; Beck et al., 2014; Juarascio et al., 2016), the studies exploring the psychological predictors of the same remain few. The current study aims to explore the role of an individual's ability to adapt to situations as a potential predictor of stress tolerance. Also, the influence of demographic factors, particularly age and gender, over the association of adaptability and stress tolerance is explored through moderation analysis.

Different sections of this article are organized as follows. A review of the existing studies related to stress tolerance and adaptability led towards the formation of a theoretical model. Subsequently, the methodology, analysis and results are explained. Finally, the discussion section describes the implications for the domains of theory and practice, limitations of the study and conclusion.

Theoretical Framework

The present study is grounded in the transactional theory of stress and coping given by Lazarus (1966). The theory suggests that every individual is constantly appraising the external stimulus from environment. This appraisal of a same situation may vary among individuals based on a number of situational and personal factors (Krohne, 2002). This appraisal further induces several emotions and feelings. If the stimulus is perceived as challenging or threatening, then feelings of stress initiates coping mechanism that attempts to encounter the stressor by adjusting the person-environment relationship. The

resulting situation will be again appraised as favorable and unfavorable. The theory argues that stress could be defined as exposure to those certain unfavorable stimulus whose effect exceeds the coping capacity of the individual (Biggs et al., 2017). Based on these elements of transactional theory of stress and coping, the current study explores the positive influence of an individual's ability to adapt on her stress tolerance capacity. Addressing the important role of personal factors, this study also explores the role of gender and age over any possible association between adaptability and stress tolerance.

Literature review and Hypothesis Development

Adaptability to Situations

Adaptability is defined as an individual's ability to adjust to changing circumstances through cognitive, emotional, and behavioral alterations in behavior (Martin et al., 2012). Accepting hurdles and problems while maintaining a steady pursuit of predefined goals in the face of all unpredictability with flexibility and resilience has been described as adaptability (Datu et al., 2017). The adaptability construct has been framed as a more particular construct, career adaptability, in the context of the workplace, with a focus on the balance that an individual attempts to strike between the personal and professional worlds (Goodman, 1994). Several studies have looked into the concept of professional flexibility and found it to be linked to a number of favorable outcomes, including improved coping, a more balanced response to adversity, and decreased vulnerability to stress and anxiety (Johnston, 2018).

Stress Tolerance

An individual's stress tolerance refers to their perceived ability to deal with stress and anxiety caused by uncertain, ambiguous, and variable situations, information, or tasks. A person with greater mental resilience is more likely to persevere through difficult times. This proclivity for dealing with difficulties is frequently coupled by a willingness to accept risks, and it derives from a drive to achieve one's objectives (Birenbaum et al., 2019). Stress tolerance has also been linked to positive job engagement and inventiveness, as well as negative burnout and tiredness (Kashdan et al., 2020).

Adaptability to Situations and Stress Tolerance

The basic tenet of transactional theory of stress and coping (Lazarus, 1966) argues that a constant appraisal of external stimuli generates emotions and any stimuli appraised as a stressor initiates coping strategies to address the stressor. The coping strategy resolves the situation by readjusting the person-environment relationship. Furthermore, this perspective emphasizes that stress is a response to stimuli, appraised as harmful or threatening and that exceeds the individual's capacity to cope. Further building on this, it seems that the more an individual is able to cope or handle

the stressors, lesser the chances of the individual being stressed. Also, several past studies have reported a negative association between different forms of adaptability and stress (Johnston, 2018; Orkibi, 2021). On similar lines, based on a recent study on university students, Stockinger et al. (2021)to largely improvised distance learning formats. This study examined whether individual differences in students' capacity to adjust to situational uncertainty and novelty (i.e., adaptability have reported that adaptability was found to be negatively related to anxiety and hopelessness. In context of workplace also, individuals with high adaptability may perceive more control over uncertainty at workplace and are more likely to be confident about overcoming obstacles and thus less likely to experience stress and anxiety (Fiori et al., 2015). Based on these arguments, we hypothesize that:

Hypothesis 1: Adaptability to situations will be positively related to stress tolerance (perceived ability to deal with stressful situations).

Moderating role of age and gender

The transactional theory of stress and coping also highlights the important role of appraisal process through which meaning is assigned to different external stimulus. These appraisals might vary based on the individual differences as well as environmental factors (Biggs et al., 2017). Individual differences may influence what is perceived as stressful and how people will cope with it (Ployhart & Bliese, 2015)it is no longer acceptable to be able to perform well when things go as expected; instead individuals, teams, and organizations must be able to continuously adapt their knowledge and skills in order to remain competitive in environments which are fluid, often ambiguous, and where multiple pathways to goal attainment exist. Thus, this volume takes a multi-disciplinary approach to increasing our understanding of adaptability within complex environments by integrating cutting-edge work done by experts in the field and compiling it in one volume. Specifically, the volume takes a systems approach in that chapters describe the manifestation and antecedents of adaptability at individual, team, and organizational levels. In addition, the volume presents work on the importance of cultural adaptability, visualization requirements, measurement approaches, training strategies, and selection for adaptive performance.","author":[{"dropping-particle":"","family":"Ployhart","given":"Robert E.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Bliese","given":"Paul D.","non-dropping-particle":"","parse-names":false,"suffix":""}],"id":"ITEM-1","issued":{"date-parts":[["2015"]]},"title":"Understanding Adaptability : A Prerequisite for Effective Performance within Complex","type":"article-journal"},"uris":["http://www.mendeley.com/documents/?uuid=5e5aaffb-1114-4ed7-aa74-f072351ba3da"]}],"mendeley":{"formattedCitation":"(Ployhart &

Bliese, 2015 since an experience that is objectively same for two individuals might vary in quality, intensity, and duration for those two persons (Krohne, 2002). These arguments show that difference in personality as well as demographic characteristics could have a bearing over the cognitive appraisal of the external experiences and therefore could produce varying effects. Particularly, in case of stress and anxiety, past studies have reported a significant effect of gender and age over stress symptoms and perceived recovery (Kimhi et al., 2009). Another study conducted over school teachers in Hong Kong revealed that younger, unmarried and less experienced teachers were more likely to experience burnout (Lau et al., 2005). Therefore, based on these arguments, we hypothesize that:

Hypothesis 2: Gender will moderate the positive association between adaptability to situations and stress tolerance.

Hypothesis 3: Age will moderate the positive association between adaptability to situations and stress tolerance.

Methods

Procedure and Respondents

Executives working at junior, middle and senior positions in various manufacturing and service sector organizations were the respondents for this study. A cross-sectional survey-based research design was adopted and data were collected through convenience sampling. Initially, 500 survey forms were distributed through e-mail among executives having at least one year of work experience. All the recipients were assured about the anonymity of their identity and confidentiality of their responses. With a response rate of 40.4%, two hundred and two usable responses were received from the respondents. This sample size meets the minimum requirement of 200 sample items to maintain normality, as suggested by Hair et al. (2010)this text has provided students with the information they need to understand and apply multivariate data analysis. Hair, et. al provides an applications-oriented introduction to multivariate analysis for the non-statistician. By reducing heavy statistical research into fundamental concepts, the text explains to students how to understand and make use of the results of specific statistical techniques. In this seventh revision, the organization of the chapters has been greatly simplified. New chapters have been added on structural equations modeling, and all sections have been updated to reflect advances in technology, capability, and mathematical techniques. Preparing For a MV Analysis; Dependence Techniques; Interdependence Techniques; Moving Beyond the Basic TechniquesMARKET: Statistics and statistical research can provide managers with invaluable data. This textbook teaches them the different kinds of analysis that can be done and how to apply the techniques in the workplace","author":[{"dropping-particle":"","

family":"Hair","given":"Joseph F. Jr.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Black","given":"William C.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Babin","given":"Barry J.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Anderson","given":"Rolph E.","non-dropping-particle":"","parse-names":false,"suffix":""}],"id":"ITEM-1","issued":{"date-parts":[["2010"]]},"page":"761","title":"Multivariate Data Analysis (7th Edition.
Also, an a priori power analysis (Soper, 2021)given the probability level, the anticipated effect size (Cohen's D revealed that n= 100 is the recommended sample size to conduct a SEM analysis over the hypothesized model (given effect size is 0.50, statistical power is 0.95, significance level is 0.05, with two latent variables and 10 observed variables). The current sample size, n= 202 is therefore sufficient.

Respondents consisted of 65.35% of males and 34.65% of females. A significant portion of participants (77.23%) were between 26 and 35 years old, 16.34% were between 36 and 50 years old, and 6.44% were 51 years and above. Regarding participants' educational qualifications, 47.52% of the participants have a graduate degree, 38.61% were postgraduates, 8.91% had doctoral degrees, and 4.95% were diploma holders (See Table 1).

Measures

Stress Tolerance

Stress tolerance is a person's perceived ability to tolerate and handle confusing situations and conceptualized as a component of workplace curiosity (Kashdan et al., 2020). A four-item scale was borrowed from the workplace curiosity scale to assess respondents' stress tolerance. The responses were tallied on a seven-point Likert scale, with one indicating 'Strongly Disagree' and seven indicating 'Strongly Agree'. Sample item includes, 'The possibility of being distressed has no impact on my motivation to work on new projects'. Internal consistency was 0.77 (Cronbach's coefficient). (See Table 3)

Adaptability to Situations

Adaptability to settings was measured using a subscale from Datu et al.'s (2017) Triarchic Model of Grit Scale. Because it was created in an eastern collectivist setting, this scale was more suited for this investigation. The scale has four items with a seven-point Likert scale response format, with 1 indicating 'strong disagreement' and 7 indicating 'strong agreement.' The sample items include, 'I am able to cope with adverse life circumstances' and 'Changes in life encourage me to work harder'. The scale had an internal consistency of 0.81 (Cronbach's alpha coefficient). (See Table 3)

Data Analysis and Results

The descriptive statistics, including mean, standard deviation, inter-item correlation, square of correlation

among variables, and average variance extracted, are provided in Table 2. The results clearly indicate a high correlation between adaptability and stress tolerance (r = .565; p <0.01). The standard deviations for adaptability and stress tolerance were 0.54 and 0.83 respectively (See Table 2).

Measurement Model

Confirmatory factor analysis (CFA) was conducted to check the data measured by various instruments. A two-factor model demonstrated a decent fit (Cmin/df = 0.97, RMSEA (Root mean square error of approximation) = 0.04, CFI (Comparative fit index) = 0.982, IFI (Incremental fit index) = 0.99, SRMR (Standardized Root mean square residual) = 0.022) (See Table 5). Convergent and discriminant validity was established by calculating composite reliability (CR) and average variance extracted (AVE). Satisfactory convergent validity is established through a CR score of more than 0.7 (Fornell & Larcker, 1981; Malhotra & Dash, 2011)in addit...","author":[{"dropping-particle":"", "family":"Fornell","given":"Claes","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Larcker","given":"David F.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"https://doi.org/10.1177/002224378101800104","id":"ITEM-1","issue":"1","issued":{"date-parts":[["1981","11","28"]]},"page":"39-50","publisher":"SAGE PublicationsSage CA: Los Angeles, CA","title":"Evaluating Structural Equation Models with Unobservable Variables and Measurement Error:","type":"article-journal","volume":"18"},"uris":["http://www.mendeley.com/documents/?uuid=1e8cb582-114c-3798-b439-53d6d7397d04"]},{"id":"ITEM-2","itemData":{"author":[{"dropping-particle":"","family":"Malhotra","given":"N.K","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Dash","given":"S.","non-dropping-particle":"","parse-names":false,"suffix":""}],"id":"ITEM-2","issued":{"date-parts":[["2011"]]},"publisher":"Pearson Publishing","publisher-place":"London","title":"Marketing Research: An Applied Orientation","type":"book"},"uris":["http://www.mendeley.com/documents/?uuid=e304a25c-9d69-4f82-9fff-18f65f8d30c5"]}],"mendeley":{"formattedCitation":"(Fornell & Larcker, 1981; Malhotra & Dash, 2011. Both study variables are adequately distinct from each other since the of inter-factor correlation among them is not greater than the square root of corresponding AVE, thus suggesting discriminant validity (Fornell & Larcker, 1981).

Common Method Biasness

The possibility of common method biasness might be there since this study uses cross sectional data collected through self-reported measures. In line with the suggestions of Podsakoff et al. (2003), anonymity and confidentiality of responses were ensured. Also, the survey instrument was designed so that different sections were clearly labelled and variables were defined properly in accordance to the suggestions of Brannick et al. (2010) to further reduce the chances of method variance. Furthermore, Harman's single factor test (Harman, 1976) indicates that variables fail to converge on a common single factor, and 46% of total variance could be explained by first factor, which is less than half of the total variance. Therefore, based on these findings, it could be considered that common method biasness was not a threat in the current model.

Moderation Analysis

To test the proposed model, the current study used PROCESS macro (Hayes, 2012), Model 2 in SPSS software. Through 5000 bootstrapped resamples, we checked the association between predictor (adaptability to situations) and criterion variable (stress tolerance) and the moderating effect of age and gender over this relationship.

The results in Table 6 represent the moderation effect of age over the relationship of adaptability and stress tolerance. Also, the Table depicts the bootstrapped results. Adaptability to situations was found to be positively related to stress tolerance (β = .97; p < 0.001), thus providing evidence for Hypothesis 1. Although, neither of age and gender was significantly associated with stress tolerance, the interaction of age and adaptability was found to have a significant positive on stress tolerance (β = 0.92; p < 0.01). These findings lend support to Hypothesis 2. No significant effect of interaction of gender and adaptability was detected over stress tolerance indicating that hypothesis 3 was not supported. To illustrate this pattern, Figure 2 represents the moderating effect of age over the positive relationship between adaptability to situations and stress tolerance.

Discussion

The present study examined the moderating effect of demographic variables, particularly age and gender, over the relationship between adaptability to situations and stress tolerance. Specifically, we wanted to explore the extent to which individual differences in terms of age and gender could influence the association between adaptability and stress tolerance. The results demonstrated that in an Indian context, an ability to effectively adjust to changing situations predisposes an individual towards better coping against stressful situations. The results also showed a moderating effect of age over this association which is in line with the stress and coping theory that suggests that individual differences may influence the 'appraisal process' of external situations resulting in different levels of stress and coping tendencies.

Theoretical and Practical Implications

The study has multiple implications for the domain of theory and practice. Our study contributes to the literature in three different ways. First, it extends the growing body of literature that explores that association of adaptability and stress (Chen et al., 2019; Ocampo et al., 2018; Orkibi, 2021). Second, our study tests the person-situation premise (Heller et al., 2004), suggesting that individual personality do matters in the times of crisis. Finally, we contribute to the existing literature on psychological predictors of stress tolerance (Rettie & Daniels, 2021; Schutte & Malouff, 2020). The study works upon the data from Indian working professionals and uncovers the role of adaptability as a potential predictor of stress tolerance. Such a finding is extremely useful for Indian organizations given 70% of working Indians reported feelings of stress once during the work week (Sheth, 2020). A better knowledge about the predictors of stress tolerance could assist practitioners in developing training modules aimed at improving adaptability among employees to enhance their tolerance against stress and burnout. The moderating effect of age over the linkage between adaptability and stress tolerance could further help in recognizing the differences among employees so that the training efforts could be calibrated better. Also, the characteristics such as adaptability to situations are of utmost importance in the current pandemic-induced uncertainty.

Limitations of the study and Future directions

Although the findings of the study are in line with the theory, there are some limitations that can be addressed in future studies. The current study is based on a cross-sectional methodology; thus, any causal implications are constrained. Other designs, such as longitudinal studies and experimental methods, could be used in future studies to address this issue. Furthermore, adoption of self-reported measures to collect data could introduce method biasness. Although we have employed different statistical and procedural measures, its possibility cannot be ruled out entirely. The moderating variable, age has been measured as a categorical variable with three different categories. Future studies could measure the age as continuous variable to further analyze any possible conditional effects. Finally, we have collected data from working professionals from a developing economy, India. In future studies, scholars may also consider to undertake cross-cultural data from multiple countries.

Conclusion

The current study looked into the role of adaptability to situations as a possible predictor of ability to handle stressful situations. The influence of gender and age of respondents on this relationship has also been investigated. The findings show that adaptability has a favorable impact on a person's ability to tolerate stress. This positive association was found to be moderated by an individual's age. With age, the positive relationship between adaptability and stress tolerance first enhances and then dampens with strongest effects for the age group ranging from thirty-six to fifty years. The study uses both procedural and statistical techniques to control for common method bias, and no substantial bias was found. The research contributes to a better understanding of how the ability to adapt to change can boost tolerance against stressful situations.

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Table 1 Socio Demographic Characteristics of Participants

Characteristics	N	%
Gender		
Men	132	65.35
Women	70	34.65
Total	**202**	**100**
Age, range		
26-35 years	156	77.23
36-50 years	33	16.34
51 years and above	13	6.43
Total	**202**	**100**
Education Level		
Diploma	10	4.95
Graduate	96	47.52
Post Graduate	78	38.61
PhD	18	8.92
Total	**202**	**100**
Job Position		
Junior Level	61	30.19
Middle Level	99	49.01
Senior Level	42	20.79
Total	**202**	**100**
Work Experience		
Up to 10 years	94	47.00
11-20 years	65	32.50
More than 20 years	43	21.50
Total	**202**	**100**
Organization Status		
Public	45	22.27
Private	147	72.77
Other	10	4.95
Total	**202**	**100**

		Mean	S.D.	CR							
	Factors				1	2	3	4	5	6	7
1	Gender	---	---	---	---						
2	Age	---	---	---	0.06	---					
3	Education	---	---	---	-.214**	0.09	---				
4	Job position	---	---	---	-0.08	-.369**	0.00	---			
5	Work Experience	---	---	---	.148*	.844**	0.01	-.372**	---		
6	Adaptability to Situations	0	.540	.80	0.06	0.00	-0.10	-0.11	0.03	**.710**	
7	Stress Tolerance	0	.835	.75	0.06	0.07	-0.12	-0.07	0.09	.565**	**.708**

Table 2: Descriptive Statistics**Note**. M=Mean; S.D.=Standard Deviation. N=202. **p < 0.01, *p < 0.05. The square root of average variance extracted (AVE) of each construct (No. 6, 7) is represented in **bold** along the diagonal; Values below the diagonal represent inter-construct correlations.

Table 3: Coding of Age for analysis

Age	Coded as	Dummy 1 (W1)	Dummy 2 (W2)
21-35 years	0	0	0
36 – 50 years	1	1	0
51 years and above	2	0	1

Table 4: Measurement Model Results

Variable	No. of items	α (Alpha coefficient)	Items	Factor Loadings	SE	CR
Stress Tolerance	3	0.77	ST1	0.70 (**)		0.75
			ST2	0.75 (**)	.136	
			ST3	0.67 (**)	.134	
Adaptability to Situations	4	0.81	ADAP1	0.60 (**)	.119	0.80
			ADAP2	0.63 (**)		
			ADAP3	0.82 (**)	.198	
			ADAP4	0.77 (**)	.180	

Note: α= Cronbach alpha CR = Composite reliability of the measurement model; SE: Standard Error; Significance: ** p<0.001 (2-tailed)

Table 5: Model Fit Measures

Model Fit Indices	Value	Cut-off criteria	Remarks
x/df	0.97	< 3	Yes
SRMR (standardized Root mean square residual)	0.022	< 0.08	Yes
RMSEA (Root mean square error of approximation)	0.04	< 0.06	Yes
(IFI) Incremental Fit Measures	0.99	> 0.95	Yes
(TLI) Trucker-Lewis Index	0.982	> 0.95	Yes
(CFI) Comparative Fit Index	0.982	> 0.95	Yes

Table 6: Moderation analysis of Stress tolerance on relationship between positive affect to future self and adaptability to situations

Model Summary $R^2 = .4707$; f = 24.64	*Stress Tolerance (Y); 95% CL*					
	β	SE	t	p	LL	UL
Constant	-0.041	0.077	-0.539	0.591	-0.193	0.110
Adaptability to Situations (X)	0.970	0.132	7.374	0.000	0.711	1.229
Gender	0.016	0.092	0.169	0.866	-0.166	0.197
Interaction 1 (Gen*X)	-0.054	0.166	-0.325	0.746	-0.380	0.273
W1	-0.041	0.136	-0.306	0.760	-0.309	0.226
W2	0.171	0.187	0.914	0.362	-0.198	0.540
Interaction 2 (X*W1)	0.922	0.336	2.746	0.007	0.260	1.585
Interaction 3 (X*W2)	0.169	0.241	0.701	0.484	-0.307	0.645

Model Summary

	R	R^2	F	df1	df2	p
	0.6860	0.4707	24.641	7	194	0.000

Bootstrapped Results

	Coeff	Boot-Mean	BootSE	LLCI	ULCI
Constant	-0.041	-0.042	0.076	-0.197	0.103
Adaptability to Situations (X)	0.970	0.991	0.181	0.679	1.376
Gender	0.016	0.012	0.094	-0.170	0.197
Interaction 1 (Gen*X)	-0.054	-0.063	0.202	-0.477	0.328
W1	-0.041	-0.042	0.122	-0.282	0.197
W2	0.171	0.185	0.132	-0.064	0.431
Interaction 2 (X*W1)	0.922	0.914	0.264	0.387	1.426
Interaction 3 (X*W2)	0.169	0.115	0.237	-0.382	0.492

Figure 1: Hypothesized Model

Figure 2: The moderating effect of age on the
relationship of Adaptability to Situations and Stress
Tolerance
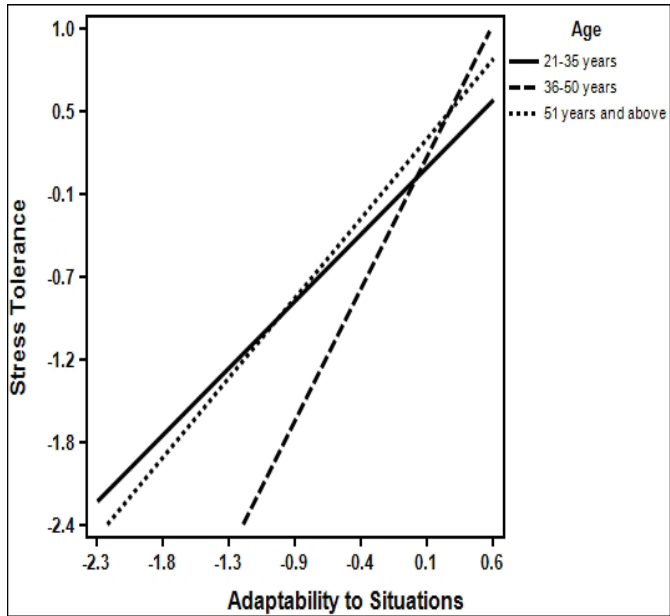
Industry 4.0, Circular Economy, and Tourism

Alfonso Vargas-Sánchez[a]

[a] Department of Management and Marketing, Faculty of Business Studies and Tourism
Huelva University, 21002 Huelva, Spain
Tel: +34-959-217845, Fax: +34-959-217839, E-mail: vargas@uhu.es

Abstract

This research is situated at the intersection between industry 4.0, circular economy and tourism, in an attempt to observe the fourth industrial revolution at the service of the application of circular economy principles in the tourism industry. This approach has gained importance due to the COVID-19 pandemic, which has accelerated fundamental dynamics of change linked to business digitization and environmental sustainability.

Within the theoretical framework delimited by the aforementioned intersection, the 'goCircular Radar' project, launched by 'TheCircularLab', from Ecoembes (Spain), has been taken as an empirical reference. Among the 165 startups in the circular economy sector, special attention has been paid to those that are oriented, or have a potential application, to tourism. The activities they carry out are described, with particular attention to the technologies they use and their contribution to circularity.

Keywords

Tourism 4.0, Circular Tourism, Startups

Introduction

The interest in applying the principles of the circular economy to tourism is certainly recent and is taking place in an environment of technological disruption that can be framed in what is known as the 'revolution 4.0'. In this context, it is clear that new technologies are essential to advance towards a new model of circular tourism, as a path towards environmental sustainability. In the words of Gaztelumendi et al. (2019, 73): "The circular economy and the technological revolution are intrinsically linked and are inseparable phenomena".

As Ostojic (2016) points out, the fourth industrial revolution is characterised by the confluence of three major factors: the technological advances of 'industry 4.0'; the change of the economic model from a linear model, based on 'make-use-dispose', towards a circular, sustainable and responsible one; and the need to effectively address the threat of climate change. In turn, the main characteristic of 'industry 4.0', says the aforementioned author, is the interconnection of processes, products and services through the massive and intensive use of mobile Internet, sensors and artificial intelligence, allowing the optimisation of energy efficiency, reliability and the availability of products and services across different industries.

Consequently, this paper is situated at the intersection between 'industry 4.0', the circular economy and tourism, with the aim of demonstrating how the technological developments of the fourth industrial revolution are driving the application of the principles of the circular economy, as a branch of the science of sustainability (Geissdoerfer et al., 2017), in the tourism sector. This approach applied to the tourism industry has gained prominence as a consequence of the COVID-19 pandemic, which has accelerated fundamental change dynamics mainly linked to digitalisation and environmental sustainability.

To this end, within the theoretical framework delimited by the aforementioned intersection, set out in the following section, a series of experiences is presented based on the 'goCircular Radar' project, recently launched by Ecoembes' 'The CircularLab', in Spain. As of 30 September 2021, 165 startups in the circular economy sector have been participating in the project, with special attention paid to those that are oriented, or have a potential application, to the tourism industry. The activities carried out by these startups are described, with particular attention to the technologies they use and their contribution to circularity.

Specifically, after the aforementioned theoretical framework, a description is given of the startups in the circular economy sector in Spain. Next, some examples of real or potential application to tourism are shown, after which the conclusions reached are set out.

Literature review

Tourism 4.0 is the manifestation of the fourth industrial revolution, or 'industry 4.0', in the tourism sector.

The generic term 'industry 4.0' is used to technologically

qualify organisations' value chains, referring to the ability to integrate complex machines and devices with networked sensors and software. While there is no unanimous definition of this concept, the term 'industry 4.0' often encompasses modern automation systems, data exchanges and technologies that address digital transformation, with the ability to transform existing business models in many sectors (Sari, 2018), including tourism. As Lu (2017) points out, two key factors emerge in the fourth industrial revolution: integration and interoperability, i.e., the ability of two systems to understand each other and use each other's functionality to exchange data and share information and knowledge.

On this basis, 'tourism 4.0' is defined (Pencarelli, 2020, 457) "as the new tourism value ecosystem based on the high-tech service production paradigm and characterised by the same six common principles of 'industry 4.0': (a) interoperability, guaranteed by the standardisation of communication codes; (b) virtualisation, through which cybernetic systems can control physical processes; (c) decentralisation, in which each computer or technological device has autonomous decision making capability even within centrally-controlled procedures; (d) real-time data collection and analysis capability; (e) service orientation, towards customers both internal and external to organisations; (f) modularity, which allows flexible adaptation to changes through the substitution and/or expansion of individual modules".

In short, it is clear that the advent of the fourth industrial revolution, the development of technological devices and the Internet are having a profound impact on the tourism industry. In the era of 'tourism 4.0', the digital revolution is changing the behaviour of tourists, businesses and destinations, projecting them towards a 'smart' perspective. As Pencarelli (2020, 459) argues, "digitalisation has significantly changed the travel and tourism industry, transforming it into a 'smart' sector; in other words, an innovative and technologically advanced sector that is fully immersed in the paradigm of industry 4.0".

Indeed, 'tourism 4.0' has led to a new management paradigm known as 'smart tourism', which, on the basis of an advanced digital space, makes possible the application of a data-intensive logic of all kinds for problem analysis and decision-making in order to improve the tourist experience and the quality of life of residents in host communities, with the values of innovation and sustainability as guides (Vargas-Sánchez, 2016).

On the one hand, therefore, the concepts of 'tourism 4.0' and 'smart tourism', as shapers of this industry (Vargas-Sánchez and Saltos, 2019), revolve around new digital technologies, as a technical platform that allows the convergence of both. But, on the other hand, there are some characteristics that differentiate them. Thus, while 'tourism 4.0' refers mainly to the hardware and software requirements of technologies, 'smart tourism'

refers to an innovation-oriented use of the Internet and Information and Communication Technologies (ICTs), aimed at combining technological, human and management resources in search of economic, social and environmental sustainability. 'Smart tourism' implies, for example, "paying particular attention to sustainable mobility, social cohesion, protection of people's privacy, and optimization of waste management as well as water and energy consumption in tourist locations" (Pencarelli, 2020, 460). This character of smartness serves as a link to the other key topic in this work: the circular economy (circularity in the tourism economy). The figure below (No. 1) aims to show the relationship between all these concepts.
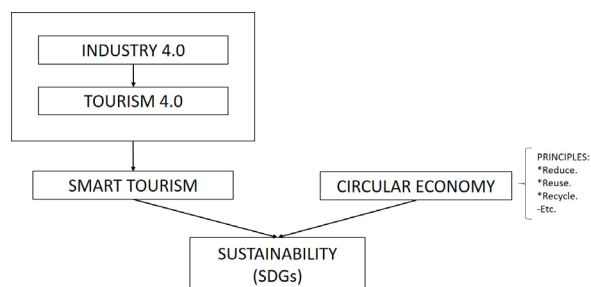
Figure 1 - Theoretical framework

The circular economy, as an alternative to the unsustainable linear model to which we are heirs, could be defined as one in which the value of products, materials and resources are kept in the economy for as long as possible, minimising the generation of waste. This requires the creation of circular and smart ecosystems (Perfetto and Vargas-Sánchez, 2018) through collaboration between companies and other agents, even from different sectors (Vargas-Sánchez, 2020c). To this end, Ritchie and Freed (2021) talk about the 6Rs of circularity: Reject (say no to what is not needed), Reduce (use fewer inputs or use them for longer), Remanufacture (extend the useful life of products), Reuse (find other uses for them), Recycle (give materials a new life) and Rot (return them to the earth).

Consequently, the circular economy redefines growth patterns, gradually decoupling economic activity from the consumption of finite resources and removing waste from the system. It is thus recognised as a sustainable growth strategy (Ellen MacArthur Foundation, 2015) and a key response in the necessary evolution/transformation of companies towards sustainable business models (Bocken and Short, 2021). However, authors such as Sørensen et al. (2020) highlight the difficulty of the transition towards a circular perspective in tourism, a consequence of the large number of actors involved and the hedonistic consumption model that characterises this activity.

In terms of the transition towards a circular economy model and its application to the tourism industry, the technological revolution referred to (or 4.0) is a key

contributor to deepening the application of circular economy principles to tourism. Thus, Mazilescu (2019), in his overview of how emerging technologies can underpin the development of tourism and travel, states that the dematerialisation of the economy will be accelerated through a transition to a circular economy favoured by the new industrial revolution. In the same vein, Gaztelumendi et al. (2019) state that it is in this paradigm of technological revolution that the circular economy applied to tourism has been born.

For Ramos and Brito (2020), the technological development of 'tourism 4.0' and the circular economy must go hand in hand in order, from the point of view of environmental sustainability, to advance in the fulfilment of the Sustainable Development Goals of the 2030 Agenda of the United Nations Organisation, such as Nos. 11 (sustainable cities and communities), 12 (responsible consumption and production), 13 (climate action), 14 (life below water) and 15 (life on land). In this sense, Pan et al. (2018) present the case of the 'Green Island' in Taiwan, understanding the circular economy as a restorative and regenerative economy, whose design is oriented towards maintaining as much as possible the use of resources, as well as their value, throughout their life cycle; therefore, minimising waste and converting them into valuable products.

Along these lines, Pencarelli (2020) considers that, in the near future, it will not be possible for tourism ecosystems and territories to take only digital innovations into account, rather they will have to include smart tourism perspectives such as sustainability, the circular economy, quality of life and social value.

However, although smart tourism and the circular economy intuitively interconnect, as they both focus on sustainable value creation, their mutual implications have not been sufficiently investigated (Del Vecchio et al., 2021). Positioning themselves in this gap, these authors, through the case of Ecobnb (https://ecobnb.com), present how these two paradigms (smartness and circularity) are inextricably intertwined to achieve greater levels of sustainability (economic, social and environmental) in the field of tourism, helping to understand that, in effect, these are two fundamental lenses when it comes to managing complexity and driving tourism companies and destinations towards innovation in business models and sustainable value creation processes. The aforementioned integration is proposed as the way to overcome the obsolescence of traditional management models in tourism companies and destinations, considering smart tourism and the circular economy as key levers to drive a paradigm shift in this sector (Del Vecchio et al., 2021).

Ultimately, being smart also means being sustainable: the label of smart tourism cannot be attributed without a sustainability record to back it up. Likewise, a company or a destination cannot be considered competitive today

unless it develops in a sustainable manner, for which the circular economy is a seemingly inevitable path (Vargas-Sánchez, 2018, 2021).

Startups in the circular economy sector in Spain

To approach the map of startups related to the circular economy in Spain, we will take as a reference the compilation available within the 'goCircular Radar' project of 'TheCircularLab', promoted by Ecoembes.

Ecoembes is a non-profit business-based organisation, created in 1996 and located in Madrid, whose mission is to provide society with a collective response from economic agents to environmental issues related to the consumption of household packaged products, achieving compliance with the objectives set by law, with the greatest efficiency in the use of the company's resources. Among its initiatives is 'TheCircularLab' (https://www.thecircularlab.com/en/), which, born in 2017 and based in the city of Logroño, is defined as an open innovation centre specialised in the circular economy, which focuses its activity on the study, testing and development of best practices in the field of packaging and its subsequent recycling. To this end, it addresses all phases of the life cycle of packaging: from its conception, through eco-design, to its reintroduction into the consumer cycle through new products.

TheCircularLab launched the 'goCircular Radar' project in 2021, conceived as an open innovation community for startups and entrepreneurs in the circular economy sector. This community aims to bring together startups that, related to the circular economy, have a clear focus on innovation. The requirements are threefold: to be established and be less than 10 years old; to have a high level of innovation in their products or business model; and to offer a portfolio of solutions or products that can contribute to the circular economy (https://radar.thecircularlab.com/)[1].

Although the startups included in 'goCircular Radar' are almost all national, their geographical scope is not limited to Spain. Specifically, of the 165 companies registered at the end of September 2021, 151 are Spanish; the remaining 14 registrations are mainly distributed between the Netherlands (5) and the United Kingdom (3).

At the regional level, the Autonomous Communities that dominate are the Community of Madrid (41), Catalonia (33) and the Community of Valencia (20), followed by Andalusia (14).

Most of them were set up from 2017 onwards (one hundred in total, i.e., 60.6%), with 2020 being the year with the highest number of registrations (35, 21.2%). The

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1   However, there are older cases (albeit very few) in their database and the link between some of their records and the circular economy is doubtful or not evident (sometimes the circular economy and sustainability seem to be confused). As for the level of innovation, its measurement is difficult, if not subjective.

oldest are from 2009 (1) and 2010 (1).

The main areas of activity are manufacturing (one third, 33.3%) and technology development (23.0%). Between them, they account for more than half of the registered startups (see table 1).

Table 1 - Main areas of activity

	Frequency	Percentage
Consulting	19	11.5
Distribution and logistics	2	1.2
Financing	1	0.6
Industrial services	4	2.4
Manufacturing	55	33.3
Online store	17	10.3
Other activities	21	12.7
Retail	7	4.2
Technology development	38	23.0
Training	1	0.6
Total	165	100.0

Source: own elaboration.

In terms of the stage of the value chain in which they operate, their distribution is fairly balanced, namely, in order of importance: recycling and second life (38.2%), eco-design, new materials and manufacturing (32.1%), as well as consumption and general public (29.7%).

Finally, the electronics and ICT value chain is the most frequented (13.9%), although the dispersion is large in this respect. More details in table 2.

Table 2 - Value chain

	Frequency	Percentage
Building and construction	9	5.5
Electronics and ICTs	23	13.9
Others	68	41.2
Packaging	16	9.7
Plastics	15	9.1
Textile	15	9.1
Vehicles and batteries	1	0.6
Water, food and nutrients	18	10.9
Total	165	100.0

Source: own elaboration.

A case that clearly exemplifies the convergence between industry 4.0 and the circular economy is that of Interitem S.L., a technology company founded in 2015 and based in Gandía (Valencia). As can be seen on its website (https://qrtracing.com/), its main activity consists of the development and commercialisation of software based on solutions for moving towards a circular economy model in industry 4.0. Specifically, they have a patented system, called QRtracing, which, by reading QR codes, allows the integral and geo-located control and traceability of packaging, containers and other industrial assets in real time. The data collected is processed through a dynamic cloud platform accessible from any device connected to the Internet. Apart from other functionalities, from the point of view of circularity, it allows the status and location of each asset to be known in order to facilitate

its reuse, avoiding possible cross-contamination, or the management of its recycling.

It is also worth mentioning RDNest S.L., a technology-based startup owned by the University of Valladolid and whose activity began in January 2017. It is located in the Castilian-Leonese capital (Valladolid). They define their main activity as the development of hardware and software solutions in the field of the Internet of Things, Industry 4.0 and Artificial Intelligence with an application in circular economy projects (among others). Waste management is part of its sectorial solutions, through container filling sensors, calculation of optimal collection routes, and tools for task planning support. There are also those linked to events, providing information on the flow of people in theme parks and shopping centres, the location of children in large facilities, as well as venue information and visitor guidance. More information can be found on its website (https://rdnest.com).

Others such as Orbisk, although of Dutch origin, will be mentioned below, with reference to some elements of their business models.

Some examples of potential application to tourism

Among all the startups registered in 'goCircular Radar', we extract some of them whose activities are oriented, or have a potential application, to the tourism sector. These are reflected in table 3.

Table 3 - Startups with solutions potentially applicable to tourism companies and destinations

Name (alphabetical order)	Value chain	Stage in the chain	Main area of activity
(1) Economía Circular Canarias	Others	Consumption and general public	Training
(2) Orbisk	Water, food and nutrients	Consumption and general public	Technology development
(3) Sloowy	Others	Eco-design, new materials and manufacturing	Technology development
(4) Sorbos	Water, food and nutrients	Consumption and general public	Manufacturing
(5) Sostenibles Network	Water, food and nutrients	Consumption and general public	Online store
(6) Souji	Others	Recycling and second life	Manufacturing
(7) Sunny-tots	Others	Recycling and second life	Retail
(8) Yo aprovecho	Water, food and nutrients	Consumption and general public	Other activities

Source: own elaboration.

Their respective main activities are summarised below:

(1) Economía Circular Canarias (https://economiacircularcanarias.com/) offers: training in the circular economy and sustainability (accommodations, restaurants, artisans, companies in general); circular economy projects in different areas such as gastronomy, sustainable tourism, sustainable mobility, the circular economy for companies in general; consultancy for public administrations and private companies as a service that advises on the implementation of circular actions; directories of the circular economy and sustainability organisations; disseminating the latest news on the circular economy in Europe, Spain and the Canary Islands.

(2) The Dutch company Orbisk (https://www.orbisk.com) claims to have developed the world's first fully automated food waste monitor. The waste bin of hospitality units (e.g., Eurostars hotel chain), catering companies, etc., is equipped with a scale and a smart camera. The camera runs an Artificial Intelligence (AI) algorithm for image recognition that identifies ingredients, recording what and how much food is wasted, as well as when and why. This information can be used to find and optimise inefficiencies in the food supply process. Through an action-oriented dashboard, it helps to balance portions, optimise storage and plan more efficiently. This will result in significant economic value due to savings in purchasing, personnel and waste disposal, as well as utility costs. In this way, food waste can be avoided, estimating an annual saving of more than 4,000 kilos of food waste for a medium-sized restaurant, valued at between €20,000 and €60,000, which would result in a net margin improvement of up to 4%.

(3) Sloowy (http://sloowy.com/) is based on 'BeachSharing', a digital model in which the customer only pays for the minutes they use, avoiding the need to go loaded to the beach and reducing the environmental impact on the coastline. The company installs its bases at the main access points to the beach and the customer only has to pick up their chair and/or umbrella via an app.

(4) According to the company, Sorbos (https://www.wearesorbos.com) manufactures the first edible and aromatic straws on the market.

(5) Sostenibles Network (www.marketsostenibles.es) offers an online marketplace of small sustainable producers for direct sales to the end customer and the HORECA channel. It works with national producers and artisans carefully selected for their good practices in sustainability. Within their network, they have started to identify SMEs in the agri-food sector that are applying circular economy approaches.

(6) Souji (https://souji.es/) is an innovative liquid that, when mixed with used cooking oil in the correct proportions and shaken for 1 minute, transforms it into an environmentally friendly and pleasant smelling multi-purpose detergent. Without caustic soda or any handling risks, the customer does the mixing. Its function is to promote the recycling and reuse of waste oil from the point of origin, whether private homes or catering establishments, thus promoting the circular economy.

(7) Sunny-tots (https://www.sunny-tots.com/) gives a second life to consumer products by renting out family equipment for travellers (pushchairs, highchairs, travel cots, etc.).

(8) Yo aprovecho (https://yoaprovecho.com) is a free mobile app that sells surplus food from catering and food businesses. These are products in perfect condition that, due to their best-before date, cannot be sold the following day. These foods are offered for sale at reduced prices on the app. This avoids waste and reduces greenhouse gas emissions, while at the same time boosting purchases in local businesses.

In addition, let us look a little more closely at those companies with a stronger technological component (table 4).

Table 4 - Technologies 4.0 at the service of circular economy objectives

Startups	Technologies 4.0	Circular Economy Objectives
Orbisk	AI algorithm for image recognition	Reducing food waste (*)
Sloowy	Mobile App	Reuse of beach chairs and umbrellas through a sharing economy model
Sostenibles Network	E-commerce	Environmental regeneration through direct sales of sustainable products to the end consumer (**)
Sunny-tots	Web	Re-use of children's products for travellers (by rental, delivery and collection)
Yo aprovecho	Mobile App	Reducing food waste

See:

(*) https://www.youtube.com/watch?v=bxdT6Xr0gTo&t=65s

(**) https://www.youtube.com/watch?v=zlfINwK8jpA

Source: own elaboration.

Conclusions

As Centobelli et al. (2020) point out, research at the intersection between the circular economy and digital innovation has highlighted how key enabling technologies of industry 4.0 can be useful to accelerate some circular economy objectives and enhance sustainable competitiveness and smart growth. However, how companies can practically apply these technologies to achieve specific circular economy objectives remains a research question to be explored, with a marked lack of empirical evidence at the level of, for example, their impact on business models (Vargas-Sánchez, 2020a).

Focusing on the startups related to the circular economy that are most closely linked to technological development and tourism, the preliminary conclusion is that the use of the most innovative technologies is at an early stage, still focused, with some exceptions, on mobile apps and e-commerce solutions. The potential for growth in the application of technologies 4.0, therefore, remains very large.

In terms of its use for the implementation of circular economy principles in the tourism sector, the reduction of food waste has emerged as the most focused objective so far. However, it is pertinent to note that the technological factor is not the only one to be considered in achieving this. As Chawla et al. (2021) point out, factors such as the business model and brand strategy must also be taken into account, as they directly determine operational routines and staff behaviour in this area.

Business models based on the product-as-a-service concept (pay-as-you-go or rental) are also spreading in the tourism sector, with the idea of facilitating travellers' journeys while promoting the reuse or second life of products that do not need to be purchased or brought to the destination. In this respect, it is relevant to consider the steps proposed by Ritchie and Freed (2021) to develop a circular business structure, namely: identify possible material loops (inventory material flows in the organisation and identify those that can be optimised); consider innovative business models (circular sourcing, resource recovery, product life extension, sharing platforms, product as a service); involve employees and other stakeholders (brainstorm with employees, establish links with the local community, involve customers, etc.); develop a message (create a narrative for your circular economy strategy to engage more stakeholders); test and learn (compare and improve).

Finally, some notes on the limitations of this study and future lines of research that could be opened. It is clear that its merely descriptive and static nature confines its contributions to the presentation of a snapshot. Observing its evolution over time would be necessary to detect trends. In addition, complementing the quantitative description with qualitative approaches would favour the understanding of the opportunities and challenges that the convergence between industry 4.0 and the circular economy are representing for the tourism sector, as well as explain how they are being addressed, in line with the research agenda proposed by Vargas-Sánchez (2020b).

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Personal interaction and future prospect: examining the mediating role of individual's teamwork preference

Anjali Dutta[a] and Santosh Rangnekar[b]

[a]Department of Management Studies, Indian Institute of Technology, Roorkee, Uttarakhand, India.

E-mail- ac_dutta@bm.iitr.ac.in

[b]Department of Management Studies, Indian Institute of Technology, Roorkee, Uttarakhand, India.

E-mail- santosh.rangnekar@ms.iitr.ac.in

Abstract

Future prospects for an employees plays an important role in motivating them and creating an intention to remain in their current. But, only training interventions and creating a learning organization cannot gurantee a promising career for employees. Socio-psychological support is also a vital aspect for career development in the employing organization. In this study, we aim to investigate the relationship between personal interaction and future prospects with the mediating role of individual employee's preference for teamwork. The data was collected from employees working in Indian organization. Confirmatory factor analysis and Structural equation modelling was performed to analyse the hypotheses. The findings demonstrated a positive relationship between personal interaction and future prospects. Moreover, individuals' teamwork preference was found to partially mediate the positive relationship between personal interaction and future prospects. The discussion and theoretical and practical implications based on the findings are also elaborated. Limitation and future research directions are also discussed.

Keywords

Personal interaction, preference for teamwork, future prospects, mediation, Indian organization

Introduction

Future prospects for an employee relate to those aspects of a job that fosters employees' aspiration to remain employed in an organization (R.J. Taormina, 1997). Employees' chances of remaining employed, potential increments in their current salary, future assignments, promotions, recognitions, rewards make the job more attractive to the employee (R.J. Taormina, 1997). The concept of future prospects deals with the future career opportunity of the employee in her or his current organization. Cerdin et al. (2020), in their study, asserted that management practices such as training, attractive promotions and professional development programs might enhance the employability of their employees, ultimately developing better future career prospects. The future

prospect in the current organization remains within that organization for an employee; therefore, internal sources for such prospects are more reliable than external sources. A better understanding of the antecedents for prospects related to the socialization perspective in the organization is practically essential apart from considering the HR and management practices, as such insights may improve the social relations at the workplace. This may ultimately help employees receive knowledge and information related to their jobs.

Personal interaction at the workplace is the informal communication for sharing knowledge and ideas related to their job (Yi, 2009)little effort has been put into developing a valid and reliable measure of KSB. The primary purpose of this study is to develop a new measure

of KSB with desirable psychometric properties - a well-developed KSB scale with a sufficient level of reliability and validity. This main objective was achieved by using the following procedures: (1. Knowledge sharing behaviour of employees is levered with increasing interpersonal interaction. In its explicit and tacit form, knowledge is endeavoured by the employees and the organization itself. However, explicit knowledge is dispersed through emerging advanced technologies (Griffith et al., 2003), but personal interactions among employees are the platform for transferring tacit knowledge (Bertels et al., 2011)it is no surprise that dispersed collaboration is frequently being used by product development teams. A necessary but not sufficient condition for innovation performance is the sharing of tacit, non-codified and explicit, codified knowledge by the team. Situated learning theory, however, predicts that tacit knowledge sharing will be largely prevented by \"decontextualization.\" Therefore, increasing usage of dispersed collaboration will decrease levels of tacit knowledge-crucial to innovation and organizational performance-in the business unit. This research investigates the moderating role of mechanisms believed to enable tacit knowledge transfer in the front end of innovation. Using data from 116 business units, the moderating role of communities of practice and organizational climate on the relationship between the proficiency of dispersed collaboration and front end of innovation performance is investigated. Encouragement of communities of practice is found to moderate the relationship between proficiency of dispersed collaboration and front end of innovation performance on the business unit level. More specifically, proficiency of dispersed collaboration is not related at all to front end of innovation performance in business units with low support for communities of practice; but a positive relationship exists in business units with high support for communities of practice. This study does not provide support for the moderating effect of organizational climate on the relationship between proficiency in dispersed collaboration and front end of innovation performance. However, supportiveness of climate has a significant direct effect on front end of innovation performance. The findings of this study suggest that managers should simultaneously invest in increasing proficiency in dispersed collaboration and supporting communities of practice. Either one by itself is insufficient. Because of its significant direct effect, managers should also nurture an open climate favoring risk taking, trust, and open interaction. ©

2011 Product Development & Management Association.","author":[{"dropping-particle":"","family":"Bertels","given":"H.M.J.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Kleinschmidt","given":"E.J.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Koen","given":"P.A.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Product Innovation Management","id":"ITEM-1","issue":"5","issued":{"date-parts":[["2011"]]},"page":"757-772","title":"Communities of practice versus organizational climate: Which one matters more to dispersed collaboration in the front end of innovation?","type":"article-journal","volume":"28"},"uris":["http://www.mendeley.com/documents/?uuid=bd48c02d-e5a7-3c27-b2a3-d387e026e555"]}],"mendeley":{"formattedCitation":"(Bertels et al., 2011. Researchers have identified that employee interaction leads to job satisfaction (Dimotakis et al., 2011). Personal interactions are recognized as informal associations to create informal social relationships, as they are the most commonly reported events at the workplace (Basch & Fisher, 1998). However, there exists various literature related to antecedents for career prospects (Zhang et al., 2020) (Law et al., 2017), but the literature investigating the role of personal interaction influencing future prospects of employees is scarce. Also, the underlying mechanism through which personal interaction influences employees' future prospects have not been explored earlier. Moreover, studies encompassing the fundamental aspects of an employee's future prospects are pretty uncommon. Thus, this study adds to the concept of career prospects, employability, promotion, recognition and rewards under a single umbrella term, future prospect.

An individual employee's preference for teamwork relates to an employee's perspective of working with their co-workers in teams rather than alone (Jackson et al., 2006). Preference for teamwork is the affiliative nature of employees towards their peers or ingroup members, due to which they prefer working with those peers in teams (Gelfand & Triandis, 1998; Oyserman et al., 2002). Researchers have studied the role of preference for teamwork in predicting performance (Bell, 2007; Lehto & Landry, 2012), while, Kiffin-Petersen & Cordery (2003) in their study investigated the role of trust, individualism and job characteristics in predicting preference for teamwork. But, what role preference for teamwork may

play in predicting employee future prospect is unidentified. This study examines the mediating role of individual employee's teamwork preferences in the relationship between personal interaction and future prospects. Thus, we aim to understand the mediating role of an individual's preference for teamwork in the personal interaction – future prospect relationship and how an employee's future career prospect is anticipated by her or his preference to work in teams rather than working alone.

This study makes multiple theoretical and practical contributions. Foremost, by testing the personal interaction - future prospect relationship, this study advances our knowledge of the relationship between future prospects and its antecedents. Next, this study aims to shed new light on the underlying path for understanding personal interaction and future prospect relationships. Thirdly, this study investigates whether an employee's choice to work in a team mediates and enhances his chances for a brighter future career prospect. Finally, investigating the abovementioned relationship in the Indian business context adds to our understanding of future prospects for an employee: career prospects, rewards, promotion, employability, and salary increment in Indian organizations. Also, by examining interpersonal interaction and individuals' teamwork preference as the potential antecedents to future prospects, we propose a unique study from the literature review to the best of our understanding. Hence, we suggest addressing the following research questions:

1. Does interpersonal interaction among employees in their work influences their future prospects in the organization?

2. Does such personal interaction encourage individuals to actively prefer working in teams with their peers rather than working alone?

3. Does an individual's preference to work in a team relates to the better future prospect in her or his current organization?

4. Is the personal interaction - future prospect relationship for an employee is mediated by individual employee's preference for teamwork?

The structure of the present study is elaborated as follows: the upcoming sub-section under the current section is the theoretical framework. The following section comprises of literature review and hypotheses development, followed by research methodology. The next section to methodology is data analysis and results. The following

is the discussion section comprising theoretical and practical implications, limitations, and future research and conclusion.

Theoretical framework

The relationships to be studied in the present article are based on the Affective Events Theory (AET) (Weiss & Cropanzano, 1996). AET "focuses on the structure, causes and consequences of affective experiences at work" (p 11). The affective events and occurrences affect the behaviours and attitudes of the individuals. The outcomes of such affective events are concerned with a stable work environment and job scope (Basch & Fisher, 1998). The theory also asserts that things often happen at workplaces, leaving an emotional mark in the person's mind. Such impacts may develop an attitude towards the organization, job, and co-workers. Chiaburu and Harrison (2008), in their study, asserted the affective support from co-workers, stating that personal interactions among employees leads to a sense of satisfaction, involvement, and being employed in the organization. Thus, we posit that personal interaction among employees may lead to a better understanding of the work environment obtained by the affective events, leading to sustained career prospects in the present organization.

Theoretical background and development of hypotheses

Personal interaction and future prospects

Future prospects for an employee is defined as "the extent to which an employee anticipates having a rewarding career within his or her employing organization" (Taormina, 1997, p 40). In considering their future prospects, employees also predict whether the organization would satisfy the achievement needs of the employee (Buchanan, 1974) and further the promotion and salary incremental needs were also included in the concept. However, if feel dissatisfied with the rewards and better career prospects, employees may opt to resign and leave the organization. Nevertheless, the social relations at the workplace may act as an adhesive for linking employees to each other. Personal interaction is one such perspective of managing social relations, which may be a reason to stay in the organization. In their study, Graham et al. (2018) have emphasised the dyadic relationship to be more harmonious emerging out of cordial personal interaction, whereas Yi (2009)little effort has been put into developing a valid and reliable measure of KSB. The primary purpose of this study is to develop a new measure

of KSB with desirable psychometric properties - a well-developed KSB scale with a sufficient level of reliability and validity. This main objective was achieved by using the following procedures: (1 asserted personal interaction as a vital factor in knowledge sharing at the workplaces. Dimotakis et al. (2011), following the postulates of Affective Events Theory (AET), also explained that affective events lead to behavioural activation systems, thereby enhancing positive interpersonal interactions; such positive interactions emerge as a reason for rewards and incentives. Moreover, Dimotakis et al. (2011) also asserted the importance of positive personal interaction elevating the individual's subjective well-being.

Personal interaction among employees at the workplace acts as a source of motivation and prerequisite for knowledge sharing paving the way for status and advancement in career, intellectual and emotional benefits and better professional reputation (Amayah, 2013). Interactions at the workplace also encourage employees in sharing their expertise, experience and insights for the betterment of each other (Wang, 2016) this study examines a model that depicts the influence of personal and environmental factors on employees' knowledge sharing behaviors (KSBs. Future prospects for an employee are a facet of organizational socialization that continues along with the different career stages in that organization (Wu et al., 2015), while personal interaction among co-workers is a basis for the socialization of employees in the organization (Robert J. Taormina, 2004). Based on the literature support, we propose that personal interaction among employees paves the way for better future prospects in their respective workplaces. Hence, we hypothesize that

Hypothesis 1. Personal interaction among employees positively influences their future prospects in their current organization.

Personal interaction and individuals' preference for teamwork

Personal interaction among employees helps better understand their co-workers, thus leading to a sense of trust and belongingness. Such interactions leads to trust and confidence on co-workers prompting employees in working in teams with those co-workers and team formation (Kiffin-Petersen & Cordery, 2003). The similarity in perspectives and opinions leads to mutual affection for one another (Zhou et al., 2009), which coincides with the arguments by emotion researchers that

varying types of emotions are caused by varying affective events at work (Basch & Fisher, 1998). Lehto and Landry (2012) also emphasized forming a team based on work interactions and social associations in their review article. Thus, based on the literature review, we understand that employees develop an affection and belongingness from interpersonal interaction, which motivates them to prefer working in teams whenever they get an opportunity. Thus, built on this argument, we hypothesize that

Hypothesis 2. Personal interaction among employees relates to an individual's preference for teamwork.

Individuals' preference for teamwork and future prospects

Preference for working in teams relates to the collectivist perspective of an individual. When an individual prefers teamwork rather than working alone, relies on those members, and has concern for them are collectivist (Triandis & Singelis, 1998), and such individual version of collectivism is psychological collectivism (Jackson et al., 2006). The Affective Events Theory suggests that positive interpersonal affective states lead to a psychological impact on employee satisfaction with their job, while such conditions encourage substantial career achievement (Ye et al., 2019). Such affective events occur when employees work together and interact together due to task interdependence in teams. The settings where knowledge is shared for effective job performance may ultimately lead to productive outcomes securing better future prospects in their current organization. Bell (2007), in her study, has also proposed the preference for teamwork related positively to team performance. While such team outcome ultimately results in better individual-level outcomes, paving the way for rewards, promotion, and career growth opportunities. Although Mayfield et al. (2016) expressed that employees' affective outcomes influence their team-level performance, we also posit that such interaction and affective events also leads to knowledge about their job, organization and promising career advancement opportunities in the same enterprise. Thus, based on the literature evidence, we hypothesize that

Hypothesis 3. Individual employees' preference for teamwork positively relates to their future prospects in their organization.

Individual's preference for teamwork as a mediator

Teamwork is feasible when there is a cordial association between members. Researchers have emphasized certain

activities such as designing work conditions, fostering collaborative culture and training and development for team formation. Out of which, team building training is the essential part where employees can interact and assimilate for knowledge transfer (Cabrera & Cabrera, 2005; Taskin & Bridoux, 2010)teleworking has gained momentum. While it has been portrayed as both employer- and employee-friendly, we question the positive normativity associated with teleworking by showing how it may endanger an organization's knowledge base and competitive advantage by threatening knowledge transfer between teleworkers and non-teleworkers. Drawing on the literature on knowledge we present the cognitive and relational components of organizational socialization as key facilitators of knowledge transfer and we demonstrate that teleworking may negatively affect these cognitive (shared mental schemes, language and narratives, and identification with goals and values, and such training enhances bright future career prospects for participants (Lambert & Vero, 2013). Hülsheger et al. (2009) suggested an optimistic outcome of personal interaction enhancing the likelihood of obtaining new knowledge and creating new ways of doing things. However, when shared with co-workers with whom one prefers to work as a team, such knowledge and idea may foster individual and team performance. Ding et al. (2007) also concluded that team members social interaction is one of the significant factors for knowledge sharing resulting in brighter career prospects. Schwaer et al. (2012) suggested cognition-based trust as a supporting aspect achieved by unique collaboration leading to knowledge sharing and enhanced performance, paving the way for a sustainable future prospect. Thus, based on the above arguments and suggestions, we propose that

Hypothesis 4. Individuals' preference for teamwork mediates the relationship between personal interaction and employees' future prospects in their organization.

Research Methodology

Objectives

The objective of the present study are as follows:

1. To study the relationship between personal interaction and future prospects.

2. To study the association between personal interaction and individuals' preference for teamwork.

3. To study the association between individuals' preference for teamwork and future prospects.

4. To comprehend the mediating role of individuals' preference for teamwork on the relationship between personal interaction and future prospects.

Research Design

This study consists of a cross-sectional research design to investigate the relationship between personal interaction and future prospects, mediated by individuals' preference for teamwork. A non-random, non-probability convenience sampling technique was applied to collect data from a sizeable scattered population such as India, especially when the sample population is unknown (Verma et al., 2020). The data was collected at a single time point through a self-reported questionnaire.

Sample and Data Collection

The data were collected from full-time employees in varied manufacturing and service public and private sector companies in India, with a turnover higher than a thousand million in Indian currency. The responses were chosen based on the participants who were part of a company team and engaged in knowledge-related functions. Data collection was done through a google form sent to the prospective participants through email and WhatsApp. A self-reported questionnaire as a Google form was employed for data collection. The responses to all the items were made compulsory; hence, there was no incomplete response.

The questionnaire was sent to 1050 employees, out of which 259 responses were received, displaying a response rate of 24.66 %. The gender of the respondents showed that 70.3 per cent were male respondents, and the mean age of participants was 29 years. The educational qualification was 2.7 per cent diploma holders, 35.9 per cent degree holders, 53.7 per cent post-graduate, and 7.7 per cent were PhD holders. Moreover, out of the overall responses, 71.4 per cent of respondents were from private and the remaining from the public organization.

Measures

Personal interaction- Personal interaction was assessed using an eight-item sub-scale from a 28 item scale developed by Yi (2009)little effort has been put into developing a valid and reliable measure of KSB. The primary purpose of this study is to develop a new measure of KSB with desirable psychometric properties - a well-

developed KSB scale with a sufficient level of reliability and validity. This main objective was achieved by using the following procedures: (1. Two items were deleted from the 8-item scale due to lower factor loadings. The sample items are "keep others updated with important organizations information through personal conversation", "Engage in long-term coaching relationships with a junior employee". The alpha reliability is 0.841.

Preference for teamwork- Individual's preference for teamwork was tested through a 3 - item subscale developed by Jackson et al. (2006). The scale items included "I prefer to work in those groups rather than working alone" and "I wanted to work with those groups as opposed to working alone". The α coefficient is 0.861.

Future prospects- Employees' future prospects was assessed by applying a five-item sub-scale from the organizational socialization inventory by Taormina (2004). The items included are "There are many chances for a good career with this organization", "I can readily anticipate my prospects for promotion in this company", "Opportunities for advancement in this organization are available to almost everyone". The internal consistency of the scale is 0.904.

Control variables

We controlled for the effect of potential demographic variables in our study to further understand the strength of the mentioned relationship in the presence of the control variable. We controlled for age, gender and educational qualification as per the recommendation by (Bellou 2009; Pfeffer, 1983) since, in several studies, these are the most noted demographic variable studied by the researchers. Cooper- Thomas 2020 also analyzed the relationship of age and gender in newcomer socialization, of which future prospect is also one of the facets. Gender was coded as 0 for males and 1 for females. Similarly, age and educational qualification ranged from diploma to PhD were coded as a categorical variable.

Data analysis technique

The measurement model was tested and validated through confirmatory factor analysis and structural equation modelling. Further multiple regression analysis was performed to test the formulated hypotheses. Moreover, we applied PROCESS macro model 4 from Hayes (2018) with 5000 bootstraps resamples at a 95 % confidence interval to take care of the non-normality of data. IBM SPSS AMOS 27 and IBM SPSS Statistics 27 was used for the statistical analysis.

Data analysis and results

Measurement model

We conducted CFA to analyse the measurement model into AMOS 27 including all the study variables. The model fit was measured to analyse the model fit. The measurement model showed a good model fit with the data (χ^2 = 132.804, df = 74, χ^2/df = 1.795, CFI (Comparative Fit Index) = 0.968, RMSEA (Root Mean Square Error of Approximation) = 0.055, NFI (Normed Fit Index) = 0.931, TLI (Tucker-Lewis Index) = 0.961)(Hu & Bentler, 1999).

Common method bias

Since this study consisted of a cross-sectional research design, the potential threat of common method bias cannot be ignored. We followed the recommendation made by Podsakoff et al. (2003) and included a cover letter with our survey questionnaire. We assured the respondents about maintaining their anonymity and using the data wholly for the research purpose. Moreover, in the survey questionnaire, a seven-point Likert scale was applied to measure the responses for each item and all the points on the scale were labelled for better understanding the respondents and to lessen the item ambiguity (Krosnick, 1991). Moreover, the participants were also requested to reply to each item with honesty to avoid evaluation apprehension (Podsakoff et al., 2012)and the pervasiveness of research settings with the potential to produce them, there is disagreement about whether they really are a problem for researchers in the behavioral sciences. Therefore, the purpose of this review is to explore the current state of knowledge about method biases. First, we explore the meaning of the terms \"method\" and \"method bias\" and then we examine whether method biases influence all measures equally. Next, we review the evidence of the effects that method biases have on individual measures and on the covariation between different constructs. Following this, we evaluate the procedural and statistical remedies that have been used to control method biases and provide recommendations for minimizing method bias. © 2012 by Annual Reviews. All rights reserved.","author":[{"dropping-particle":"","family":"Podsakoff","given":"Philip M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"droppi

ng-particle":"","family":"MacKenzie","given":"Scott B.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Podsakoff", "given":"Nathan P.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Annual Review of Psychology","id":"ITEM-1","issued":{"date-parts":[["2012"]]},"page":"539-569","title":"Sources of method bias in social science research and recommendations on how to control it","type":"article-journal","volume":"63"}],"uris":["http://www.mendeley.com/documents/?uuid=361bf66f-cfbb-468d-a329-890c5f0fa109"]}],"mendeley":{"formattedCitation":"(Podsakoff et al., 2012.

To statistically address the effect of common method bias, we conducted Harman's (1976) single factor test to analyze the effect of a first single factor. The first single factor accounted for 31.10 per cent of the total variance (less than 50 per cent), thus reducing the chances of common method bias. An author should have a substantial argument for applying self-reported cross-sectional research design as per the recommendation by Conway and Lance (2010). As per the recommendation by Rindfleisch et al. (2008)editors, reviewers, and authors have expressed increasing concern about the validity of this approach. These validity concerns center on reducing common method variance bias and enhancing causal inferences. Longitudinal data collection is commonly offered as a solution to these problems. In this article, the authors conceptually examine the role of longitudinal surveys in addressing these validity concerns. Then, they provide an illustrative comparison of the validity of cross-sectional versus longitudinal surveys using two data sets and a Monte Carlo simulation. The conceptualization and findings suggest that under certain conditions, the results from cross-sectional data exhibit validity comparable to the results obtained from longitudinal data. This article concludes by offering a set of guidelines to assist researchers in deciding whether to employ a longitudinal survey approach. © 2008, American Marketing Associa tion.","author":[{"dropping-particle":"","family":"Rindfleisch","given":"Aric","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Malter","given":"Alan J.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Ganesan","given":"Shankar","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Moorman","given":"Christine","non-dropping-particle":"","parse-names":false,-

"suffix":""}],"container-title":"Journal of Marketing Research","id":"ITEM-1","issue":"3","issued":{"date-parts":[["2008"]]},"page":"261-279","title":"Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines","type":"article-journal","volume":"45"},"uris":["http://www.mendeley.com/documents/?uuid=e183dcff-cf38-473a-923d-c53e330724c5"]}],"mendeley":{"formattedCitation":"(Rindfleisch et al., 2008, if the study participants are educated enough to respond to the items unambiguously and in an unbiased manner, a self-reported questionnaire can be applied. Since the educational qualification ranged from diploma level to PhD level in our study, the participants in the present study were well-educated to respond to the items. Thus, we considered statistical and procedural remedies to reduce the threat of common method variance.

Discriminant and convergent validities

After the measurement model was tested, further validation was done by performing the reliabilities and convergent and discriminant validities of the latent constructs. The internal consistencies and composite reliability values of all the constructs displayed acceptable values, which were above the threshold of 0.7, and all the items were found with satisfactory factor loading ranging from 0.6 to 0.85. Thus, the conditions of reliability and convergent validity was fulfilled (Anderson & Gerbing, 1988; Nunnally, J.C. and Bernstein, 1994)"type":"article-journal","volume":"103"},"uris":["http://www.mendeley.com/documents/?uuid=3eea4e12-2b39-4bf7-b48d-b633ba0a386d"]},{"id":"ITEM-2","itemData":{"author":[{"dropping-particle":"","family":"Nunnally, J.C. and Bernstein","given":"I.H.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Psychological Theory","id":"ITEM-2","issued":{"date-parts":[["1994"]]},"publisher":"McGraw-Hill","publisher-place":"New York","title":"Psychological Theory","type":"book"},"uris":["http://www.mendeley.com/documents/?uuid=49702d67-3726-402d-86b8-22d74180216d"]}],"mendeley":{"formattedCitation":"(Anderson & Gerbing, 1988; Nunnally, J.C. and Bernstein, 1994. As per Fornell & Larcker (1981)in addition to the known problems related to sample size and power, is that it may indicate an increasing correspondence between the hypothesized model and the observed data as both the measurement properties and the relationship

between constructs decline. Further, and contrary to common assertion, the risk of making a Type II error can be substantial even when the sample size is large. Moreover, the present testing methods are unable to assess a model's explanatory power. To overcome these problems, the authors develop and apply a testing system based on measures of shared variance within the structural model, measurement model, and overall model.","author":[{"dropping-particle":"","family":"Fornell","given":"Claes","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Larcker","given":"David F.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Marketing Research","id":"ITEM-1","issue":"1","issued":{"date-parts":[["1981"]]},"page":"39","title":"Evaluating Structural Equation Models with Unobservable Variables and Measurement Error","type":"article-journal","volume":"18"},"uris":["http://www.mendeley.com/documents/?uuid=a8ca5fa9-7f6d-480e-8622-d5594609acad"]}],"mendeley":{"formattedCitation":"(Fornell & Larcker, 1981 recommendation, the discriminant validity was analyzed. The average variance extracted from all the study variables should be higher than the square of the inter-factor correlation. In our study, the AVE was greater, satisfying the conditions of discriminant validity. The descriptive statistics, inter-factor correlation, alpha reliability values are displayed in Table 1.

"author":[{"dropping-particle":"","family":"Fornell","given":"Claes","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Larcker","given":"David F.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Marketing Research","id":"ITEM-1","issue":"1","issued":{"date-parts":[["1981"]]},"page":"39","title":"Evaluating Structural Equation Models with Unobservable Variables and Measurement Error","type":"article-journal","volume":"18"},"uris":["http://www.mendeley.com/documents/?uuid=a8ca5fa9-7f6d-480e-8622-d5594609acad"]}],"mendeley":{"formattedCitation":"

Table 1 near here

Table 1. Mean, standard deviation, reliabilities and correlation of study variables

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Hypotheses testing

The data were imputed from AMOS to SPSS statistics to analyze the hypotheses. The hypotheses formulated were analyzed by conducting a multiple regression analysis in IBM SPSS Statistics 27. The unstandardized and standardized path coefficients were obtained. The relationship between personal interaction and future prospects was positive and significant ($\beta = 0.328$, $p < 0.001$), supporting hypothesis 1. Similarly, personal interaction was positively related to individuals' preference for teamwork ($\beta = 0.532$, $p < 0.001$), supporting hypothesis 2. Also, the association between individuals' preference for teamwork and future prospects was positive and significant ($\beta = 0.234$, $p < 0.001$), supporting

the third hypothesis. Table 2 shows the results of multiple regression displaying the mediation effects. The direct effect of personal interaction of employees' future prospects was positive and significant. However, when the mediator variable was added into the relationship, the effect was reduced from $\beta = 0.328$ to $\beta = 0.203$ p-value < 0.001, although significant, confirming partial mediation as per the recommendation by Baron and Kenny (1986). Figure 1 displays the structural model with standardized path coefficients.

Table 2 near here

Table 2. Mean, standard deviation and correlation of study variables

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Figure 1 near here

Figure 1. Structural Model with standardised path coefficients

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To further consider the conditions of non-normality of the data, we conducted bootstrapping at a 95 % confidence interval with 5000 random bootstraps resamples by applying PROCESS macro model 4 by Hayes AF (2018). The indirect effect of personal interaction on future prospects with the mediating role of preference for teamwork was positive and significant with LLCI = 0.015 and ULCI = 0.168, when controlled for respondents' age, gender and qualification. Since zero was not included between the lower and upper-level confidence limits, the bootstrap results were significant, and the mediation hypothesis was reconfirmed (MacKinnon et al., 2004). Table 3 displays the upper and lower-level confidence interval values for total, direct and indirect effects.

Table 3 near here

Table 3. Mean, standard deviation and correlation of study variables

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Discussion

Anchored in the Affective Events Theory (AET) (Weiss & Cropanzano, 1996), this study aimed to examine the

underlying mechanism in the personal interaction and future prospect relationship. We proposed a mediation model wherein employees' interaction predicted their future prospects in the current organization through preferring to teamwork. A survey research of 259 full-time employees from manufacturing and service sector private and public Indian organizations was conducted for this study.

The results obtained answered the research questions framed in this study. Firstly, the statistical analysis showed a positive association between personal interaction among employees and future prospects, supporting our first hypothesis and answering our first research question. By personally interacting with each other, employees develop a sense of oneness and trust, thus generating multiple events of cohesion and affection. They help each other, and a sense of social bonding is created, leading to knowledge transactions and sharing ideas and information. Our study is in line with the work done by Hurtado et al. (2011)we examine whether and how specific institutional contexts shape student interactions with faculty. We conducted a mixed methods study to understand institutional contextual differences in the experiences of aspiring scientists. Data from a qualitative five-campus case study and a quantitative longitudinal study of students from over 117 higher education institutions were analyzed to determine how aspiring scientists interact with faculty and gain access to resources that will help them achieve their educational goals. Findings indicate that important structural differences exist between institutions in shaping students' interactions with faculty. For example, students at more selective institutions typically have less frequent, less personal interactions with faculty whereas Black students at historically Black colleges and universities report having more support and frequent interactions with faculty. © 2011 The Society for the Psychological Study of Social Issues.

","author":[{"dropping-particle":"","family":"Hurtado","given":"S.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Eagan","given":"M.K.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Tran","given":"M.C.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Newman","given":"C.B.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Chang","given":"M.J.","n on-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Velasco","given":"P.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of SocialIssues","id":"ITEM-1","issue":"3","issued":{"date-parts":[["2011"]]},"page":"553-579","title":"\"We do science Here\": Underrepresented students' interactions with faculty in different college contexts","type":"article-journal","volume":"67"},"uris":["http://www.mendeley.com/documents/?uuid=ff8b080f-f182-35a3-86d8-b32b2f624d10"]}],"mendeley":{"formattedCitation":"(Hurtado et al., 2011, specifying the effects of personal interaction of students with their respective faculties lead to receiving prompt feedback aiding in deciding about their scientific career prospects. Similarly, employees obtain a sense of sustainability in their career advancement due to increased job performance and organizational commitment.

Secondly, the analysis showed a positive relationship between personal interaction and preference for teamwork, supporting our second hypothesis and answering our second research question. The result supports the idea that employees' interaction may influence and leverage their preference for working with those co-workers in teams or groups. Because employees develop trust and confidence and start relying on each other due to the social relations at the workplace (Jackson et al., 2006), such social relations assist them to be comfortable working in groups and teams. The third research question investigated the relationship between individuals' preference for teamwork and future prospects. The analysis supported the idea that when employees teamwork with their co-workers, they tend to display task interdependencies which also foster learning from each other, enabling better job performance and better career growth and future prospects in their enterprise.

We also tested the mediating role of an individual's teamwork preference in the relationship between personal interaction and future prospects. Employees are influenced mainly by the cultural perspective while representing their collectivist orientation which is in line with the proposition made by Min et al. (2020)the factors that can help individuals prepare for a diverse work environment are receiving much attention. Cultural intelligence (CQ that an individual's cultural intelligence and openness to accept the diverse organizational environment influences their preference for group work. However, our conceptualization of antecedents of future

prospects does not directly indicate training, learning, or performing at par at the job, guaranteeing future prospects in the organization. Instead, we conceptualized, explained and investigated those antecedents which were influenced by affective, socio-psychological events at the workplace fostering employees growth, career advancement due to continuous interaction, discussion on job-related issues, seeking help from co-workers. These phenomena encourage individuals to be optimistically involved in group or teamwork comfortably, augmenting their job role, thus establishing sounder future career prospects in the same organization.

Theoretical implications

The present study makes distinctive theoretical contributions to the literature. First, it extends the literature on future prospects, which has been hardly studied concerning career advancements, promotion, rewards, growth and increments of an individual. Specifically, this study investigates the underlying mechanism by testing the hypothesis expressing the relationship between personal interaction and future prospects with the mediating role of an individual's preference for teamwork. This study also adds to the literature on the Affective Events Theory (AET), suggesting that when the phenomena of interpersonal interaction take place at the workplace, an affection and association arise among employees, such events as studied by researchers leads to job satisfaction (Basch & Fisher, 1998). Moreover, the consequences of personal interaction increase the compatibility among peers fostering teamwork motivation, indicating it as an antecedent for an individual's preference for teamwork.

In particular, our findings specify that preference for teamwork not only has relevance for achieving team goals and performance but even embodies a significant affective process between co-workers. Since individuals' willingness to work in teams increases the occurrences of frequent associations, this helps employees gain knowledge about organization, management, and supervisors. Their teamwork process also leads to cognitive involvement enhancing team and organizational commitment. Consistent with Dimotakis et al. (2011), our study also shows the optimistic consequence of personal interaction among employees, grounded on the affective state's condition anticipating future prospects.

Moreover, this study also justifies and extends the literature on some of the previous findings showing that personal interaction develops trust, confidence due to affective consequences, paving the way for individual's teamwork preference and then for better future prospects (Dimotakis et al., 2011; Ding et al., 2007). However, it also adds to the underlying mechanism, which has not been studied earlier. By testing the model in the Indian context, this study provides new evidence of the relationship between the variables under study.

Practical implications

The finding of the present study suggests the vital role of personal interaction and an individual's preference for teamwork for an optimistic future prospect of an employee. To realize the motivational effect of interpersonal interaction among employees, organizations should provide more opportunities to collaborate and interact. Collaborative work also aids in knowledge transfer and solving work-related problems. Strategies should be devised for team building and interdepartmental task accomplishment. Organizational goal achievement should be considered of prime importance, which could ultimately pave the way for career opportunities for employees in their organizations by contributing to those goals.

At the same time, individuals who show collectivist orientation also depicts affective responses for their peers, such events would be given importance in the organization, and higher informal interpersonal interaction for tacit knowledge sharing should be encouraged. Managers and HRs should also design strategies for skill development which may again be enhanced by personal interaction among employees. Moreover, interaction with peers and co-workers and supervisors and managers should also be encouraged so that employees feel motivated to give their wholehearted contribution towards the organization. Management should utilize the resources for raising the personal interactions such that higher job demands and lower job control should also not reduce the interpersonal interactions among employees formally or informally.

Limitations and future research directions

Like any other study, our study has some limitations which can be addressed under future research avenues. Firstly, this consists of a cross-sectional research design; thus, chances of common method bias cannot be

neglected. Further study can be done with longitudinal and experimental research design. Also, the data collected from the respondents was through a self-reported questionnaire which may also result in response biases. Although several statistical and procedural remedies were undertaken to reduce the spurious effect of common method bias, still the effect of CMV cannot be discounted.

Secondly, the sample was collected from employees employed in Indian service and manufacturing private and public organizations. Thus, future studies can be conducted on sector-specific populations. Thirdly, since the conceptual model developed is tested in the Indian population and context, future research can be conducted in a different context with the same model. Moreover, the individual personality characteristics could be used as a moderator variable to investigate the relationship's effect. We controlled for the confounding effects of several demographic variables such as age, gender and respondents' qualification. However, such variables could be used as a moderator variable to understand the personal interaction – future prospect relationship between males and females, falling into varying age categories with different educational backgrounds.

Conclusion

The current study shows the relationship between personal interaction and future prospects with the mediating role of an individual's teamwork preference. The principles of Affective Events Theory were applied to investigate the hypothesised relationship. Our findings display the relevance of employees' personal interaction anticipating their future prospects mediated by the preference for teamwork, showing a social relationship perspective aiding better job performance, advancement in career, promotion and increment.

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Table 1. Mean, Standard deviation, correlations and reliabilities

		α	CR	M	SD	1	2	3	4	5	6	7	8
1	Gender	-	-	0.30	0.45	-	-	-	-	-	-	-	-
2	Age	-	-	0.29	0.49	-0.283**	-	-	-	-	-	-	-
3	Education	-	-	1.66	0.65	0.204**	0.006	-	-	-	-	-	-
4	Organization Status	-	-	0.29	0.45	-0.093	0.212**	-0.093	-	-	-	-	-
5	Job position	-	-	1.03	0.62	-0.180**	0.319**	-0.050	-0.072	-	-	-	-
6	Personal interaction	0.84	0.85	5.32	.955	-0.027	0.041	0.154*	-0.016	0.076	**0.481**	0.223	0.096
7	Preference for teamwork	0.86	0.87	5.38	1.112	0.076	0.061	0.114	0.103	-0.031	0.473**	**0.676**	0.113
8	Future prospects	0.90	0.91	5.59	1.071	0.124*	0.141*	0.184**	-0.030	0.131*	0.311**	0.337**	**0.660**

*$p < 0.05$, **$p < 0.01$ (2-tailed). SD = Standard deviation, Values in bold diagonally = Average variance extracted,

Value above the diagonal = Square of inter-factor correlations, CR = Composite reliability, values below the diagonal = Inter-factor correlations.   **Table 2**. Multiple regression analysis for Hypothesis 4

Predictors	Model 1	Model 2
Gender	0.161**	0.136*
Age	0.172**	0.156**
Qualification	0.100	0.097
Personal interaction	0.328***	0.203**
Preference for teamwork		0.234***
Adjusted R²	0.163	0.199
F value	13.56	13.81
P value	< 0.001	< 0.001
Note: ***$p < 0.001$, Future prospect as dependent variable		

Table 3. Results of mediation effects in PROCESS macro

Relationship	Total effect	Boot		Direct effect	Boot		Indirect effect	Boot	
		LLCI	ULCI		LLCI	ULCI		LLCI	ULCI
Personal interaction	0.361***	0.226	0.497	0.278***	0.132	0.424	0.084***	0.015	0.168
Future prospects									

Notes: LLCI = Lower-level confidence interval, ULCI = Upper-level confidence interval. ***$p < 0.001$, mediator variable = Individuals' preference for teamwork. Bootstrap at 95% confidence interval with 5000 random bootstrap resamples.

Figure 1

How a start-up could successfully join established Fintech market: the case of Toss in Korea

Biance Fagaras[a] and Namjae Cho[b]

a MBA Student, School of Business, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +82-2-2220-4142, E-mail: bianca.fagaras@gmail.com
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

Extended Abstract

Fintech industry has seen considerable growth in the past few years, with the number of fintech start-ups founded globally having doubled in 2021 compared to 2019. The current pandemic crisis has also contributed to the increased demand for more digital services and digitalization of banks, as customers started making more online transactions and prefer working with banks that can provide remote assistance even services such as mortgage, consumer loans or even stock trading (P.Nataliia, 2021). But while US is known for its mature fintech environment, other regions saw a different growth path for fintech technologies given local regulations and socio-economic factors. To explore such an example, this paper investigates the case of Toss (Viva Republica), which started as a peer-to-peer money transfer application in 2014, and managed to open a digital bank in 2021, becoming one of the main fintech players in the competitive market in South Korea.

By analyzing the global fintech trends it can be observed that Fintech investments have witnessed a remarkable growth compared to 2020. Payments funding grew 80%, banking funding grew 76%, with the most significant growth seen by digital lending funding with 137% growth in 2021 (CBInsights, 2021). Asia-Pacific region is showing significant growth, given its increasing rise of income and its "mobile first" approach, with digital natives expected to represent 40% to 50% of Asia's consumption population by 2030. Asia is also considered the world's consumption engine, with $10 trillion consumption growth opportunity over the next 10 years, representing half of the global consumption growth. As Asian and Korean legislation around financial services is quite strict, Asian digital banks usually operate under a Consortia, which can complicate the process and pose many challenges. But, at the same time the consortia approach encourages new entrants to prepare all elements that lead them to success and thus, in the past few years, consortia companies were granted the highest number of licenses (In Hong Kong and South Korea). (BickRaphael, GersonHernan, McFaullAlexander, PariyskiyAlexander, 2021). In recent years though, the Korean legislation relaxed consistently, creating room for innovation and competition to drive to the current local fintech ecosystem. One particular step that helped in this was the revision of the Electronic Financial Transactions Act, which allows mobile platforms (Kakao, Naver) and other financial institutions (credit card companies) to offer comprehensive payment and settlement services (Park G. Y., 2021). However, these changes would not have been possible without the effort of innovative fintech companies, pushing for change and for better services for their customers. The Korean fintech pioneer that helped change the Korean fintech industry the most is Viva Republica, known as Toss.

When Seung Gun Lee, CEO of Viva Republica, came up with the idea of Toss, the financial sector in South Korea was highly regulated and controlled by the main traditional banks and institutions. Given the strong focus on security over convenience, the traditional mobile banking had very outdated and cumbersome to use infrastructures, which made a simple process of transferring $10 put users through the burden of at least 5 passwords and 37 clicks. Seeing the multitude of fintech solutions available for customers in US and Europe, Lee grabbed this opportunity to create an app that addressed these problems, but as soon as the app was launched in 2014, it was shut down by the financial regulators as it was considered "illegal" at that time (Scott-Briggs, 2017). Lee had to work on bringing agreement between entities like media, government, companies, customers about the subject, making regulation easier to be changed (Millward,

2017). He used media the most to help Viva Republica, by asking journalists to help change people's minds about fintech and about much it can help them. With the back-up from media and people it was easier to persuade the regulators (Scott-Briggs, 2017). Him managing to change regulations around fintech in South Korea did not help just his company as the first entrants in the peer-to-peer payments market in Korea, but also enabled venture capital firms to invest in other fintech companies.

Since its launch, Toss managed to raise a total of $844.2 million from 22 investors (Lee A. , 2021), gather 21 million users, out of which 11 million are monthly active users and it is the only Korean fintech start-up to be included in CB Insights 2021 Fintech 250 (Shu, 2021). It currently has six main subsidiaries: Toss Core (parent company), Toss Securities (investments), Toss Payments, Toss Insurance, Toss Bank (digital bank), and Toss CX (customer experience). With a strong initial focus on customer acquisition and on creating the ultimate user experience, Lee planned from the beginning to provide all of its services from a single app. It thoroughly analyzed all customer needs and successfully managed to anticipate trends, thus enriching its offering with services covering all the market segments, with special focus on the ones poorly served by traditional banks or competitors. Even though competition grew considerably in the past few years, with chaebols and other big companies entering the market, such as Kakao, Naver, or Samsung Pay, Toss continues to innovate and enter new sectors. Therefore, they successfully launched their digital bank, Toss Bank, in 2021, and also acquired major stakes in VCNC, hinting at plans to expand in the mobility sector and compete with the other fintech players present in that market (Kakao Taxi). Toss is also slowly preparing their international strategy, having launched their services in Vietnam, and planning to expand in other countries in South-East Asia in the next few years.

The SWOT and Diamond Model Analysis performed in the later section of this paper shows that, while the overall conditions are favorable for Toss to experience growth in the future, there are several weaknesses and threats that if Toss fails to address it risks losing ground in face of its competitors. First, given the increasing number of competitors the competition for local resources is also growing. Toss has to address its declining employee satisfaction, and take advantage of its strong employer branding strategy, highly competitive

employee packages, and innovative organizational culture approach, to attract employees. Toss should leverage more their close relationship with the financial regulators to stay informed with regards to all regulatory changes and gain access to regulation information of other countries to help with smoother expansion in other markets. On top of providing the most competitive insurance rates, addressing market segments that competition is not addressing yet, such as foreigners, can help Toss Bank increase its client base. Toss should also use its strong innovation cultures to address the gig economy and shared economy services by building financial services specifically targeted at them.

While there are several areas where Toss can work to improve its market position, their success story is a strong proof that the best innovative ideas can move even the most traditional institutions towards change and can help open new markets and new business opportunities. Understanding their path to success can prove important in the current global pandemic situation as it represents a factor of chance for the entire fintech space, as consumers demand increased access to online services from banks and other financial institutions. Given the ever-changing fintech environment, traditional banks must also step up their digital strategies to avoid being overtaken by competition. They can either invest in R&D initiatives to create proprietary solutions to free themselves from legacy IT systems, they can partner up with fintech companies to create bigger impact for their customers, or they can adopt a strategy of acquiring fintech companies in order to integrate different technology offerings to their portfolio.

Reconstruction and Rehabilitation efforts in individual housing through cash transfer program in Nepal Earthquake 2015

Bishnu Gotame[a] and Prof. Dr. Sateesh Ojha[b]

[a] *Ph.D. Scholar, Department of Civil Engineering*

Lincoln University College, Wisma Lincoln, No. 12-18, Jalan SS 6/12Malasiya

Tel: Phone +603-7806 3478 (International) E-mail: bishnupg@yahoo.com

[b] *Professor, Lincoln University College*

Lincoln University College, Wisma Lincoln, No. 12-18, Jalan SS 6/12Malasiya

Tel: Phone +603-7806 3478 (International) E-mail:sateeshkumarojha@gmail.com

Abstract

Nepal experienced big magnitude of 7.8 Richter scale earthquake in 25th April 2015 with more than six hundred aftershocks (>4) until end of 2021. The wild earthquake was responsible for significant economic loss which was estimated seven million USD and large number of infrastructures damage with 755,549 individual houses. Government of Nepal, various donors including international communities worked together for rehabilitation and reconstruction. This study aimed to know status of reconstruction of individual houses which were damaged during the earthquake.

Government of Nepal formed Nepal reconstruction Authority to lead reconstruction and decided to provide conditional cash grant (CCG) for personal house construction to the eligible beneficiaries.

Keywords

Reconstruction, Nepal Reconstruction Authority, conditional cash grant,

Introduction

Nepal is vulnerable country in terms of multi hazard and earthquake risk. It ranks 4th, 11th 20th and 30th in terms of climate change, earthquake, multi-hazard and flood risk respectively. As the country lies in the high seismic zone, large-scale earthquakes were frequent in the country in the past including the earthquake of 25th April 2015 and 15th January 1934. The recent earthquake adversely affected the country and it's economic growth.

Nepal Reconstruction Authority (NRA) was leading reconstruction efforts until January 2022 which is now taking responsibility by Nepal Disaster Risk Management Authority (NDRRMA). Reconstruction of individual house is being carried through conditional cash grant (CCG) and technical assistance. Beneficiaries were selected as per criteria set by NRA and project agreement (PA) was done with eligible beneficiaries to provide financial and technical assistance. As of December 2021, it is reported that 741,031 houses were reconstructed as NRA had conducted conditional cash grant agreement with 827,340 beneficiaries. There is an increment of beneficiaries by 9% during the agreement time as compared with baseline.

Department of Urban Development and building Construction (DUDBC) provided technical support and monitoring whereas Ministry of Federal and Local Development (MoFaLD) was responsible for community mobilization and facilitation. District level project implementation unit (DLPIU) of both ministry level provided technical support at the district level.

Methods

Literature review was carried to perform this study as a first step. Both primary and secondary data were collected to do detail analysis. Followings steps were followed to conclude this study.

Literature review on the Nepal earthquake 2015 and reconstruction related policies, guidelines, and documents

Nepal earthquake 2015 related documents such as news, video documents, post disaster need assessment (PDNA) and other facts were reviewed. Guidelines, policies, and directories as well as technical manuals also reviewed. Theoretical part of each document were used to enhance knowledge on reconstruction and other sections were

used to know detailed procedures for house construction specially on cash grant disbursement and monitoring.

Questionnaire preparation

Questionnaires were prepared to collect primary data from field. District level information was collected from District Administration Office (DAO), District Coordination Committee (DCC previously known as DDC), Nepal Red Cross Society (NRCS), Non-Government organizations (NGOs) and Municipalities. The purpose of information collection was to know how beneficiaries were selected, what kinds of documentations were needed to include in agreement with Government, how beneficiaries were received and utilized conditional cash and; how did beneficiaries build their houses.

Secondary data was collected from various sources such as project implementation units (CLPIUs), National Reconstruction Authority, Nepal Disaster Risk Reduction Management Authority (NDDRM) and Housing Recovery and Reconstruction platform (HRRP)

Study on procedure of reconstruction

Local level Government unit selected beneficiaries for shelter assistance as per NRA guidelines and did agreement with eligible households (HHs). Department of Urban Development and Building Construction (DUDBC) prepared sets of prototype design of houses with different designs. Beneficiaries were asked to select one of the type and model of house from the catalogue. Trained construction workers were providing technical assistance along with NRA Engineers during the construction time. NRA was releasing first tranche which is NPR 50,000. First tranche is estimated for site clearance and construction work upto plinth level. Once beneficiaries utilized first tranche, they are eligible to receive second tranche. After the technical report verified by Engineers, such beneficiaries are eligible to receive NPR 150,000 as second tranche which is provided for superstructure work. After utilization of second tranche, beneficiaries are subjected to complete latrine construction. After the technical verification, such families are eligible to receive third tranche which is NPR 100,000. All the transactions are made through bank transfer.

Housing reconstruction guideline is explaining the process and requirement followed by monitoring checklist. NRA has prepared technical monitoring manual for common understanding and uniformity.

Gap Analysis.

Based on the primary and secondary data, gap analysis was done to know the reasons of delays in house construction.

Data analysis and presentation

Study Data and Analysis Technique

Both primary and secondary data was collected, quantified, and analyzed. Identified beneficiaries, number of grievances, project agreement (PA) signed, first/second/third tranches disbursement, number of house completion
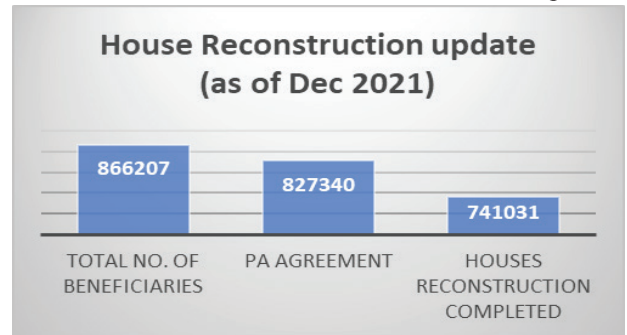
Figure 1: House reconstruction update.

Figure 1 shows 866,207 families are eligible to receive shelter grant for house reconstruction however NRA has made conditional cash grant agreement with 827,340 HHs only which is 95.5% total beneficiaries. Total number of beneficiaries has been increased by 9% as compared with post disaster need assessment (PDNA) report.
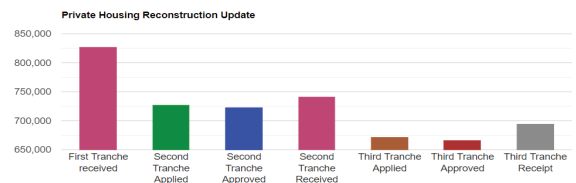
Figure 2: Fund disbursement status for house reconstruction
Figure 2 above shows number of beneficiaries who received first, second and third tranches. Beneficiaries are eligible to receive first tranche immediately after the agreement signed. Hence, high number of beneficiaries received first tranche. To receive second and third tranches, beneficiaries are needed to utilize cash for house construction as per agreed design and specifications. It takes time for construction, verification, submission and approval. So, less number of families are receiving subsequent tranches slowly. Some families are also not starting construction after receiving first tranche which resulted drop out in the beneficiaries list.
Table 1 shows district wise progress against beneficiaries who has signed in agreement and completed house. 75% of the beneficiaries completed house as of December 2021 in 31 districts. Reconstruction rate is more than 85% in eight districts and less than 50% in five districts.

Table 1 : District wise reconstruction progress

SN	District	Total No. HHs	Agreement	completed	Percentage
1	Sindhupalchok	90573	88617	79885	90%
2	Nuwakot	78518	76537	68536	90%
3	Dhading	82598	80322	59565	74%
4	Dolakha	72388	69409	62161	90%
5	Gorkha	70363	68593	59251	86%
6	Ramechhap	55576	54221	41275	76%
7	Kavre	80743	77124	54609	71%
8	Sindhuli	40308	38936	20860	54%
9	Makwanpur	38443	31035	22721	73%
10	Okhaldhunga	26336	25787	24555	95%
11	Kathmandu	48235	43534	19227	44%
12	Rasuwa	12934	12274	10905	89%
13	Lalitpur	29485	26849	10097	38%
14	Bhaktapur	28648	25153	11104	44%
15	Lamjung	14887	14294	6899	48%
16	Tanahun	14856	18688	12367	66%
17	Solukhumbu	12779	12444	11334	91%
18	Khotang	9977	9622	6056	63%
19	Chitwan	8443	7478	6401	86%
20	Gulmi	4723	4469	3309	74%
21	Syangja	9421	9070	5170	57%
22	Kaski	6602	6043	4322	72%
23	Palpa	5104	4576	2391	52%
24	Bhojpur	6735	5848	3456	59%
25	Parbat	5928	5665	4185	74%
26	Dhankuta	3460	3186	1896	60%
27	Nawalparasi	1077	1071	1009	94%
28	Baglung	2553	2374	1965	83%
29	Arghakhanchi	1225	1100	705	64%
30	Sankhuwasabha	2224	2067	968	47%
31	Myagdi	1065	954	713	75%
Total		866207	827340	617897	75%

Similarly, Table 2 shows only 95.51% of beneficiaries conducted agreement with National Reconstruction Authority for housing grant. Such 38,867 HHs are not taking participation in the reconstruction process. There are seven districts where less than 90% beneficiaries signed the agreement for house construction.

Table 2: District wise agreement status

SN	District	Total No. HHs	Agreement	Agreement Completed
1	Sindhupalchok	90573	88617	97.84%
2	Nuwakot	78518	76537	97.48%
3	Dhading	82598	80322	97.24%
4	Dolakha	72388	69409	95.88%
5	Gorkha	70363	68593	97.48%
6	Ramechhap	55576	54221	97.56%
7	Kavre	80743	77124	95.52%
8	Sindhuli	40308	38936	96.60%
9	Makwanpur	38443	31035	80.73%
10	Okhaldhunga	26336	25787	97.92%
11	Kathmandu	48235	43534	90.25%
12	Rasuwa	12934	12274	94.90%
13	Lalitpur	29485	26849	91.06%
14	Bhaktapur	28648	25153	87.80%
15	Lamjung	14887	14294	96.02%
16	Tanahun	14856	18688	125.79%
17	Solukhumbu	12779	12444	97.38%
18	Khotang	9977	9622	96.44%
19	Chitwan	8443	7478	88.57%
20	Gulmi	4723	4469	94.62%
21	Syangja	9421	9070	96.27%
22	Kaski	6602	6043	91.53%
23	Palpa	5104	4576	89.66%
24	Bhojpur	6735	5848	86.83%
25	Parbat	5928	5665	95.56%
26	Dhankuta	3460	3186	92.08%
27	Nawalparasi	1077	1071	99.44%
28	Baglung	2553	2374	92.99%
29	Arghakhanchi	1225	1100	89.80%
30	Sankhuwasabha	2224	2067	92.94%
31	Myagdi	1065	954	89.58%
Total		866207	827340	95.51%

Construction progress and Challenges

Findings and Recommendation

Main findings of the study are listed below:

a. Delays in reconstruction: The country is still in recovery phase as six years already completed when reconstruction phase started. It is found that 95.51% of total selected families conducted agreement to rebuild the houses whereas only 75% of the houses were built so far. It is learnt that country has spent more time for beneficiary selection and tedious paperwork also made delays in starting construction work. It is also known that NRA has conducted beneficiary selection process multiple time which consumed resources and time.

b. Frequently changing polices and regulations: Due to political instability, Government has changed key personals at the top level frequently in National Reconstruction Authority (NRA) and such turnover made significant changes in reconstruction policies. These changes made confusion at the district level and at the beneficiary level. Initially, Government announced NPR 250,000.00 as total cash grant for house reconstruction and later new Government made changes on amount and increased to NPR 300,000.00. NRA also made significant changes on cash disbursement conditions, technical supervisions checklist and deadline.

c. Less community participation: The reconstruction process has been conducted in owner driven approach however it is learned that community people and local stakeholders are consulted less in the reconstruction process. NRA is only focusing on conducting agreement with beneficiaries and technical supervision.

d. Lack of Capacity development of local construction workers and beneficiaries: Community meetings, one to one technical meeting and technical orientations were not provided to beneficiaries. NRA and different Government and Non-Government organizations conducted training to construction workers at limited only. Many families brought construction workers from outside the community and districts for reconstruction. If NRA could identify, train and capacitate local construction workers in all working communities, construction works could be completed quicker than this. Beneficiaries could be mobilized for construction followed by 1 or 2 lead masons to make house faster and stronger.

e. Inconsistency on data management: It is observed that data is not managed in structured and uniformed way. There are many raw data is available in different leading Government Offices which is creating confusion and inconsistency.

f. Substantial paper works and documents: Beneficiaries were asked to complete many paper works such as agreement, inspection checklist, technical recommendation papers, application for the fund request, acknowledgement receipts and other paper works which made the delays in construction work, difficulties on managing huge volume of paper works.

Conclusion:

From the above analysis, it is concluded that reconstruction of houses is going very slowly. Due to rapid changes in policies and management, involvement of many Government and non-Government organizations and slow fund disbursement process resulted delays in house construction. It is known that only 75% of individual houses completed in six years.

Recommendations:

Policy level intervention:

Government of Nepal needs to prepare reconstruction and rehabilitation policies immediately after such disaster. Once prepared, Government should make amendments after certain interval not the replacement. Such policies should be prepared in consultation with affected families by including people with disabilities (PWDs), women and children to make inclusive.

High level of community participation:

Community groups at the local level should be formed with 20-30 households in each group to train and mobilize for owner driven approach. Members of such groups will learn from each other and can also make exposure visit to other groups. It will help to complete reconstruction in very short period with quality construction.

Capacity Development:

It is strongly recommended to conduct various types of capacity development activities at different level during construction process which includes; orientation to beneficiaries on build back safer, mass awareness on safer construction, training to construction workers at the community level, advanced training to lead construction workers at village level and Training to community supervisors at municipality level. Standard type of tool kits should be provided to construction workers and basic tool kits should be provided to beneficiaries to start construction.

Continuation of cash transfer modality:

It is recommended to continue cash transfer modality as it gives flexibility to the beneficiaries on procurement and construction

Further study is recommended on reconstruction process and quality of houses.

It is strongly recommended to know the reasons of delays in reconstruction of individual houses in the deeper level. It is also recommended to do study on the quality of construction to know the compliance of National building code.

Managing Human Bias for AI Recruitment Process: Equivocality Management for Objective CV Assessment

Changhyun Lee[a] and Kyungjin Cha[b]

[a] *School of Business, Hanyang University*

222, Wangsimni-ro, Seongdong-gu, Seoul, Republic of Korea

Tel: +82-2-8722-6354, E-mail: newdlckdgus@hanyang.ac.kr

[b] *School of Business, Hanyang University*

222, Wangsimni-ro, Seongdong-gu, Seoul, Republic of Korea

Tel: +82-2-2220-1038, E-mail: kjcha7@hanyang.ac.kr

Abstract

Essay-based recruitment process is prevalent but contains shortcomings in which it highly depends on the recruiter's equivocality. That is, it is perceived to be unfair since recruiters may evaluate the same curriculum vitae differently due to their subjectivity. Therefore, this study constructed an artificial intelligence algorithm which reproduces the recruiters' hiring decision including their human bias and experimented the impact of equivocality in curriculum vitae assessment. The experiment has aimed to investigate how much the previous hiring decision had shown the equivocality, to discover the features which can cause equivocality, and to suggest an equivocality managing strategy for more objective hiring decision. This study has proposed a method for quantitatively measuring equivocality which can act as a criterion for objective recruitment and has discovered the proxy which maximizes human bias so that has supported some perspectives on the alternative hiring process such as blind recruitment and voting system.

Keywords

AI Recruitment, Human Bias, Succession of Bias, Equivocality, Human-AI Interaction, Automated Essay Scoring, Named Entity Recognition, Fair AI

Introduction

Essay-based recruitment process such as CV (Curriculum Vitae) or resume is widely applied in various cultures. For the ideal essay assessment, people generally expect recruiters to focus on the applicant's capability, but it was perceived to be unfair since it is highly involved by the recruiter's subjectivity [2]. In this situation, the application of the AI (Artificial Intelligence) recruitment system has been expected to improve the hiring process to be more accurate, fast, and bias-less [30]. After the actual application of the AI recruitment system, however, people experienced unexpected problems for maintaining it. First, it was hard to quantitatively measure how fair the AI is [20]. This can cause not only the problem of difficulty in assessing the fairness of the AI, but also the problem of difficulty in feeding the accurate label and establish the rational loss function required when training the AI. Second, the AI which had learned the human decision has also reproduced the human bias [1]. That is, the AI

recruitment system is not liberate from the recruiter's subjectivity, so that it cannot improve the human decision without dealing with the succession of bias [18]. Several attempts were made to manage these problems, but consensus between the scholars has not been reached yet.

This study focuses on the equivocality, as the reason for the unfair essay-based hiring process and as the clue for human augmentation to solve the solve the problem of the AI recruitment system. Equivocality refers to the possibility of simultaneous but divergent interpretation due to the different perceptual direction from individual to individual such as subjectivity [10]. Concerning that recruitment process is perceived to be unfair due to the involvement of the recruiter's subjectivity [2], essay-based recruitment process will be perceived to be objective and fair as equivocality is improved to clearly converge the perceptual direction which everyone can agree on [15]. Even if it is impossible to convince everyone of the direction, people may experience the procedural fairness in the process of improving towards the convergence.

Following such idea, this study aims to discover (1) how much equivocality impacted the previous essay-based recruitment process, (2) which factor in the essay causes the equivocality, (3) and how can manage unfairness of future AI recruitment process in terms of mitigating equivocality. We constructed AES (Automated Essay Scoring) models with NER (Named Entity Recognition) which reproduce the recruiter's hiring decision and experimented how much the AI depends on each recruiter's bias and which entity triggers that dependence.

Literature Review

Equivocality

Adoption of the AI systems in various industries caused and is expected to cause more changes in terms of productivity, automation and supporting decisions [25]. But

Table 1 - Types of Bias Succession

Human Bias	Definition	Succession Path	Descriptions
Cognitive Bias	The systemic error derived from the people's limited ability to attend to and properly process all the information that is potentially available to them [12].	Cognitive Bias → Computational Error	A random error from the human's perceptual limitation can cause computational bias and variance [1].
		Computational Error → Cognitive Bias	Humans tend to give excessive significance to evidence from the AI decision and ignore others which refutes it [3].
			People do not recognize when automated systems error or follow automated systems without considering contradictory information [7].
Human Error	The mistake made by a person resulting the failure to perform a task that could lead to the disruption of scheduled operations or could damage to property [8][23].	Human Error → Computational Variance	Algorithms that learn from human decisions will also learn human mistakes [18].
Prejudice	A negative evaluation of a social group, or a negative evaluation of an individual that is significantly based on the individual's group membership [4].	Prejudice → Computational Bias	Machine learning models can replicate or amplify prejudice towards other age, gender, or ethnicity [21].

paradoxically, recent studies have emphasized the role of humans as the importance of AI in industry grows. For example, some has identified human advantage for reducing the complexity in that human can seek the proper domain to collect and preprocess the data and identified human advantage for reducing uncertainty in that human can make heuristic decision in the face of unknown [10]. Others have taken attention to the human's role to properly mirror the socio-technical context within the human-AI interaction rather than focusing on the AI performance improvement [7]. Still others have stated that equal consideration of every stakeholder's interest is absent in pure automation, so that AI-human augmentation is required for the fair decision [26]. However, one of the main challenges in performing human roles within the human-AI augmentation is perceived as equivocality: that is, people can judge differently facing the same situation [10]. Equivocality could be occurred in several conditions: when there is no clear consensus on the consistent goal [22]; when the issue is what cannot be intrinsically agreed such as moral or political inclinations [6]; or when the decision makers have a various conflicting interest [10]. When AI learns such cases, it could be confused due to the different perceptual directions and since these are the qualitative values, it is ambiguous to weight a specific decision. Therefore, the solution for mitigating equivocality is reaching a consistent consensus through constant consultation and AI can support this process through analyzing the data in a diverse interpretation [10].

Succession of Bias

Human decisions are often subjective or even unfair since humans have psychological biases called human bias [19]. AI, in contrast, is perceived to be more rational than human, so that people expected that the AI reproducing the human decision may alleviate human bias by interacting with human decision makers [7][24][26]. However, scholars have warned that the AI trained with human decision succeeds its biases and human who have made the decision with the support of AI creates new biases [3][18]. For example, suppose a recruiter with the prejudice in believing that hiring natives is always better than hiring foreigners. His hiring decision may heavily depend on the applicant's nationality and the algorithm learning that decision will be probably biased due to the overfitting on the nationality feature. In this case, the recruiter's prejudice leads the computational bias which not only can lower the performance of the algorithm but also makes the algorithm not to reflect the common good [1][19]. In addition, the future recruiters who have referenced the AI overfitted on the nationality feature may depend more on the applicant's nationality. Such phenomenon is explained with the confirmation bias, the tendency of human decision maker to stick excessively on the AI decision and ignore other features [3]. That is, in a process in which the better AI aids to the improvement of the human decisions and the improved human decision is fed to the AI to make it performs better, bias could be inherited in either direction so that the vicious cycle which amplifies the bias is created in a long-term. The possible path of the succession is described in Table 1.

AES and NER

AES is the AI model designed to reproduce the human scoring behavior which predicts the quality score from the given essay with NLP (Natural Language Process) techniques [24][28]. Mirroring that essay scoring is generally conducted in multi-point scale, scholars have attempted AES by both multi-class classification model and regression model: the former premises that each score of the essay can act as the fixed label of the essay and the latter premises that each score is the continuous and ordered value [5].

When a literature conducting AES intends to define a specific purpose, NER is often applied. NER is an algorithm which identifies the named entity, the type of information elements that a word contains [14]. For instance, NER for identifying the word's purpose or domain classifies whether the word is indicating the specific name of person, location, or institution. Previous studies have applied NER for finding the suitable words [17] or for regulating the inappropriate words [27] to the purpose.

Research Design and Hypotheses Development

Data Description

The CV data written in Korean from five period assessed by the same institution was used for this study. The recruiters who have assessed the CV of each period are placed differently. The CV data consists of four items of essay introducing the applicant himself/herself for following competitiveness: communication capability; problem-solving capability; organizational understanding capability; and professional ethics. The data identifies the applicants, and each item is scored separately. About 60,000 cases of the data are totally prepared and their maximum length has been limited as 500 characters. Data is scored by 5-point scale, and it is a relative rating with a set number of people to be assigned to each score. Recruiters who scored the CV data were asked to assess it with the essay contents only, without referencing the additional information about the applicants (i.e., the CV score is structurally independent to information other than CV contents).

Evaluating the Impact of Equivocality

Suppose the CV data from period A assessed by recruiters A and CV data from period B assessed by recruiters B (see Figure 1). An AES model which has learned the train data of period A (hereafter, model A) could reproduce the hiring decision of recruiters A including their human bias, due to the succession of bias. In this case, the performance of model A's prediction on the test data of period A (hereafter, self-prediction), may be higher than the performance of model A's prediction on the test data of period B (hereafter, cross-prediction), due to the equivocality between the different recruiters. In other words, model A will be overfitted on the human bias of recruiters A, so that model A cannot properly reproduce the decision of the recruiters B which may show the different perceptual direction to recruiters A [13]. Following the idea, we hypothesized as follows:

[H1] Due to the equivocality, the computational error of cross-prediction will be higher than the computational error of self-prediction.
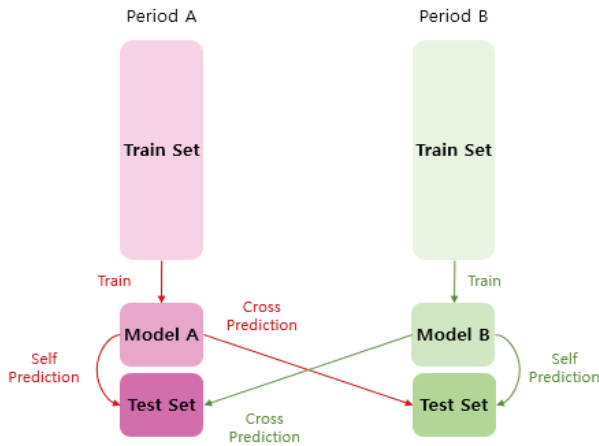

Figure 1 – Structure of Self-prediction and Cross-prediction

Features Causing Equivocality

CV often contains proxies which allow recruiters to infer the applicant's personally identifiable information and these proxies are identified as the key factors of human bias in recruitment process [16]. The examples of the inferences from the proxies are described in Table 2 [21]. Due to the equivocality, the impact of each proxy to the human bias may affect each recruiter differently. For example, person name which allows recruiters to infer the applicant's gender and ethnicity [21], may cause discriminatory prejudice which can amplify the computational bias [19]. However, the direction of the prejudice may be different depending on the recruiter's gender: if the recruiter and the applicant are the same (different) gender, the prejudice will affect recruiter's score in the positive (negative) direction since they are in the same (different) social group.

The items of the CV could also be the features which causes the equivocality. As the principles for measuring moral concepts are given to be abstract and ambiguous [15], it may be harder to make a clear consensus on evaluating professional ethics than capability. For instance, comparing to the problem-solving capability, if an applicant describes the problem situation and logically introduces how she solved it, recruiters can determine that the applicant has the problem-solving capability. On the other hand, if the applicant explains a case in which she has made an ethical decision, recruiters should judge whether the decision is ethical depending on their subjectivity. Therefore, this study assumed that the equivocality will be observed more in the CV on the professional ethics than communication capability, problem-solving capability, and organizational understanding capability.

According to Table 1, since the expected influence of human bias to computational error can be considered as two (i.e., path to computational bias and path to computational variance), we hypothesized as follows:

[H2] The existence of the proxies in the CV will amplify the equivocality in terms of computational bias (H2a) and computational variance (H2b) and CV on professional ethics will show higher computational bias (H2c) and computational variance (H2d) than CV on other capabilities.

Table 2 – Proxies and Possible Inferences

Proxies	Possible Inferences
Person Name	Gender, Ethnicity
Location Name	Ethnicity, Sociocultural
Institution Name	Education
Number Expression	Age

Unfairness Management by Mitigating Equivocality

Generally, training a large amount of data is known for a method for improving the AI model performance [29], so that concatenating data from various sources can be considered for the better model performance. However, we assumed that concatenating data from two different sources could lessen the model performance in terms of variance if the equivocality is high. As described in Figure 2, since the high equivocality refers to the high difference in perceptual direction of two decision maker, concatenating two equivocal data may force the algorithm to concentrate additional bias direction which may cause computational variance. If the performance degradation of the algorithm due to this assumption is significantly occurred, concatenating a large scale of sample data would not be the solution for constructing better algorithm. Therefore, we hypothesized as follows:

[H3] The data concatenated two different equivocal data will show the high variance (H3a), so that the computational variance of the algorithm which trains the concatenated data will be greater compared to the algorithm which trains the data separately (H3b).
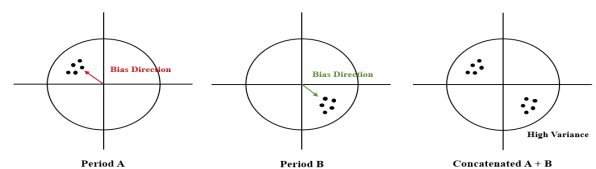

Figure 2 – Variance Occurred by Bias Concatenation

Methodology

AES Model Construction

In order to construct an AES model which reproduces the recruiter's decision, preprocessing phase and modeling phase are conducted. For the preprocessing phase, proxies are tracked by KoBERT based NER-tagging. KoBERT is a BERT-based embedding algorithm specialized for Korean created by SKTBrain. In this study, KoBERT is selected as an embedding method for following two reasons. First, since proper nouns are widely used for explaining the applicant's unique career in CV, we assumed that BERT-based method, which can infer the meaning of untrained token, is the most suitable embedding method. Second, since none of the CV data, which has a limit of 500 characters, exceeds the KoBERT's length limit of 512 characters, it was suitable for retaining the full contents of each CV. Through NER-tagging, we obtained a dictionary containing the noun list for each proxy. For the modeling phase, LSTM (Long Short-Term Memory) regressor model [5] is selected. Since BERT embedding allocates positive or negative vector randomly to each element of the token, hyperbolic tangent function was used for the hidden layer with the intention to use the zero-centered function. Regressor model was selected since continuous value is more suitable for measuring statistical significance and is more suitable for linear regression model described in Equation (8) (9), (10) and (11) than the categorical value of the classifier. The CV data embedded in preprocessing phase is fed to this LSTM regressor in modeling phase. Model A described in Figure 1 is what we fed the train data of period A to this algorithm.

Experiment Model for Evaluating Equivocality

The actual label of test data of period A and the actual label of test data of period B is denoted as $y_R^A y_R^A$ and $y_R^B y_R^B$ respectively. The predicted label of period A by model A is denoted as $y_{PA}^A y_{PA}^A$, the predicted label of period A by model B is denoted as $y_{PB}^A y_{PB}^A$ and the predicted label of period B by model B is denoted as $y_{PB}^B y_{PB}^B$.

Following the measurement of MSE (Mean-Squared Error), the *CES* (Computational Error of Self-prediction) and the *CEC* (Computational Error of Cross-prediction) can be evaluated as follows:

$$CES = E[(y_R^A y_R^A - y_{PA}^A) y_{PA}^A)^2] \tag{1}$$

$$CEC = E[(y_R^B y_R^B - y_{PA}^B) y_{PA}^B)^2] \tag{2}$$

According to H1, *CEC* is expected to be higher than *CES* due to the equivocality, so that it can be interpreted that the greater the gap between the two, the greater the degree of equivocality. In this regard, we defined *ES* (Equivocality Score) as following function:

$$ES = CEC - CES \tag{3}$$
$$= E[(y_R^B y_R^B - y_{PA}^B) y_{PA}^B)^2] - E[(y_R^A y_R^A - y_{PA}^A) y_{PA}^A)^2]$$

ES refers to the quantitatively measured value of equivocality, indicating that how different the perceptual directions of two different recruiters are. If there is a statistically significant difference between $y_{PA}^B y_{PA}^B$ and $y_{PB}^B y_{PB}^B$ and if equivocality score is higher than 0 (i.e., *ES* > 0), H1 will be supported.

Experiment Model for Features Causing Equivocality

According to the bias-variance tradeoff, computational error could be decomposed by computational bias and computational variance [9][11], which is described as:

$$CE = CB + CV + \varepsilon\varepsilon \tag{4}$$

Where *CE* denotes the computational error, *CB* denotes the computational bias, *CV* denotes the computational variance and $\varepsilon\varepsilon$ denotes the residual. Following the Equation (4), *ES* is decomposed as follows:

$$ES = CEC - CES \tag{5}$$
$$= (CBC + CVC + \varepsilon\varepsilon_1) - (CBS + CVS + \varepsilon\varepsilon_2)$$
$$= (CBC - CBS) + (CVC - CVS) + (\varepsilon\varepsilon_1 - \varepsilon\varepsilon_2)$$

Where *CBC* denotes the computational bias of cross-prediction, *CVC* denotes the computational variance of cross-prediction, *CBS* denotes the computational bias of self-prediction and *CVS* denotes the computational variance of self-prediction. In the third row of Equation (5), *(CBC – CBS)* and *(CVC - CVS)* are the elements which amplify the equivocality. On the one hand, *(CBC - CBS)* refers to the difference in computational bias of cross-prediction and self-prediction, so that it is interpreted as the amplification of equivocality in terms of bias. On the other hand, *(CVC - CVS)* refers to the difference in computational variance of cross-prediction and self-prediction, so that it is interpreted as the amplification of equivocality in terms of variance. Decomposing the Equation (3), each amplification could be measured as follows:

$$CBC - CBS = (E[y^B_{DA} y^B_{DA}] - y^B_R y^B_R)^2 - (E[y^A_{DA} y^A_{DA}] - y^A_R y^A_R)^2 \quad (6)$$

$$CVC - CVS = E[(y^B_{DA}\ y^B_{DA} - E[y^B_{DA} y^B_{DA}])^2] - E[(y^A_{DA}\ y^A_{DA} - E[y^A_{DA} y^A_{DA}])^2] \quad (7)$$

In order to discover which features cause the equivocality, we constructed a linear regression model for examining whether *ES* increases depending on the existence of proxies and the type of the item [13]. Both amplifications described in Equation (6) and Equation (7) are the dependent variables and the proxies and items selected in H2 are the independent variables. The regression model is constructed as follows:

$$(E[y^B_{DA} y^B_{DA}] - y^B_R y^B_R)^2 - (E[y^A_{DA} y^A_{DA}] - y^A_R y^A_R)^2 \quad (8)$$
$$= aa_1 * @PERSON + aa_2 * @LOCATION$$
$$+ aa_3 * @INSTITUTION + aa_4 * @NUMBER$$
$$+ aa_5 * @ITEM + aa_6 + \gamma_{self}\gamma_{self} + \gamma_{cross}\gamma_{cross}$$

$$E[(y^B_{DA}\ y^B_{DA} - E[y^B_{DA} y^B_{DA}])^2] - E[(y^A_{DA}\ y^A_{DA} - E[y^A_{DA} y^A_{DA}])^2] \quad (9)$$
$$= \beta\beta_1 * @PERSON + \beta\beta_2 * @LOCATION$$
$$+ \beta\beta_3 * @INSTITUTION + \beta\beta_4 * @NUMBER$$
$$+ \beta\beta_5 * @ITEM + \beta\beta_6 + \gamma_{self} \gamma_{self} + \gamma_{cross}\gamma_{cross}$$

Where aa_1, aa_2, aa_3, aa_4, aa_5, $\beta\beta_1$, $\beta\beta_2$, $\beta\beta_3$, $\beta\beta_4$ and $\beta\beta_5$ are the coefficients, aa_6 and $\beta\beta_6$ are the error terms, @PERSON, @LOCATION, @INSTITUTION and @NUMBER denote whether the test data of period B contains the name of person, location and institution and the number expression respectively, @ITEM denotes whether the CV is for professional ethics and $\gamma_{self}\gamma_{self}$ and $\gamma_{cross}\gamma_{cross}$ are the constants representing the recruiters of period A and period B respectively. According to Equation (8), H2a will be supported if aa_1, aa_2, aa_3 and aa_4 are greater than 0 and H2c will be supported if aa_5 is greater than 0, within the premise that coefficients are statistically significant. Likewise, according to Equation (9), H2b will be supported if $\beta\beta_1$, $\beta\beta_2$, $\beta\beta_3$ and $\beta\beta_4$ are greater than 0 and H2d will be supported if $\beta\beta_5$ is greater than 0, within the premise that coefficients are statistically significant.

Experiment Model for Unfairness Management

In order to investigate H3a, the greater equivocality of two different sample data, the higher variance of the concatenated data of those two should be. Therefore, we constructed a linear regression model as follows:

$$E[(y^C_R\ y^C_R - E[y^C_R y^C_R])^2] = w_1 * ES + \varepsilon\varepsilon_3 \quad (10)$$

Where $y^C_R y^C_R$ denotes the actual label of concatenated data of period A and B (hereafter, data C), w_1 denotes the coefficients and $\varepsilon\varepsilon_3$ denotes the error term. Equation (10) shows the relationship of the more equivocal the data A and B are, the more variance the concatenated data shows. If the relationship is statistically significant, H3a will be supported. Moreover, in order to experiment H3b, we constructed another linear regression model as follows:

$$E[(y^B_{PC}\ y^B_{PC} - E[y^B_{PC} y^B_{PC}])^2] = w_2 * E[(y^C_R\ y^C_R - E[y^C_R y^C_R])^2] + \varepsilon\varepsilon_4 \quad (11)$$

Where $y^B_{PC} y^B_{PC}$ denotes the predicted label of period B by the model which trained data C, w_2 denotes the coefficient and $\varepsilon\varepsilon_4$ denotes the error term. Equation (11) refers to the path from *ES* to computational variance with the mediating effect of the variance of the concatenated data.

Discussion

Implications

This study focused on the equivocality for the fair AI recruitment process. The experiment of this study can contribute to the reduction of the recruiter's subjectivity in hiring decision in following points.

First, this study suggested the quantitative method for measuring equivocality (i.e., equivocality score) of the hiring decision. Since AI recruitment system which reproduces the human decision also reflects the human bias of the recruiters it referred to, it may be overfitted on their human bias. That is, how much does the AI is overfitted represents how much the perceptual directions of the recruiters are different, as long as other conditions are consistent. Equivocality score can act as a measure for evaluating how much the hiring decision is objective and fair and also can act as a guideline for adjusting the organization's common goal on recruitment process. This approach can convert the vicious cycle of bias

succession to virtuous cycle of adjusting objectivity. Recruiters can discuss in a long-term aiming to minimize the equivocality score, so that they can yield a less-equivocal decisions. Improved decisions can be fed to the AI recruitment system as a train data and the better outputs it has predicted can support better discussion of the recruiters for minimizing equivocality score.

Second, this study discovered the features which cause equivocality. Recently, various cultures have considered to adopt the blind recruitment, masking the applicant's personally identifiable information while assessing their CV, in order to reduce the human bias of the recruiters. However, it still has a controversial whether it is valid or fair. In this regard, investigating the effect of proxies on the equivocality score can be the basis of the blind recruitment adoption decision. Considering that NER masking itself does not affect the performance on the AES in general [24], automatically masking some proxies with NER in advance before the CV assessment could be the solution for the fairer recruitment process if those proxies are discovered to result equivocality. Meanwhile, if professional ethics shows more equivocality than other items, the robustness of the ethics evaluation should be more sophisticatedly managed and discussed.

Finally, this study presented another view for managing CV data fed to the AI recruitment system. Although feeding a large amount of data to the algorithm generally improves its performance, data with high equivocality requires an additional concern. Concatenating CV data scored by different recruiters may lessen the model performance since it could involve high variance even if the scale of the data becomes larger. That is, it is challengeable to construct a single sophisticated AI recruitment system: extra solutions for managing computational variance may be required. Instead, this study suggests constructing a voting system of two or more different AI recruitment system trained by consistent recruiters. Though voting system may not guarantee the high performance in a short-term, it may help recruiters to view the AI decision in a multiple direction and make them to perceive and understand the potential biases. This idea is in the same line with what previous studies have pointed: the way to mitigate equivocality is for humans to discuss and AI to present multiple perspectives [10]. Voting system may reproduce the human consultation and let recruiters to perceive the data in various facets.

Limitations and Future Study

Although this study contains valuable insights, there are some points which must be cautiously understood. First, this study has only used the CV data from a single institution. Though it may contribute to the consistency of the analysis, but more cases should be studied to generalize our study. Second, this study should be understood as a new approach rather than confirmed answer. As equivocality occurs depending on the random recruiter's random human bias, the weights of every coefficient could be measured differently if our methodology is applied to other nations or organizations based on their own characteristics. For example, in the context of Republic of Korea, gender prejudice tends to be more pronounced than ethnicity prejudice, but the impact priority of each prejudice could be reversed in the context of other multi-ethnic country. In this case, the coefficient of location name may become greater compared to our study. Therefore, future studies must concern the context of the study and its robustness in order to apply our approach.

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Groundwater Aquifer Modelling Of Kathmandu Valley

Er.Dinesh Adhikari[1] Dr. Sateesh Kumar Ojha[2]

[1]*Ph.D Scholar, Lincoln University College, Indrawati Rural Municipality ward no.4, Sindhupalchok*
Nepal, email: dinesha872@gmail.com
[2]*Regional Dean, Lincoln University College, Malaysia, email:* sateeshkumarojha@gmail.com

Abstract

Groundwater is important resources in Kathmandu valley to provide water for drinking water consumption and agriculture as well. It played important role in sustainable development. Increased population due to rapid urbanization, change in land use pattern, and formation of impervious surface due to built-up area led to lowering of ground water table and reduction of groundwater recharge as well.

The study focused on groundwater aquifer modelling of Kathmandu valley through Rockworks15. A stratigraphic layer's model of Kathmandu valley will be developed.The aquifer system will be modeled using Rockworks15 and Surfer 8 software. The layer modeling of groundwater aquifers of the Kathmandu valley will be done to determine the number of aquifers layers and its thickness.

Based on the data collected by 32 monitoring wells in the Kathmandu valley, the ground water static water level in the Kathmandu valley has declined significantly. This issue has caused significant environmental impacts and has prompted the need for proper groundwater management.

Keywords

Groundwater table, Kathmandu valley, overexploitation, urbanization, Rockworks15, stratigraphic layer

Introduction

Because of its abundance, consistent water quality, and cost-effective usage, groundwater is a key supply of water for cities and towns all over the world [1]. Geology, crack depth, and terrain all have a role in determining groundwater supplies. Groundwater is critical to long-term development because it provides water for residential, industrial, and agricultural uses. Due to lack of understanding of the groundwater system, the indiscriminate and overexploitation of groundwater, on the other hand, poses a severe danger to its long-term viability. There was a tremendous desire to see the entire picture, which included all facets of this resource. As a result, improving scientific understanding of groundwater formation and behaviour, as well as the accompanying needs, uses, governance, and institutional processes, is critical for long-term groundwater management [2].

The important purpose of most groundwater surveys is to quantitatively evaluate groundwater resources in terms of total volume of water stored in the aquifer, or long-term average recharge. Groundwater recharge is mainly determined by the imbalance between precipitation and evaporation on the surface [3]. Groundwater intake above the average recharge leads to sustained depletion of the groundwater reservoir and depletion of the water table. Therefore, safe groundwater withdrawal and proper groundwater management are important for resource sustainability [4]country, and global levels, we applied a new version of the global hydrological model WaterGAP that simulates not only net groundwater abstractions and groundwater recharge from soils but also groundwater recharge from surface water bodies in dry regions. A large number of independent estimates of GWD as well as total water storage (TWS.

The Kathmandu Valley is an elliptical valley with an area of approximately 899 km2. It is located in the Himalayas of central Nepal, having 30 km east-west and 25 km north-south [5]industry, hotels and agriculture as well. Rapid urbanization, mushroomed increment in the built up area, overexploitation of surface and groundwater resource, removal of vegetation cover, change in land use pattern, and formation of impervious surface have led the ultimate lowering of groundwater table and minimization of groundwater recharge as well. This study quantifies the drawdown rate along with the groundwater dynamics across the Kathmandu valley, as

the valley constitutes mostly of the urban population of Nepal including the capital city. In Kathmandu valley, for domestic purpose as well as the industrial purpose, water has been pumped continuously surpassing the natural recharge. The groundwater table drawdown has been estimated based on the recorded data of average static groundwater table depth and was found to be 0.7249 m in average and linear regression model of drawdown has been depicted along with the associated range of standard deviation. This drawdown has close proximity with the Mexico City alluvial deposit where ground subsidence is nowadays noticeably occurring. Similar land subsidence, water pollution and scarcity of water would be the near future consequence in Kathmandu valley as nearly 50 % of valley population relies on groundwater resources. Similarly, the groundwater dynamics study has shown the shifting of drainage towards southwestern part of Kathmandu valley. Thus Kathmandu valley is in dire need of proper groundwater management execution in order to avoid the hydrological, hydro-geological and environmental impacts of rapid drawdown.","container-title":"The Open Hydrology Journal","DOI":"10.2174/1874378101408010017","ISSN":"18743781","issue":"1","journalAbbreviation":"TOHYDJ","language":"en","page":"17-26","source":"DOI.org (Crossref.The study area, Kathmandu valley is situated between latitude 27^0 32'N to 27^0 49'16" N and longitude $85^013'28"$ E to $85^031'53"$ E and lies at an average elevation of about 1,300 m above sea level.
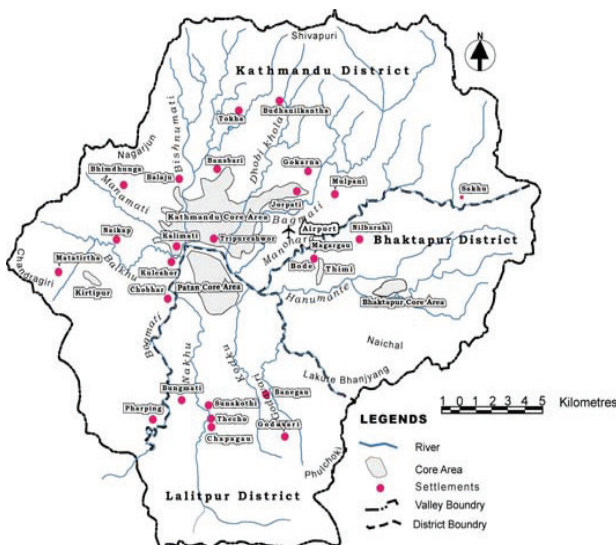
The Kathmandu Valley has three historic cities: Kathmandu, Lalitpur and Bhaktapur. This valley is Nepal's most densely populated area covering one metropolitan city, one sub metropolitan city, and three municipalities. Kathmandu valley is a fast-growing city with a population of approximately 2.5 million people (CBS, 2011). The settlement within the valley is developing unsystematically without proper planning.

Figure 1.1 Drainage map of Kathmandu valley basin (A Dixit, 2005)

The valley is drained by the Bagmati River, which rises above the Shivapri Hills in the north. The river flows southwest, cutting the valley of Chobar, and crossing the Mahabalat range in Katwaldaha.

Nakhu, Kodku, Godavari, Balkhu, Bisnumati, Dhobi, Manohara, Hanumante and Manamati are the nine major tributaries of the Bagmati River [6].
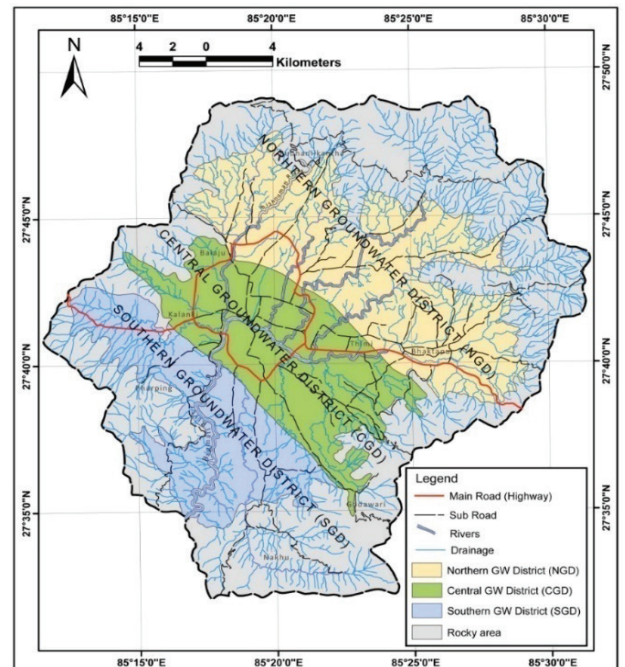
The groundwater of the Kathmandu Valley is divided into three groundwater districts according to geological formation (Fig. 2.2). Northern Groundwater District (NGD), Central Groundwater District (CGD), and Southern Groundwater District (SGD) [7].

Figure 1.2 Map of Kathmandu Valley showing geological formation and groundwater zones (JICA, 1990)

Especially since the early 1970s, when the valley rapidly developed into the urban center, The water was extracted from the deep part of the aquifer to meet the escalating water demand in the Kathmandu valley by mechanical extraction. Groundwater extraction increased dramatically in the mid-1980s due to increased population, rapid urbanization, and industrialization, including tourism. Even now, the withdrawal rate is

continually increasing. According to secondary sources, groundwater extraction was increased from 2.3 million litres per day (MLD) in 1979 to 80 MLD in 2011 [2]. The Kathmandu Valley's groundwater aquifer is one of the locations where the water table is lowering due to excessive withdrawals [5]industry, hotels and agriculture as well. Rapid urbanization, mushroomed increment in the built up area, overexploitation of surface and groundwater resource, removal of vegetation cover, change in land use pattern, and formation of impervious surface have led the ultimate lowering of groundwater table and minimization of groundwater recharge as well. This study quantifies the drawdown rate along with the groundwater dynamics across the Kathmandu valley, as the valley constitutes mostly of the urban population of Nepal including the capital city. In Kathmandu valley, for domestic purpose as well as the industrial purpose, water has been pumped continuously surpassing the natural recharge. The groundwater table drawdown has been estimated based on the recorded data of average static groundwater table depth and was found to be 0.7249 m in average and linear regression model of drawdown has been depicted along with the associated range of standard deviation. This drawdown has close proximity with the Mexico City alluvial deposit where ground subsidence is nowadays noticeably occurring. Similar land subsidence, water pollution and scarcity of water would be the near future consequence in Kathmandu valley as nearly 50 % of valley population relies on groundwater resources. Similarly, the groundwater dynamics study has shown the shifting of drainage towards southwestern part of Kathmandu valley. Thus Kathmandu valley is in dire need of proper groundwater management execution in order to avoid the hydrological, hydro-geological and environmental impacts of rapid drawdown.","container-title":"The Open Hydrology Journal","DOI":"10.2174/1874378101408010017","ISSN":"18743781","issue":"1","journalAbbreviation":"TOHYDJ","language":"en","page":"17-26","source":"DOI.org (Crossref. The increased vulnerability of the groundwater system are groundwater resource depletion, quality deterioration, and land subsidence has been attributed to extensive use of groundwater beyond the rate of recharge, as well as insufficient management of solid waste and wastewater from urban areas [8]. The population of the capital, which is estimated to be about 3 million people, will likely grow substantially in the future years. In the face of rising population expansion, meeting the population's water demands has become increasingly challenging. Groundwater extraction has an immense pressure on the groundwater balance and availability of groundwater resources. The water table in the Kathmandu valley has been steadily falling, according to reports. Metcalf and Eddy (2000) show an alarming condition in the valley, where the pumping water level has dropped from 9 m to as low as 68 m in just a few years. [9]. As the hydro geological setting of the Kathmandu valley is complex, the flow pattern of groundwater is poorly defined and understood. Therefore, it is crucial to understand the aquifer system and groundwater monitoring for resource sustainability [10].

Increased number of governmental and private organizations and industries are pumping water from shallow and deep wells from the subsurface exploration in Kathmandu valley. This causes the groundwater table in the Kathmandu valley to deplete, posing a serious threat to the region. As a result, study is required to determine the primary effects of abstraction on groundwater supplies. Furthermore, it was revealed that groundwater level monitoring in the valley is relatively limited and irregular. The aim of this research work is to generate a layered conceptual model for the groundwater system for the Kathmandu valley aquifer system. All relevant data on the system's physiographic, geology, and hydrogeology will have been collected, analyzed, and used to create a layered model in Rockworks15.

1.0 OBJECTIVE OF THE RESEARCH WORK

The main objective of this research work is to estimate the groundwater resource of the well field and to enhanced knowledge and perception of the groundwater layered aquifer system of the Kathmandu valley. The particular objective of this research is

❖ To learn about the Kathmandu valley's groundwater aquifer systems using Rockworks modelling and data analysis

❖ To determine the influence of groundwater abstraction on groundwater decrease using groundwater monitoring data from the Kathmandu valley.

The aim of this study is to use the groundwater footprint to calculate aquifer-scale estimates of yearly volumes for groundwater withdrawal, recharge, and contribution to environmental flows in order to give screening level estimates of aquifer stress in Kathmandu valley [11].

The main tasks involved in this study include:

- ❖ Collect Quaternary geology and borehole data in order to assess Kathmandu Valley aquifer conditions.

- ❖ Analysis of available data in Rockworks to create a lithological, stratigraphic, and aquifer model.

- ❖ Use available groundwater monitoring data to calculate drawdown in three separate groundwater districts of Kathmandu valley, namely the Northern Groundwater District, the Central Groundwater District, and the Southern Groundwater District.

LITERATURE REVIEW

The groundwater in a basin isn't still; it's always moving. The water table rises as rain and surface water percolate below. At the same time, evapotranspiration, spring discharge, and outflow into streams and other natural drainage systems reduce its volume, lowering the water table. The average recharge equals the average outflow over a lengthy period of time, resulting in a condition of hydrological equilibrium. The average level of the water table is nearly constant, with only seasonal changes [12]. The withdrawal of groundwater from wells lowers the water table, allowing natural recharge to grow while decreasing natural outflow. Excessive well abstraction can result in a steady drop in the water table, indicating that groundwater supplies are depleting [13]arid, and semi-arid lands represent over a third of the Earth's land surface, and are home to over 38 % of the increasing world population. Freshwater is a limiting resource on these lands, and withdrawal of groundwater substantially exceeds recharge. Withdrawals of groundwater for expanding agricultural and domestic use severely limit water availability for groundwater dependent ecosystems. We examine here, with emphasis on quantitative data, case histories of groundwater withdrawals at widely differing scales, on three continents, that range from the impact of a few wells, to the outcomes of total appropriation of flow in a major river system. The case histories provide a glimpse of the immense challenge of replacing groundwater resources once they are severely depleted, and put into sharp focus the question whether the magnitude of the current and future human, economic, and environmental consequences and costs of present practices of groundwater exploitation are adequately recognized.","container-title":"Ambio","DOI":"10.1007/s13280-012-0328-8","ISSN":"0044-7447","issue":"7","journalAbbreviation":"Ambio","note":"PMID: 22773380\nPMCID: PMC3472013","page":"657-

669","source":"PubMed Central","title":"The Water Table: Shifting Foundation of Life on Land","title-short":"The W Table","volume":"41","author":[{"family":"Glazer","given":"Alexar N."},{"family":"Likens","given":"Gene E."}],"issued":{"date-parts "2012",11]]}}}],"schema":"https://github.com/citation-style-langua schema/raw/master/csl-citation.json"} .

Numerous research on the Kathmandu Valley's groundwater aqui have been conducted since the early 1960s.

Sharma and Singh (1966) studied the groundwater situation in Kathmandu valley as part of the groundwater research of N Government and the Indian Geological Survey. They carried ou systematic hydrogeological analysis, followed by drilling, and gathe the results of multiple investigative drilling operations [10].

Binnie & Partner (1973) investigated the groundwater supply sewerage scheme in Kathmandu. Interbedded, linear, bedrock, b gravel, river deposit, gravel fans, and surface gravel were the seven ty of aquifer strata they identified [14].

Yamanaka (1982) conducted research on the geology of Kathma Valley. He classified Kathmandu Valley fluviolacustrine sediment Pyangaon terraces, Chapagaon terraces, Boregaon terraces, Goka formation, Upper Thimi formation, Upper Patan formation, P formation, Lower terraces, and Flood plain [10].

Yoshida and Igarashi (1984) looked at the Kathmandu Valley's lacust and fluvial deposits. Peat, clay, carbonaceous clay, sand, and gravel m up the Kathmandu Valley's fluvio-lacustrine system. These strata v categorised into eight stratigraphic units by the researchers[15].

Dangol (1985,1987) classified the Kathmandu valley's fluvio-lacust deposit into five groups which were Kalimati clay, ChhampiItaiti gra NakhuKhola mudstone, KeshariNayakhadi lignite, and Tarephir B based on their geological components [16]Lukundol, Itaiti, Kalin Sunakothi Formations and Terrace gravel deposits, have been descri based on field observation of lithology and sediment distribution. Tarebhir Formation is the basal unit which is overlained by alluvial of the Itaiti Formation in the southern part and by the marginal lacust deposit of the Lukundol Formation towards the northern part. Furth km toward the north from the basin margin at Jorkhu the the Lukur Formation is overlain by the open lacustrine facies of the Kalin Formation. At the same locality the latter is overlain by fluvio-lacust facies of the Sunakothi Formation. Moreover, the Terrace gravel depo erosionally cover the Sunakothi Formation. The Kalimati Forma thickens northward, while the Sunakothi Formation thickens betw the central and southern part of the basin. The study shows that Sunakothi Formation is of fluvio-lacustrine (fluvial, deltaic and shal lacustrine.

JICA (1990) conducted a research project "Groundwater Managen Project in Kathmandu Valley" for overall groundwater managen and sustainability issue. The availability of groundwater recharg characterized by the widespread distribution of lacustrine depo interbedded with impermeable black clay, which restricts percolatio rain water into the ground. They have divided the Kathmandu valley three groundwater districts (GWDs): the Northern GWD, the Cer

GWD, and the Southern GWD [7].

Gautam and Rao (1991) studied on the evaluation and estimation of the groundwater resources in the Kathmandu valley. They divided the Kathmandu valley groundwater into four aquifer zones: unconfined aquifer, two aquifer, confined aquifer zone, and no groundwater zone [17].

Department of Meteorology and Geology, Nepal (1998) prepared an engineering and environmental geological map of the Kathmandu valley. This study divided the fluvio-lacustrine of the study area into seven formations: basal boulder bed, Lukundol, Kabgaon, Kalimati, Chapagaon, Gokarna, and Tokha formation [10].

Metcalf and Eddy (2000), in collaboration with CEMAT Consultant, devised and implemented groundwater monitoring in the Kathmandu Valley in 1999 as part of the project "Urban Water Supply Reforms." They came to the conclusion that groundwater levels have been dropping as a result of abstraction. Groundwater Resources Development Project (GWRDP) under the Department of Irrigation (DOI) responsible for monitoring through 32 monitoring tube wells in three GWDs in Kathmandu valley in 2001 [18].

Sakai (2001) investigated the valley fill sediment deposits in depth. Three boreholes were dug in various locations, and a thorough study was conducted. Sakai split the southern section into three formations: Itaiti, Lukundol, and Tarebhir, while the middle half was separated into three formations: Kalimati, Basal lignite member, and Bagmati [19]central Nepal Himalaya were carried out in order to clarify the past Indian monsoon climate and its linkage to the uplift of the Himalaya. This is the first large-scale drilling project in the valley with full core recovery, and solely dedicated to academic research purpose. The drilling penetrated the whole sequence of 208 m thick Kalimati Clay, newly defined as the Kalimati Formation. Based on the drill-core study, the sediments are divided into three formations: 1.

Shrestha (2002) conducted research for the impacts of land use change on groundwater storage in the Kathmandu Valley. The author concluded that groundwater storage was continuously declining and drawdown increasing. He revealed that the depletion of groundwater in Kathmandu Valley was 0.3 metres in 1976 and increased to 1.826 metres in 1990 [20].

Dixit & Upadhyaya, 2005 prepared report on "Augmenting Groundwater Resources through Artificial Recharge". It compiled existing information of the numerous groundwater studies in the Kathmandu valley, as well as identified potential options for increasing groundwater supply to fulfill water demand [6].

Pandey et al. (2009) conducted research on the Kathmandu valley's groundwater environment. The study demonstrates that several stressors, such as increased population and rapid urbanization, led to a rise in groundwater withdrawal. The withdrawal rates exceeded the recharge rates, resulting in a decline in groundwater of 13-33 m from 1980 to 2000 and 1.38 to 7.5 m from 2000 to 2008 [9].

Pandey and Kazama (2010) studied the hydro geologic parameters of groundwater aquifers in the Kathmandu Valley. In the Kathmandu Valley.The study employed Arc GIS to map the spatial distribution of hydro geological characteristics such as aquifer thickness, transmissivity, and hydraulic conductivity of shallow and deep aquifers. Based on lithological data, the valley aquifer was divided into three categories: shallow aquifer, aquitard, and deep aquifer [21]compiles and comprehensively analyzes spatial variations in hydrogeologic characteristics of shallow and\ndeep groundwater aquifers in Kathmandu Valley. To estimate transmissivity (T.

2.0 METHODOLOGY AND DATA PREPARATION

The approach used in the research process is determined by the objectives that have been established. The technique used for the research effort is divided into three primary phases: Fieldwork, Pre-Fieldwork, and Post-Fieldwork.

Pre fieldwork: The available Kathmandu Valley studies were gathered and examined. Aside from the literature review, an archive of ASTER images, collection of borehole lithology, electrical log data are required as part of the secondary data collection. Data for the study will be gathered from local Water Authorities and companies, government agencies, and published reports and articles. Static water level monitoring data for 32 monitoring wells will be gathered from 2003 to 2020. All of the saved data in the form of excel sheets, maps, and charts from the fieldwork is evaluated and processed for feeding reliably and correctly into the conceptual groundwater model.

Fieldwork: Borehole log data can be obtained from the Kathmandu Valley Water Supply Management Board (KVWSMB), Asian Drilling Company (P) Ltd., National Drilling Company (P) Ltd., Groundwater Resources Development Board (GWRDB), Kathmandu Upatyaka Khanepani Limited (KUKL), and Nepal Water Supply

Corporation (NWSC). Groundwater level monitoring data can be gathered from the Groundwater Resources Development Board (GWRDB).

Post fieldwork (Data processing and analysis): The primary and secondary data collected during the pre-field and fieldwork stages are processed and evaluated at this stage. The processing of the data to match the data input requirements of the proposed model with Rockworks15. And then Surfer 8 is used to depict the bottom elevation of several shallow and deep aquifers as part of the input data processing form output of Rockworks15. Rockworks15 is used to create several cross-sections and fence diagrams to determine the top and bottom elevations of aquifer layers. In conjunction with geological cross-section and geophysical log data, well completion data is processed and summarized to calculate the aquifer thickness and vertical extension of layers. The decline in groundwater level in the Kathmandu valley was calculated using static water level monitoring data.

The modeling of groundwater aquifers layers aids in understanding the hydro geological system. It is required to have accurate borehole lithology data and coordinates. The method used to build this layered model included defining system boundaries, estimating the aquifer region using defined lithology, inputting stratigraphic layers using aquifer and aquitard identification criteria, compiling water level data, and contouring groundwater levels.

It is impossible to see into the subsurface and examine geological structure and groundwater flow processes. The most we can hope for is to construct boreholes, utilise them for pumping and monitoring, and track the impact on water levels and other system physical characteristics. Groundwater models have been used to examine the key properties of groundwater systems and to forecast their behaviour under various situations, and will continue to be utilised in the future [22].

A conceptual groundwater model of Kathmandu valley is built in this research using lithological data from multiple tube wells. The following procedures and materials were employed to meet the research project's objectives:

❖ Rockworks15 is used to correlate available borehole data to find the groundwater aquifer conditions of Kathmandu valley.

❖ Surfer 8 is used to plot the contours of different layers' bottom elevations (output from Rockworks15)

❖ Groundwater static water level monitoring data from Groundwater Resource Development Board (GWRDB).

Rockworks15 is a piece of software that allows to make boring logs, cross sections, fence diagrams, solid models, and stratigraphic layer models, among other things. It's a tool for managing, analysing, and visualising geological data that's very comprehensive. It has a borehole data manager for quick down hole data entering, and it can be evaluated with 2D and 3D visualisation capabilities. Its primary goal is to connect the stratigraphic levels to the other strata on the site.

Generation of a subsurface database with Rockworks15: Borehole database systems have become increasingly significant due to extensive advancement of computers and GIS technologies. Subsurface modelling, 3D-log representation, and the creation of GIS data layers, fence diagrams, and lithological cross sections are all included in the scope of borehole data management. Borehole data is collected from a variety of public and private sources.

The primary goal of the Rockworks layer modelling is to

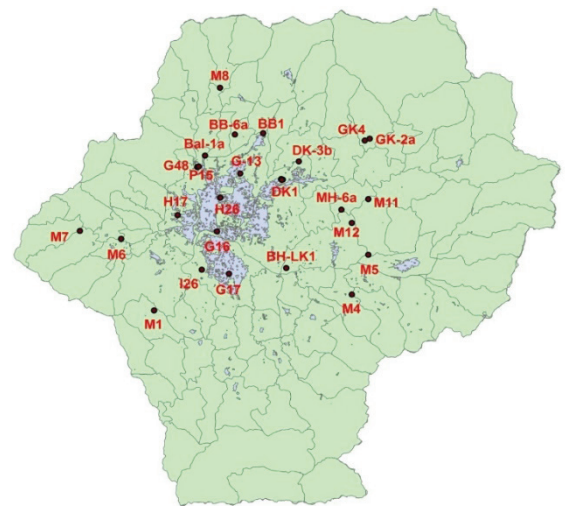*Figure 4.1 Location of 32 groundwater monitoring tube wells of Kathmandu valley*

Monitoring water level data from these 32 monitoring wells is collected and compiled for the current changing situation of groundwater depletion in the Kathmandu valley from 2003 to 2020. To determine the depletion in groundwater levels in the Kathmandu valley, separate analyses were conducted for each groundwater district.

3.0 CONCLUSIONS

All of the online literatures, journal articles, research papers, and conference papers cited in the reference section have been properly evaluated. The research is divided into two parts: interpretation and analysis of hydro geological conditions in the Kathmandu valley based on borehole log data to establish the number of aquifer layers, thickness, and stored groundwater volume. All relevant data on the system's physiographic, geology, and hydrogeology will have been collected, assessed, and used to create a conceptual groundwater aquifer model of the Kathmandu valley using Rockworks15. The second goal of the research is to calculate the reduction in groundwater level based on data from 32 monitoring tube wells given by the Groundwater Resources Development Board (GWRDB) from 2003 to 2020.

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How organizations legitimize AI led organizational change?

Gyeung-min Kim

College of Business, Ewha Womans University

gkim@ewha.ac.kr

Heesun Kim

Hyundai Autoever IT Service Innovation Team, Khs4060@gmail.com

Abstract

As the quantum leaping of processing power enables complex calculations, analytics has evolved from legacy analytics centered on structured data to learning based AI using data ranged from structured to unstructured data. The discourse that artificial intelligence (AI) is a key technology for digital transformation, is spreading regardless of industry sectors. Achieving digital transformation by investing in AI means that the results learned from the data and the model are applied to improve customer experiences, achieve process improvement, and create new business [2].

While the discourse that AI is the core technology for digital transformation is spreading, there is management misperception that introducing AI can lead to digital transformation. Contrary to the management's expectations, investments made for AI in short-term often results in the proof of concept stage and fails to advance to digital transformation [1]. Leading to digital transformation requires more efforts such as collaboration with business process owners; investing in digital infrastructure; integrating with existing systems and process; and/or reorganizing business processes.

As there are limited studies on the relationship between AI and digital transformation, this study aims to examine how organizations legitimize AI led innovation by allocating sufficient resources and transforming organizational processes. Specifically, by adopting legitimacy lenses of institutional theory [3], this study examines how 1) AI is adopted in organization; and 2) how existing practices, processes and infrastructure of an organization where considerable resources used to be committed, become delegitimized to adopt new practices, processes and systems during the journey of digital transformation. In this paper four types of legitimacy- regulatory, pragmatic, normative, and cultural-cognitive are examined during the introduction of AI and delegitimizing/legitimizing new structures (practices, processes, systems) in the organization.

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Gig work and humor in South Korean context

HeeSun Kim[a]

[a] *Department of Business Administration, Yonsei University Mirae Campus*
Wonju, Republic of Korea
Tel: +82-33-760-2315, E-mail: hs-kim@yonsei.ac.kr

Abstract

Gig work has become an important part of the business environment, with an increasing number of individuals joining the gig workforce. However, the temporal nature of gig work means that individual workers may be difficult to manage, and communication may be limited and misleading at times, to create conflicts between the parties involved in gig work. This study investigates the relationship between humor and gig work within South Korean context, and adopts a qualitative approach to explore the role of humor in gig work. Findings from this study suggests that the unique nature of gig work limits the use of humor, yet it may be used to retain workers by relieving stress and helping to endure challenges involved in gig work. However, this may be restricted to an individual basis, rather than in interactions, to imply that humor may help to resolve isolation problems in gig work.

Keywords

Communication, Humor, Gig work, Platform work, Qualitative research, South Korea

Introduction

The purpose of this research is to investigate the relationship between humor and gig work within South Korean (hereinafter Korean) work contexts, and how this relationship may influence different dimensions (work, relational, and emotional) of operation for gig workers. The outbreak of the COVID 19 pandemic has accelerated a shift in organizational practices and the business environment. Many businesses attempt to find ways to adjust to the rapid changes trigger by the pandemic, along with searching for modes to minimize expenses, especially in human resources. Development of technology and utilization of online platforms have provided organizations an efficient method to access talent, at their convenience [1]. Such movement away from traditional forms of work is also becoming more common across the globe, and growing the size of the gig economy [2]. McKinsey's survey of 800 executives across diverse industries predict that digitization of the work, such as utilization of gig workers, have increase significantly during the Covid-19 pandemic, and are expected to influence the workforce structure even post-pandemic [3]. Lee (2020) [4] suggests that many full-time workers are forced to find a second job due to the financial difficulties created by the Covid-19 pandemic.

In an environment where companies are unable to run business as usual, and unemployment rate is heightening, entering into the gig economy may be the only option for redundant workers, in order to survive. Therefore, gig economy may no longer signal freedom and ease.

Development of the gig economy may be a solution to resolve the economic issues faced by many countries. However, there is limited understanding as to the environment experienced by gig workers. In comparison to traditional full-time work, individuals contracted for gig work tend to have short and restricted interactions with the employer and other workers. This may lead to negative work-related outcomes such poor performance outcomes [5]. Organizational humor may help workers to manage stress and help to quickly establish relationships with their work counterparts. This may be an important part of adjusting to the changing workplace environment, yet is unclear how the unique contextual conditions of gig workers may affect humor interactions within Korean workplaces. Thus, this exploratory study examines how the unique status and connectivity experienced by gig workers may influence the use of humor in Korean workplaces, and vice versa. In particular, the subsequent impact of humor on emotional and relational outcomes (between contracted individuals and their counterparts) will be investigated in detail. Therefore, this working

paper aims to provide an original perspective towards workplace humor and gig work, and its implication for individuals and organizations associated with the gig workforce.

Literature

Work and humor

Humor is often portrayed as a positive phenomenon that creates happiness to people [6], and thus organizations often encourage the use of humor between workers. Humor may include intentions to provoke laughter [7], or a cognitive recognition of incongruity between communicated contents that potentially leads to an enjoyable experience [8]. From a psychological perspective, humor may serve as a descriptor towards individual's character, ability, and personality [9]. From an organizational perspective, humor is frequently portrayed to facilitate diverse communicative intents between workers [10]. Humor may help to identify power relations between individuals [11], reinforce social norms [12], and establish familiarity between group members [13]. Furthermore, psychological distance between individuals may be blurred by establishing such familiarity [14]. Therefore, exchanging humor may ease communication process [13] especially between unfamiliar individuals or those separated by social constructs, such as organizational or other hierarchical roles. Therefore, humor is complex and difficult to define [8]. However, to offer an organizational view, this study adopts Plester's (2016) [15] multidimensional definition of humor, where humor is described as a complex multi-faceted phenomenon that incorporates evocation of laughter, feeling of amusement, motivation to engage in these processes, and thus is a form of social interaction between individuals with (or without) some intention to amuse self or another party.

The positive effect of humor is widely discussed amongst the literature, where organizational humor may be used to enhance worker creativity [16] and disrupt unproductive thinking within the workplace [17]. Humor may also help to challenge management and expand boundaries for employees. This is because the casual or light nature of humor can act as a safety mechanism [10][18] for the joker, and workers may express opinions that may usually be unacceptable within the formal work context. The informal characteristics of humor creates a world outside of the organizational boundaries [19], and thus provides more freedom in workplace communication. In this process, stress and tension may be released, by using laughter as a medium to relieve any socially unacceptable desires or emotions [20][21] and help employees to cope with stressful organizational situations. Laughter created through humor may also help to cultivate a positive workplace atmosphere. The wheel model of humor suggest that humor events can be an important driver by influencing employee well-being and happiness, where the positive emotions created through humor can craft a climate that supports humor use, and thus cumulating positive work relationships and emotions [22]. Thus, initiating humor may lead to a circular process of humor engagement, creation of positive emotions, culture that supports humor use, development of organizational relationships, and back to using more humor between workers, which may enhance employee well-being. This suggests that humor interactions may be an important part of developing worker relationships, which also associates with positive emotions and experiences within workplaces.

Cooper's relational process model (2008) [14] suggest that humor may help to develop the quality of interpersonal relationships through four interrelated social processes. These are affect-reinforcement, similarity-attraction, self-disclosure, and hierarchical salience. Cooper (2008) [14] explains that individual's enjoyable experience of humor can lead to a feeling of attraction between the communicators (affect-reinforcement). Laughing together at the same subject can arouse a perception of similarity with the joker (similarity-attraction) as it can signal similar beliefs and values [23]. Furthermore, sharing humor is considered as a display of the joker's personal information (humor preferences) (self-disclosure), and these positive relational effects may help to diminish the psychological gap between individuals in different hierarchical levels (hierarchical salience).

Although humor may help both management and employees to deliver constructive outcomes, humor may also result in unpleasant of unexpected consequences [15]. Dark and aggressive humor [24] may damage workplace relationships by violating the cultural values of interacting parties [25]. Furthermore, humor may create misunderstandings between individuals due to its ambiguous nature [26], especially in situations where communicators are unable to fully capture the intent of the joker, and when contextual factors affect interacting individuals in different ways. For example, Plester (2007)

[27] suggests that organizational culture may influence how humor is exchanged within the workplace. Yue et al (2016) [28] also argue that humor preferences between Western and Eastern contexts differ significantly, where humor may not be a preferred characteristic for the general public, but something performed by only special individuals. Similarly, Kim and Plester (2019) [29] suggest that within their studied Korean workplaces, the use and effect of humor differed according to the hierarchical position of the communicators, to reflect both Confucian and organizational-based hierarchical differences. Therefore, this suggests that while humor may help to provide diverse relational and professional benefits to individuals and organizations, the impact of humor may differ according to specific context. In particular, the use and interpretation of humor may be limited for those with relationally lower hierarchical status (thus less power) [29]. Such limitations may also relate to workers with lower job security and stability, such as those in the gig economy.

Gig workers and context

Globalization have created the need for organizations to adapt quickly to the changing business environment, and the development of technology have accelerated this process. Organizations seeking temporal talent to complete short term tasks or projects without increasing the size of their employee pool have led to the emergence of gig workers. Gig workers can help organizations to respond to the rapid change experienced by firms, without creating long term responsibilities (employment). Therefore, emergence of the gig economy seemingly satisfies both the organization, and individuals that desire flexible working lifestyle that Is not bound to specific roles and jobs.

The term 'gig worker' reflect freelancers that are intermediated by online platforms [30]. Work tasks tends to be finite and temporal, and individuals are not guaranteed with work for an extended period of time (i.e. full-time job). Gig workers include part-time, fixed-term, and occasional contractors that hold non-traditional agreements with the hiring firm, but may also be described through four dimensions of place of intermediation, status, definition of paid work, and source of labor [31]. Gig workers are able to utilize their time efficiently by seeking short term jobs at their convenience, using online platforms via smartphones and other Information and Communication Technology (ICTs) mediums. This allows individuals to look for opportunities for extra income [32], but also attract individuals who desire to enjoy the flexibility offered by the gig economy.

However, gig workers may be subject to various psychological and relational disadvantages. Although gig workers may enjoy flexible working hours, it also means work is not periodical. In Lee and Kawachi's (2021)[33] study of Korean workers, unpredictable work schedules are suggested to be associated with depression and other symptoms that may lead to mental health issues. Furthermore, communication with the employer and other organizational workers tends to be infrequent and lower in quality. Such lack of information and interactions may create unfulfillment of psychological contract between the individual and organization, and even lead to low organizational identification and performance [5]. Nevertheless, job satisfaction and well-being may be threatened when individuals are not covered by employment protection for job security, and lack social support by peers [34]. Such traditional organizational perspectives that value strong work culture and stable workforce as a source a competitive advantage is incongruent with gig workers and their working environment [34]. Therefore, although employment of gig workers may seem efficient and cost effective for the organization, the relational and performance outcomes may not be sufficient.

Another complexity to understanding gig workers is contextual differences. While the gig economy in the U.S. is widely accepted by the society [35], gig workers in Korea are tends to be less recognized or appreciated. From a technical perspective, work offered by many gig workers often conflicts with existing (full time) services, and becoming an unexpected competition for companies [36]. Social and legal standards need to be established in order to minimize such conflicts, and also protect gig workers, but this can be difficult [37]. Due to the diverse types of workers that comprise the gig workforce, defining 'gig work' and identifying the size of the gig workforce is complex. This can create issues for government, companies, and individuals, as such complexity can create gaps in the legal and public policies associated with the gig economy, which can also influence the cultural perceptions towards individual workers.

Despite such issues raised within the gig economy, emergence of the gig economy is perceived to relieve the unemployment problems faced in Korea [38]. Reliance

and usage of ICTs is widespread in Korea, and the recent economic difficulties experienced through the Covid-19 pandemic has driven many individuals towards seeking for second jobs or gig work [4]. Park and Lee (2018) [39] suggest that gig workers in Korea may be subject to significant techno-stress, as their work process (from seeking work to completing tasks) are highly dependent on online platforms and ICTs. Furthermore, these gig workers are suggested to value trust and reputation more strongly than full-time employees, and this issue is implied to be based on the ambiguous status held by gig workers [39]. Such relational and psychological factors experienced by gig workers may be relieved by increased communication and interactions between the contracted worker and the employing organization. However, the nature of gig work minimizes contact between the company and employed individual regardless of the type of contract or work, in comparison to full-time employees. Therefore, it is important to utilize communication medium that may enhance the quality of the interaction or relationship between the communicators, in order to use the given communication level effectively. Within such context, humor may be a useful medium to influence both relational and technical outcomes.

Humor and gig workers within Korean workplaces

Humor is a common method of communication that exists within organizations regardless of the cultural context [29]. However, humor is contextual [8], and may be used differently according to the relationship between the communicators [40]. As humor may be used to develop interpersonal relationships regardless of the hierarchical differences between individuals [14], humor may be a useful tool to quickly establish relationships for part-time or fixed-term workers, who are in need to adjust to multiple roles or jobs in a short timeframe. However, part-time or fixed-term workers in Korean workplaces is believed to hold relationally lower status than their reciprocates within the hiring company. Furthermore, as most gig workers utilize online platforms to perform jobs, and may have minimum communication with the employer, it is questionable whether use of humor may in fact serve such positive role. This unique situation of gig workers question how humor may be used between gig workers and other organizational members. Therefore, this proposed exploratory study attempts to understand organizational humor and examine the experiences of gig workers and their work environment in Korean

work contexts. This leads to the overarching research question for this study: "What is the relationship between humor and gig work in Korean workplaces, and how may this influence the way of work during the Covid-19 pandemic?"

Methods

Multi-voiced interpretivist approach

This study adopts qualitative methodology to investigate the relationship between humor and gig economy in Korean work contexts. In particular, multi-voiced interpretivist approach is used as the underlying assumption to approach the idea of humor and gig work. Multi-voiced interpretivist approach suggests that provision of diverse perspectives and interpretations to the phenomenon of interest helps to develop an in-depth illustration of the phenomenon, which encompasses realities constructed by multiple individuals [41][42]. This is suitable in studying the idea of humor, as humor is a social process which may be interpreted and experienced differently according to the situation of each individual [10]. Furthermore, gig work may be experienced differently for individuals, in terms of work itself, structures, and work relationships associated within the gig economy. Therefore, collecting experiences from diverse individuals will provide rich stories of humor phenomenon by gig workers. This will be achieved by employing specific data collection methods as below.

Data collection

Semi-structured interviews are used to capture individual perspectives towards humor and gig work. While an interview schedule is used to guide the researcher in asking the main ideas of themes during the interview, detailed interview questions are crafted in a flexible manner to accommodate individual participant's experience. Furthermore, impromptu questions are asked to gain further insights into specific ideas or topics during the interview. These will usually comprise of follow-up questions depending on the discussions shared with the participant, and their experience at work. The interview schedule includes questions on topics as below: background information about the participants; gig work, tasks, and work environment; interpersonal relationships involved in engaging gin gig work; gig work and associated communication methods and processes; Gig work related experiences and emotional reflections; Experience of using humor personally and professionally; Perceptions toward humor and influence of cultural

values; Perceptions and experiences of humor in terms of work; Comparisons between using humor in gig work environment and traditional work environment.

Participants are also asked to keep a diary record of their daily experiences with regards to humor and gig work. Diary studies are often used for common stressful events [43] and allow participants to record and reflect on daily humor instances and connections to work in a timely manner. This is because such humor interactions or instances may not be recalled clearly, especially in daily recurring events. Immediate reflection on the daily interactions and emotional experiences of each individual may be recorded, with minimum external and time-based biases. Therefore, participants used either digital (i.e. computer) or hand-written method to describe their experiences for the period between diary entries- once per day [44] for 14 days (2 weeks) in which the participant engaged in work.

Participants are provided with diverse options in research participation. Interviews may be conducted in person or online (Zoom), and diary recording may be conducted by hand (written), via computer (i.e. word document), or by voice (voice recording). This is to allow participants to select their most comfortable mode of reflecting their daily lives, and offering such options is expected to increase the chance of individuals providing more frequent and detailed recordings of their experiences. In order to accommodate these options, each participant will be provided with one set of note pad and pen, and a mini voice recorder, which will be requested to be sent back to the researcher after the data collection period. After the prescribed data collection period, member check will be conducted for validity. Participants will be provided with a summary of their collected data, and offered to provide further details or change in their perspective.

Research will be conducted primarily in Korean language (English will also be optional) to accommodate to the participant's most comfortable language of communication. Information sheet and consent form about the research will be provided to each participant. Signed consent form and data collected will be stored at a safe location for 3 years after the research period, and then disposed safely. For anonymity and confidentiality purposes, individual participants in this study will be re-named using pseudonyms.

20 participants were recruited for this study. Participants across diverse gender, age group, and industries are investigated in order to capture rich and unique stories and perspectives towards humor and gig work. A summary of research participants is presented in Table 1 below.

Table 1- Summary of participants

No. of Participants		20
Gender	M	9
	F	10
	Other	1
Age range		20s-40s
Industries		Delivery
		Translation
		Design
		Education
		Art and Craft
		Community service
		Accommodation

Individuals that are currently performing work tasks, and those actively searching for work and expected to be involved in work tasks for the duration of the research were targeted as potential research participants. This includes individuals with part-time, fixed-term, or temporal (on call) jobs, in order to capture timely and on-going experiences. Therefore, a purposeful sampling was used to target and approach individual workers that satisfy the above conditions, to collect data which may provide the most learning [45]. The recruitment process was conducted under the guidance of the associated research ethics body (IRB).

Collected data are consolidated and analyzed using thematic analysis [46]. Data (interview excerpts and diary notes) are examined carefully, by investigating ideas that reinforce or provide differentiating interpretations to a specific concept. These similar or different descriptions or key words are grouped together to form codes, and codes will be grouped to larger categories. Coding technique is important in thematic analysis, as participants may use different words or descriptors to explain the same idea. Therefore, specific words and words embedded amongst sentences must be analyzed both independently and as a whole. This process is repeated in multiple stages to form final overarching themes. Analysis will be conducted sequentially, initially during the data collection period, then after the data collection period, and finally combined and rearranged after data collection. NVivo program is used to assist this arrangement and analysis process.

Findings

Findings suggest that participants perceive humor to have the potential to influence gig work and workers, but is limited by the contextual nature of gig work. Three themes emerged from the collected data. First, *nature of gig work* discusses that gig work platform and online based work limits the use of humor. Second, *hierarchy and relationships* discuss how humor may be used differently based on the different perception towards hierarchy between work parties. Last, *retention* discusses how humor may be an important factor to help gig workers engagement.

Nature of gig work

Most participants suggested that the nature of gig work creates difficulties to engage in humor. This includes limited time, space, and contextual factors for individual gig workers. Participants below explains the unique environment of gig work:

"I have my main job, and delivery is my sub-job. So, I can't invest too much time and effort in the delivery work. I used to contact and communicate with other riders (delivery workers) but not anymore. I don't have time for it and they don't have time to mingle with people who doesn't do as much deliveries as they do" (P3, male, Delivery)

"It might be because I'm a newcomer, or it might be my personality. But as an artisan selling my work online, its difficult to engage with other artisans working on the same platform. All I can do is use the platform to write funny comments, and catch the customer's eyes. But it's really limited and one-directional, so I don't know how others are viewing my 'humor'." (P23, female, Art and Craft)

P3 suggests that as his delivery gig work is a sub job, it limits the time he can communicate with other delivery workers. He also implies that the temporal nature of the work decreases workers' effort to communicate with each other ("I don't have time for it and they don't have time to mingle with people who doesn't do as much deliveries"). Similarly, P23 explains that as gig worker relies on digital platforms to engage in their work tasks, this limits how individuals can interact and react to others. Although individuals may attempt to use humor ("All I can do is use the platform to write funny comments") this is described as "one-directional" and thus the interaction is difficult to flow like face-to-face communication.

Another participant explains how the objective of engaging in gig work (for the extra income) means that individuals perceive interpersonal interactions as an inefficient behavior:

"Everyone is working really hard, trying to make the most of their time. Time is money to deliverers, literally. So even if I want to talk to others, it seems wrong to distract them, in order to fulfil my communicative desires […] so humor in that kind of a situation doesn't really work." (P11, male, Delivery)

In this example, interpersonal communication between gig workers is described as "wrong" and a "distract" to others. As most participants emphasized that the reason for starting and continuing their gig work is provision of extra income, stopping another gig worker to share a joke may seem unnecessary, and disrupting their effort to earn extra income, which may be crucial to individual's survival.

Hierarchy and relationships

Although most participants discussed that humor is difficult to be used due to the unique gig work context, participants also recognized how humor usage may depend upon the different perception towards hierarchy between about gig workers, end customers, and platform company). Examples below show how some participants perceive hierarchical relationships in gig work:

"Although there isn't much interaction with the (platform) company, shop owners, and the end customers, I do feel that there is a hierarchy. And that I'm at the end of the hierarchy. Nobody has said anything directly to me about this, but you know, the feeling you get from people, from the atmosphere." (P1, male, Delivery)

"I'm the one getting paid, so of course there is some hierarchy. But it's different to normal organizational situation, in a full-time job. It might be because the platform allows me to reject jobs that may seem 'unfit', like people who just wants a cheap deal, or those who has the potential to be rude" (P12, male, Translation)

P12 explains that while it is different to "normal organizational situation" there is "some hierarchy" between gig worker and end customer, and thus influencing how individuals communicate and interact. Other participants also implied that humor may be used or not used to accommodate such relationships:

"I don't normally use humor, but only when my students are losing their focus. I try anyway. I want my students to feel that my lessons are fun, and I'm a fun person to

interact with, in order to focus on their studies. But I don't think its that effective, it doesn't seem to work that well. It might be because we only interact online through ZOOM, or it might be them (student) or just that my jokes are not so funny" (P4, female, Education)

"My customers and I usually chat on the platform, before they arrive and my place. I think it might be the nature of this accommodation-based work, but usually people are quite feisty. I sometimes try to use humor to break that down, and show that I am trying my best to accommodate them, but usually it doesn't work." (P7, male, Accommodation)

Both P4 and P7 suggest that they attempt to use humor in order to improve their work process. However, this seems to be difficult to achieve. P4 suggests that it is not "that effective" due to the online work environment (online, ZOOM program), and similarly P7 implies that his attempt to "break down" the avoid potential conflict with his customers ("usually people are quite feisty") usually "doesn't work". This suggests that the unique environment (online, temporal) of gig work creates some hierarchy or role-based expectations between parties, which focuses on the work task and outcome, rather than the quality of communication and interaction between individuals. This also implies that the parties involved are not very interested in establishing some form of relationship with others.

Retention

Participants also suggested that creating a humorous or fun element to their gig work may be a solution to increase retention of gig workers. In this study, all 20 participants perceived their gig work to be a sub-job, rather than (potentially) their main source of income. This means the gig work currently engaged by the participants is not a priority in term of their professional career, and may be replaced by other work or activity:

"My main job pays me quite well, so although delivery work can provide some extra income, I don't have to do it. I'm not going to feel sorry for quitting delivery work at any time" (P3, male, Delivery)

"Most work that I get is short-term. Yes, it provides some extra money, but if it starts to create too much stress like requesting excessive editing like a 'normal' design work, it is not going to be worth it" (P2, Female, Design)

"Delivery work can be dangerous. But there are benefits, like, it pays quite well and that I can exercise while doing the deliveries. But the work itself is repetitive and there is no fun element to it. It might help delivery workers to engage more and stay within the industry if there are more fun elements to delivery work" (P22, male, Delivery)

The above participants imply that when their gig work becomes too tedious or difficult (in relation to the money earned) they are likely to exit the job, as it is not "worth it". P22 suggests that although there are dangerous elements to his gig work, having a "fun element" may help to retain gig workers.

Discussion and Conclusion

This study explores the relationship between humor and gig work within South Korean work contexts. Humor is often perceived as an effective tool to manage organizational members in terms of their work process, performance, and relationships [15]. However, it is questionable whether humor may play a similar role within the gig economy.

Participants from this study suggested that the unique work context of gig work means that there is limited communication and interaction between individuals. In particular, the physical separation between individual worker and end customer serves as a barrier, as gig work is usually requested and performed online (via online platform). As most gig workers within this study engaged in work due to the need to earn extra income, participants suggested that it seems inappropriate to "waste" other worker's time by communicating (humor) unnecessarily. This means that the objective of engaging in gig work tends to focus on earning income than any other factors (such as advancing career), and that this is a shared perception between gig workers within a particular industry.

This suggests that gig work involves more isolation in comparison to other work contexts, limiting the chance or need to interact with others. This finding is similar to Glavin, Bierman, and Schieman's (2021) [47] study, where they suggest that gig workers experience powerlessness and isolation. Glavin et al. (2021) [47] suggest that gig work tends to accommodate the needs of a dispersed workforce and respect workers' individualism, but this leads to restricting collective movement by the workforce (for the benefit of the company), and isolating individual workers, which may have a negative health outcome.

Furthermore, humor may also be ineffective in influencing work relationships in such isolated situations. Based on the differing perceptions towards hierarchy, some participants suggested that humor may be used in attempt

to break down the hierarchical difference between the end customer and individual worker. Although the hierarchical relationships within gig work context is different to a full-time worker (less hierarchy), participants suggested that humor may be an ineffective method to influence the quality of interpersonal relationships in gig work. This contrasts with Cooper's (2008) [14] study, where humor is suggested to develop interpersonal relationships within organizations. Therefore, humor may only influence the quality of interpersonal relationships in a full-time work context, rather than those in gig work situations.

However, humor may be a constructive method in retaining workers. While one of the advantages of gig work is the low entry barrier (and that it is easy for individuals to start and maintain work), it is also easy for individuals to exit- especially when the work environment and tasks become more difficult than expected. For example, participant P2 compared the difficulties of tasks in a full-time job and gig work, where the threshold of exiting a particular job task is much lower in gig work than in full-time job context. This may seem obvious as based on our previous findings, gig workers' objective is to earn extra income rather than gaining experience or advancing their career. Thus, organizations may find it difficult to retain experienced individuals in gig work. Since there is limited methods as to retaining gig workers (other than increase in their pay), humor may help to assist workers to endure problems experienced during their gig work, by relieving stress and helping individuals to perceive stressful and repetitive tasks more bearable. This supports previous humor research, where humor is perceived to help release stress and manage stressful situations [20][21], but provides insights as to how humor may play a similar stress relieving role even in isolated work situations.

Potential implications

This working paper provides some theoretical and empirical implications. First, this study is one of the first research to investigate humor in gig work. Findings are expected to contribute significantly to the existing organizational humor literature by analyzing the different role humor may play in an unstable employment situation. In particular, theoretical development on the role of humor in relational and psychological management of gig workers may be expected as a significant contribution. Furthermore, gig workers are exposed to an environment where communication and interactions with the employer is limited (via technological devices and online

platforms). This is an under-investigated area in humor and organizational studies, and thus is expected to offer significant academic value and theoretical implications.

From a practical perspective, findings from this study is expected to help organizations to prepare themselves in managing larger sized online-based workforce, predominantly gig workers. Organizational practices may be constructed through the findings, and establish efficient ways to communicate and guide gig workers- and help to produce high quality output. Another contribution involves providing knowledge about the gig economy to the wider society. As it is likely that Korean organizations will continue to increase the amount of short-term work and rely on gig workforce rather than traditional full-time workers ('employees'), it is important for the younger population (new graduates) that are preparing to enter the job market to fully understand the nature of the gig economy. This may assist young workers to plan their career and job alignment more strategically.

Future research could further investigate the role of humor from the organization's perspective, as the current proposed study focus on the viewpoints of the individual worker. Nevertheless, other communicative mediums used by gig workers could be investigated further in relation to the current research. Exploring gig workers in other countries or regions could also help to provide an understanding of the cultural implications of humor and gig work, by conducting a comparative study of gig workers.

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The effects of job-related social media usage on employment information quality and information acquisition

Jing Zhang[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: zj2020178196@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

Nowadays, Social media recruitment become a new trend. The purpose of this paper is to explore the influence of social media usage on information quality and information acquisition from the perspective of job seekers. This paper adopts a questionnaire survey for empirical research and sets up 3 patterns of SNS usage behaviors as independent variables, information quality and information acquisition as dependent variables, and the amount of SNS use as moderator variable. Results show that, first, community-based sharing activity and information searching activity have positive on employment information quality and information acquisition. Second, social networking activity only has a positive effect on employment information acquisition. Third, the amount of SNS use has moderator effects between social networking activity and employment information acquisition, and between information searching activity and employment information acquisition.

Key words

Social media recruitment, Social media usage, Information quality, Information acquisition

Introduction

With the development of the Internet, online recruitment is becoming the main approach for job seekers and recruiters. E-recruitment is known as online recruiting, social recruiting, or Internet recruiting (Sills,2014). Compared with traditional recruitment, online recruitment can breakthrough time and geographical constraints and save lots of time and personal costs, and have greatly improved the efficiency of job hunting and the recruitment process.

As Hada and Gairola (2015) proposed that E-Recruitment since its inception has to turn out to be successful but it has faced quite challenges and hurdles in the path of success. Okolie and Irabor (2017) said that the challenges to employers are fake profiles, lack of personal touch, and so on. Robertson and Smith (2001) also noted that the lack of personal interactions limits the flow of communication between potential employees and the employer. In addition, the job market is also an information asymmetric market. Wang (2019) took the college students' job-hunting process as an example found that the information

between the different subjects is asymmetrical. Graduates make themselves look good by packaging themselves to get a good job and recruiters over-exaggerate the positions and quotas of recruitment to promote corporate image. Hence, due to the weakness of online recruitment and the information asymmetry in the job market, social media recruitment has emerged.

Social media is one of the main products of Web 2.0. He (2015) stated social media is a tool and platform for people to share ideas, ideas, experiences, and opinions with each other. It's worth noting that the growth of social media has also changed the job-hunting way today. Chen (2016) noted social workplace software is enjoyed by a large number of professionals, forming a huge ecosystem based on mobile Internet social media. Mobile workplace social software characterized by a new business model of "recruitment + social" is in full swing. Spellmann (2018) highlighted that social media serve as a lead to forwarding followers (job seekers) to organizations" personal websites where they can learn about job vacancies. Job seekers may obtain useful information about targeted

companies through social media. As the the appearance of SNSs like Facebook, Twitter, and LinkedIn, a growing number of recruiters are being attracted to the social media information (SMI) obtainable from such sources (Brown and Vaughn, 2011).

Many researchers' studies conflicting views on social media. Some researchers thought social media plays an important role in the employment process. Martensen et al. (2011) proposed that employees who use social networking sites as self-marketing tools aim to build a positive reputation and thus redress the asymmetrical information relationship with employers. Social media provides a platform for companies to show themselves and promote their images, meanwhile, job seekers can manage their personal brand to attract targeted companies. Nikolaou (2014) also investigated that job seeker still seem to use job boards more extensively than SNW (social network website) s. The usage of social media broke down the boundary between employees and employers and created two-way communication, making them closer than before.

While other researchers hold the opposite opinion on the role of social media in the job search process. Suki et al. (2011) examined that perceived usefulness and perceived ease of use is not positively and significantly related when use social networking sites as a job search tool. Subhani et al. (2012) investigated the utility of LinkedIn on selection and recruitment and found that LinkedIn is currently being used by some giant multinational companies and still not adopted in businesses for in the recruitment purposes. Social media recruitment is still in its infancy, so it is not yet well known by many companies.

Based on the above research. the research on social media to obtain job employment information is inadequate. And there is less quantitative research on the use of social media by job seekers to find jobs and obtain employment information.

Thus, the researcher proposes two questions about social media job-hunting from job seekers' perspectives.

1. How to use SNS to obtain high-quality employment information in the job-hunting process?

2. Can the use of SNS improve the convenience of obtaining employment information?

1. **Literature Review**

   2.1 Independent Variable

   2.1.1 Information Searching Activity

The first function of social media is information searching. Cho et al. (2013) proposed that information search is a function that someone needs to acquire information and solve problems by using it. social media is regarded as an information searching tool to help users find desired information and solve the problem. Voramontri and Klieb (2019) also put forward that the consumer undertakes a 'search' into memory to determine if enough is known about the available options to make a choice. By using the information searching function, consumers may find plenty of information to help them make decisions. Other scholars suggested that by using social media consumers can not only search for basic information but also find others shared experiences.

In this paper, the researcher named the function of social media information searching as for information searching activity (IS), which means job seekers use social media as an information search tool to find objective information such as company background information, new job opportunities, personal work experience, job hunting strategies, etc. series activities in the process of job-hunting.

2.1.2 Social Networking Activity

Social relationships are also a kind of social capital. Kim and Kim (2012) indicated that social capital refers to a strong bond or network that can secure a competitive advantage in achieving one's purpose with resources formed by trust and cooperation between people, and proposed 4 types of social support: material support, informational support, emotional support and self-esteem support. Online social relationship contacting or maintaining is also one of the important functions of social media usage. The purpose of users is to use SNS as a tool to develop and maintain social relationships (Cho et al., 2013).

In this paper, the researcher named the function of building and maintaining social media relationship as social networking activity (SN), which means job seekers establish social relationships or receive informational support such as employment information, job promotion, and advice through SNS in the job-hunting process.

2.1.3 Community-based Sharing Activity

On the social media, users often share their life, share useful information, express opinions on SNS. And social media community make similar people get together and share information with each other to develop new social relationships. Oh and Syn (2015) studied the relationship between 5 social media and 10 motivate to investigate why social media users share their personal experiences, information, and social support with anonymous others. Results show all of the ten motivations are influential in encouraging users' information sharing. Social media community-based information sharing is also a way to express themselves. Kim and Kim (2012) also emphasized

that the enhanced relationship and information sharing behavior that individuals continue to use SNS have a positive impact on their intention to share personal information.

In this paper, the researcher named the behavior of joining in job-related communities and sharing information or experience with community members, etc. behaviors as community-based sharing activity (CS), which means joining job-related communities to share personal experience and exchange employment information with group members.

2.2 Dependent Variable

2.2.1 Information Quality

Today is the age of information explosion, so it's particularly important to obtain high-quality and useful information. Arazy and Kopak (2011) explained that information quality (IQ) has been investigated extensively in prior information science research, where much of the discussion has been devoted to the underlying dimensions (or attributes) of IQ, such as accuracy, completeness, presentation, and objectivity. The objective of this study is to investigate employment information quality acquired from social media. So, under the context of employment information, information quality can be defined as accurate and timely information on recruitment.

Accuracy describe information in the article is accurate and correct. Arazy and Kopak (2011) noted that the assessment of accuracy requires knowledge of relevant facts. The more information fits the facts, the more accurate information is. In this paper, information accuracy means job seekers may get real company background, job vacancy information and relevant practical experience or skills through social media.

Timeliness is also an important property of information quality. Agarwal and Yiliyasi (2010) indicated that the communication on social media sites can be instantaneous and the time lag of information from being published to received can be almost zero. In this paper, information timely means employees may get recruitment information on social media as quickly as possible.

2.2.2 Information Acquisition

Information acquisition means information that is able to be read or received and understood by the individual or group for which it is intended. Agarwal and Yiliyasi (2010) proposed that social media sites are publicly available for almost free or at no cost. It shows that cost is an important index to evaluate information acquisition.

Teo et al. (2003) defined information accessibility as the type and amount of information, and the cohesiveness of information organization assigned to the participants. Tajudeen, Jaafar & Sulaiman (2016) also emphasized that one of the most important impacts of social media usage is the improvement in information accessibility; the organizations can get information about their potential customers and competitors from the conversations on social media. Employment information accessibility stands for searching job information on social media that is free and easy to use.

Thus, the definition of information acquisition (IA) in this paper means the employment information is easy to use and acquire through SNS in the job-hunting process.

2.3 Moderator Variable: Amount of SNS Use

2.3.1 Usage Frequency

The frequency of usage means how many times users use applications. In this paper, the author purposed 5 scales: less than 1 times, 1 to 3 times, 5 to 10 times, 10 to 20 times, more than 20 times

2.3.1 Usage Duration

The usage amount of SNS means how much time spend on SNS. In this paper, the author purposed 5 scales: less than 30 minutes, 30 minutes to 1 hour, 1 to 3 hours, 3 to 5 hours, more than 5 hours to measure usage duration per day.

Based above discussion, the researcher proposed the variables operational definition as Table 1.

Table 1 - Variables Operational Definition

Variables		Operational Definition	References
Independent Variables	Information Searching Activity	Using social media as an information search tool to find objective information such as company information, job postings, personal work experience, job hunting strategies, etc.	Cho et al. (2013) Voramontri and Klieb (2019) Cahyanto et al. (2016)
	Social Networking Activity	Establishing social relationships or receiving informational support such as employment information, job promotion, and advice through SNS.	Cho et al. (2013) Tomlinson (2017) Kim and Kim (2012)
	Community-ty-based Sharing Activity	Joining job-related communities to share personal experience and exchange employment information with group members.	Shin and Yim (2019) Kim et al. (2013)
Dependent Variables	Information Quality	Job seekers can obtain accurate and immediate employment information through SNS.	Arazy and Kopak (2011) Wang (1998)
	Information Acquisition	The employment information is easy to use and acquire through SNS.	Tajudeen et al. (2016) Teo et al. (2003)

2.4 Research Theory

Source credibility theory is an established theory that explains how communication's persuasiveness is affected by the perceived credibility of the source of the communication. The credibility of all communication, regardless of format, has been found to be heavily influenced by the perceived credibility of the source of that communication. Before social media emerged, the concept of media credibility was analyzed taking into consideration its three levels: the credibility of the source, of the message and of the channel that carries it (Balaban and Mustățea, 2019) Media

credibility is a concept in the communication sciences that has not lost relevance for the communication research over the last decades because of constant changes in the media environment (Metzger et al., 2003). Source credibility refers to the consumers' perception of the source of information. This is an age of information explosion, and as the amount of information increases, the reliability of information decreases. This article explores social media as a source of employment information to explore its credibility.

2. Research Method

3.1 Research Model & Hypothesis

Based on the above discussion and combined with source credibility theory, I proposed 2 theoretical models in figure 1 and figure 2. The measurement catalogs of variables were designed as Table 2.
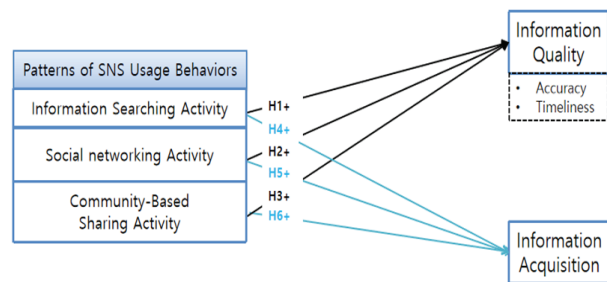
Figure 1. Research Model 1
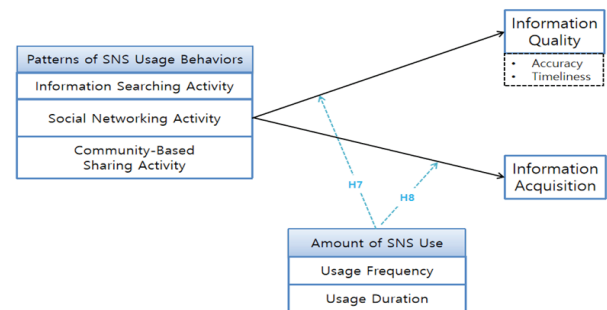
Figure 2. Research Model 2

The research hypotheses established based on research model are as follows:

- H1: Information searching activity on SNS has a positive (+) effect on the employment information quality.

- H2: Social networking activity on SNS has a positive (+) effect on the employment information quality.

- H3: Community-based sharing activity on SNS has a positive (+) effect on the employment information quality.

- H4: Information searching activity on SNS has a positive (+) effect on the employment information acquisition.

- H5: Social networking activity on SNS has a positive (+) effect on the employment information acquisition.

- H6: Community-based sharing activity on SNS has a positive (+) effect on the employment information acquisition.

- H7: The amount of SNS usage has a moderate effect on the patterns of SNS usage behaviors and employment information quality.

- H7-1: The amount of SNS usage has a moderate effect on information searching activity and employment information quality.

- H7-2: The amount of SNS usage has a moderate effect on social networking activity and employment information quality.

- H7-3: The amount of SNS usage has a moderate effect on community-based sharing activity and employment information quality.

- H8: The amount of SNS usage has a moderate effect on the patterns of SNS usage behaviors and employment information acquisition.

- H8-1: The amount of SNS usage has a moderate effect on information searching activity and employment information acquisition.

- H8-2: The amount of SNS usage has a moderate effect on social networking activity and employment information acquisition.

- H8-3: The amount of SNS usage has a moderate effect on community-based sharing activity and employment information acquisition.

Table 2 - Variables Measurement

Variables	Questions Catalogs	References
Information Searching Activity	Search for diverse employment information	Han Ji Hyun and Jang Jae Yoon (2005) Mowbray et al. (2018)
	Search for company-related information	
	Search for personal employment experiences	
	Search for recruitment information.	
	Search for job-related person	
Social Networking Activity	Friends' diverse demographic characteristics (education, age, region, etc.)	Malecki and Demaray (2003) Cho et al. (2013) Zhang (2016) Mowbray et al. (2018)
	Friends' diverse job and work experience	
	Getting job information or job opportunities from friends	
	Building a new relationship	
	Maintaining relationships	
Community-based Sharing Activity	Share the latest job-related information with group members	Kim and Kim (2013) Cahyanto et al. (2016)
	Share lots of job-related information with group members	
	Share personal employment experiences with group members.	
	Share your career advice with group members	
	Share concerns about job preparation with group members	
Usage Frequency	How many times do you use SNS per day on average?	
Usage Duration	How much time do you spend using SNS per day on average?	

Information Quality (Accuracy)	The degree to the information and facts match	Arazy and Kopak (2011)
	No information error	Hosain and Liu (2020)
Information Quality (Timeliness)	Time Lag	Agarwal and Yiliyasi (2010)
	Latest information	
Information Acquisition	The easy degree of getting the job information you want	Tajudeen et al. (2016)
	The degree of getting lots of job-related information	Borrino et al. (2009)
	The cost of getting information	
	The degree of lots of people use social media easily	Agarwal and Yiliyasi (2010)

3. Analysis Result

In order to explore the impact of job-related social media usage on job information, the researcher studied social media users by using a questionnaire. All variables use the Likert 5-point scale. 579 questionnaires were collected. In total respondents, when it comes to working status, there are 72 (12.4%) respondents who have no job-hunting plan at present, 121 (20.9%) respondents get to know the job market, 143 (24.7%) respondents are getting ready to go for a job, 125 (21.6%) respondents are looking for a job at present, and 118 (20.4%) respondents have found jobs. Respondents who don't have job-hunting plans at present are considered irrelevant. Thus, the final available questionnaire number is 507.

4.1 Characteristics of Samples

The demographic characteristics of samples are shown in Table 3, the major group of respondents is female. About 70% are under 35 and about 60% are undergraduate students. And, there are 313 domestic students and 194 international students. In the case of domestic students, there are 128 respondents who are male (40.9%) and 185 female (60.4%). The majority of the respondents were female. About 50% of the female respondents were under 30. In the meantime, undergraduate students make up the majority. As for international students, there are 73 (37.6%) male respondents and 121 (62.4%) female respondents. The majority of the respondents were male. About 70% of respondents are under 30 and half of them are undergraduate students.

Table 3 - Demographic Characteristics of Samples (n=507)

Classification		Total	Rate (%) Frequency	Domestic students (n=313)		International students （n=194）	
				Rate (%)	Frequency	Rate (%)	
Gender	Male	201	39.6	128	40.9	73	37.6
	Female	306	60.4	185	60.4	121	62.4
Age	20-25	142	28.0	62	19.8	80	41.2
	26-30	149	29.4	94	30.0	55	28.4
	31-35	112	22.1	74	23.6	38	19.6
	36-40	43	8.5	31	9.9	12	6.2
	40+	61	12.0	52	16.6	9	4.0
Degree	High School	58	11.4	45	14.4	13	6.7
	Bachelor	305	60.2	210	67.1	95	49.0
	Graduate	122	24.1	46	14.7	76	39.2
	Post-graduate	22	4.3	12	3.8	10	5.2

Table 4 shows the job-related social media usage situation of users. For domestic students, the top 3 apps they usually use is WeChat (42.5%), Twitter (33.9%), and LinkedIn (26.8%). And they mainly use them to search job-related practical skills (65.5%), personal development information (53.7%), and job-related contacts (40.3%). For international students, the top 3 apps they usually use is WeChat (51.5%), LinkedIn (35.6%), and Twitter (32.0%). They use these apps to search personal development information (55.7%), job-related practical skills (54.6%), and company background information (47.9%). Therefore, it seems that WeChat, Twitter and LinkedIn are all useful job search tools for users in the job-hunting process. And they are mainly used to search for job-related skills, personal development information, job-related contacts, and corporate background information. In the case of SNS usage time, usage frequency, friends' number and usage period, both of domestic students and international students use SNS 5~10 times per day on average and every time use about 1~3 hours. Most of them have about 50~200 friends on social media, and they have been used social media for about 3~5 years on average.

Table 4 - Characteristics of SNS usage situation (n=507)

Classification		Total	Rate (%) Frequency	Domestic students (n=313)		International students (n=194)	
				Rate (%)	Frequency	Rate (%)	
SNS Usage Type	Facebook	112	22.0	66	21.1	46	23.7
	LinkedIn	153	30.2	84	26.8	69	35.6
	Twitter	168	33.1	106	33.9	62	32.0
	Instagram	146	28.8	88	28.1	58	29.9
	WeChat	233	46.0	133	42.5	100	51.5
	Weibo	128	25.2	66	21.1	62	32.0
	Others	97	19.1	67	21.4	30	15.5
Information Search Type	Company background information	204	40.2	111	35.5	93	47.9
	Personal development	276	54.4	168	53.7	108	55.7
	Job-related practical skills	311	61.3	205	65.5	106	54.6
	Job-related contacts	206	40.6	126	40.3	80	41.2
	Job opportunities	143	28.2	83	26.5	60	30.9
Usage Duration	Less than 30mins	59	11.6	35	11.2	24	12.4
	30 mins~1 hour	132	26.0	87	27.8	45	23.2
	1 ~ 3 hours	161	31.8	106	33.9	55	28.4
	3~5 hours	97	19.1	55	17.6	42	21.6
	More than 5 hours	58	11.4	30	9.6	28	14.4
Usage frequency	Less than 1 time	49	9.7	35	11.2	14	7.2
	1~ 5 times	134	26.4	86	27.5	48	24.7
	5~10 times	176	34.7	105	33.5	71	36.6
	10~20 times	94	18.5	48	15.3	46	20.6
	More than 20 times	60	11.8	39	12.5	21	10.8
Number of Friends	Less than 50 friends	91	17.9	57	18.2	34	17.5
	50~200 friends	178	35.1	115	36.7	63	32.5
	200~500 friends	125	24.7	71	22.7	54	27.8
	500~1000 friends	75	14.8	49	15.7	26	13.4
	More than 1000 friends	38	7.5	21	6.7	17	8.8

Usage Period	Less than 1 year	62	12.2	39	12.5	23	11.9
	1~ 3 years	127	25.0	82	26.2	45	23.2
	3~5 years	134	26.4	91	29.1	43	22.2
	5~8 years	92	18.1	56	17.9	36	18.6
	More than 8 years	92	18.1	45	14.4	47	24.2

Table 5 shows that the order of independent variables' means is first information search activity, then social networking activity, and third is community-based sharing activity. The order of dependent variables' mean is first information acquisition and second information

quality. It indicates that SNS users mainly use SNS to do searching information activity in the job-hunting process. Rather than information timeliness and accuracy, they think getting information quickly and conveniently in SNS is more important.

Table 5 - Descriptive statistics of Measurement (n=507)

Definition of Variables		Items	Mean	S.D.	Mean
Patterns of SNS usage activity	Information search activity (TOP 1)	IS1	3.60	0.979	3.696
		IS2	3.66	0.975	
		IS3	3.70	1.038	
		IS4	3.73	1.025	
		IS5	3.65	1.001	
	Social networking activity	SN1	3.75	0.969	3.692
		SN2	3.72	0.928	
		SN3	3.70	1.015	
		SN4	3.58	1.038	
		SN5	3.65	0.944	
	Community-based sharing activity	CS1	3.42	1.053	3.556
		CS2	3.42	1.096	
		CS3	3.44	1.064	
		CS4	3.63	1.008	
		CS5	3.53	1.071	
Information quality		IQ1	3.52	0.962	3.570
			3.42	1.055	
			3.49	0.991	
IQ2			3.51	0.989	
IQ3					
IQ4					
Information acquisition (TOP 1)		IA1	3.49	1.024	3.635
			3.53	0.952	
			3.61	0.958	
IA2			3.60	1.006	
IA3					
IA4					

4.2 Exploratory Factor Analysis (EFA) and Reliability

As Table 6 shows that SN4 combined with community-based information sharing variables as a factor, which means when respondents wrote the questionnaire, they thought the number 4 question (SN4) of social networking activity is similar to community-based information sharing activity. And the number 3 question (SN3) of social networking activity has been deleted because its value is so low that can't measure social networking activity. Thus, according to exploratory factor analysis, the number of variables' measurements has been changed as Table 7 shows.

In Table 7, the Cronbach's alpha coefficient of social networking activity is 0.778 more than 0.7 is good. Community-based sharing activity's Cronbach's alpha coefficient is 0.903 is excellent. Others all are more than 0.8. And in Table 6, all variables' Cronbach's alpha coefficient is 0.954 is excellent. Thus, the measurement of variables is all reliable.

Table 6 - Exploratory Factor Analysis

Rotated Component Matrix [a]						Commonalities
	Component					
	1	2	3	4	5	
CS3	.765					0.743
CS5	.756					0.688
CS1	.744					0.708
CS2	.743					0.736
CS4	.576					0.576
SN4	.558					0.620
IS1		.808				0.764
IS2		.764				0.702
IS4		.682				0.657
IS3		.663				0.616
IS5		.601				0.600
IQ3			.770			0.738
IQ2			.701			0.699
IQ4			.677			0.686
IQ1			.569			0.590
IA1				.633		0.729
IA3				.583		0.680
IA2				.565		0.657
IA4				.562		0.688
SN2					.692	0.714
SN1					.653	0.745
SN5					.512	0.648
Eigenvalues	11.705	1.166	0.912	0.563	0.549	
% of Variance	55.736	5.553	4.344	2.680	2.615	
Cumulative %	55.736	61.289	65.633	68.313	70.927	
Kaiser-Meyer-Olkin (KMO)=0.969, df=253, p=.000***						
Bartlett's chi-squared (x^2) =7088.525						
Cronbach's alpha=0.954						

Table 7 - Reliability Analysis

Variables	Number of items before modification	Number of items after modification	Cronbach's alpha
Information searching activity	5	5	0.885
Social networking activity	5	3	0.778
Community-based sharing activity	5	6	0.903
KMO=0.965, df=91, x²=4467.742, p=.000***			
Information quality	4	4	0.852
KMO=0.807, df=6, x²=768.799, p=.000***			
Information acquisition	4	4	0.877
KMO=0.826, df=6, x²=905.209, p=.000***			

4.3 Confirmatory Factor Analysis (CFA) and Construct Validity

Confirmatory factor analysis (CFA) was used to determine the factor and factor loading of measured variables, and to confirm what is expected on the basic or pre-established theory. In order to measure one factor with a different measurement variable, use AMOS 25.0 to test. As Table 8 shows, standardized coefficients are all larger than 0.5, AVE is from 0.517 to 0.623 higher than 0.5 and conceptual reliability is from 0.762 to 0.886 more than 0.7. Thus, convergent validity is guaranteed.

Table 8 - Convergent Validity Analysis

Variables		Non-standardization Coefficient	Standardized Coefficient	S.E.	C.R.	P	AVE	C.R.
Information searching activity	IS5	1	0.776				0.580	0.873
	IS4	1.047	0.798	0.055	19.198	***		
	IS3	0.989	0.752	0.055	17.848	***		
	IS2	1.011	0.781	0.054	18.700	***		
	IS1	1.006	0.787	0.053	18.886	***		
Social networking activity	SN5	1	0.734				0.517	0.762
	SN2	0.898	0.703	0.056	15.975	***		
	SN1	0.986	0.726	0.060	16.534	***		
Community-based sharing activity	CS5	1	0.795				0.565	0.886
	CS4	0.887	0.751	0.048	18.394	***		
	CS3	1.022	0.814	0.050	20.423	***		
	CS2	1.051	0.813	0.051	20.417	***		
	CS1	0.982	0.791	0.050	19.668	***		
	SN4	0.891	0.722	0.051	17.515	***		
Information quality	IQ1	1	0.766				0.564	0.838
	IQ2	1.053	0.755	0.060	17.568	***		
	IQ3	1.020	0.770	0.057	17.971	***		
	IQ4	1.033	0.785	0.056	18.374	***		
Information acquisition	IA1	1	0.821				0.623	0.869
	IA2	0.912	0.794	0.044	20.752	***		
	IA3	0.910	0.788	0.044	20.530	***		
	IA4	0.964	0.800	0.046	20.959	***		

In Table 9, all correlation coefficients between variables are positive. The coefficient of information quality and information acquisition is 0.818 higher than 0.8, which means they have a risk of multicollinearity. But according to the results of the multi-regression analysis, as Tables 12,13,14,15 shown, all the VIF values are less than 10. Thus, the discriminant validity of this model is suitable.**Table 9. Discriminant Validity Analysis and Correlation analysis**

	AVE_IS	AVE_SN	AVE_CS	AVE_IQ	AVE_IA
AVE_IS	1				
AVE_SN	.797**	1			
AVE_CS	.744**	.734**	1		
AVE_IQ	.698**	.710**	.750**	1	
AVE_IA	.753**	.746**	.785**	.818**	1

*p<.05, **p<.01, ***p<.001

4.4 Hypotheses Testing

AMOS 25.0 were used in order to estimate the fitness of model, the fit indices, acceptance standard and index value were summed up as below: $\chi2=0.000$, $\chi2/df=1.731$, RMR=0.033, RMSEA=0.038, GFI=0.941, AGFI=0.925, NFI=0.954, TLI=0.977, IFI=0.981, CFI=0.980, PGFI=0.744, PNFI=0.827. Given this, the index values of this modification model are all meet the criterion of judgment, so the measurement model in this study is acceptable.

In order to verify the impact of SNS usage patterns behaviors on employment information, the researcher used multiple regression analysis. The results as Tables 10,11,12,13 shown:

(1)

Patterns of SNS Usage Behaviors & Information Quality

As shown in Table 10, the impact of SNS usage patterns behaviors on information quality R²value is 0.693 and adjusted R²value is 0.691.VIF less than 10, Durbin-Watson value is 1.901 close to 2, and F value is 378.529 (p=.000), this model is statistically valid. To be specific, community-based sharing activity (β=.542), information searching activity (β=.206), social networking activity (β=.159) indicated that community-based sharing activity, information searching activity, and social networking activity all have positive (+) effects on information quality. Thus, H3, H1, H2 are accepted.**Table 10.**
Results of Hypothesis Testing 1

Model	Non-Standardized Coefficient		Standardized Coefficient	t	Significance	VIF
B	SE	β				
(Constant Value)	.383	.100		3.840	.000***	
1 AVE_CS	.526	.038	.542	13.964	.000***	2.466
AVE_IS	.202	.044	.206	4.621	.000***	3.252
AVE_SN	.153	.037	.159	4.127	.000***	2.422
Dependent Variable: AVE_IQ						
R²=.693, Adjusted R²=.691, F=378.529, P=.000, Durbin-Watson=1.901						

*p<.05, **p<.01, ***p<.001

(2) Patterns of SNS Usage Behaviors & Information Acquisition

In Table 11, R²value is 0.518 and adjusted R²value is 0.516. VIF all less than 10, Durbin-Watson value is 2.083, and F value is 270.289 (p=.000), this model is statistically valid. In detail, community-based sharing activity (β=.463), information searching activity (β=.301) investigated that community-based sharing activity and information searching activity all have positive (+) effects on information acquisition. Thus, H4 and H6 are accepted. But as for social networking activity (β=.083, p=0.084>0.05) means information acquisition was not significantly predicted by social networking activity. Thus, H5 is rejected.

Table 11 - Results of Hypothesis Testing 2

Model		Non-Standardized Coefficient		Standardized Coefficient	t	Significance	VIF
	B	SE	β				
2	(Constant Value)	.458	.143		3.212	.001***	
	AVE_CS	.533	.055	.463	9.724	.000***	2.369
	AVE_IS	.350	.055	.301	6.328	.000***	2.369
	AVE_SN	-	-	.083	1.729	.084	2.422
Dependent Variable: AVE_IA							
R²=.518, Adjusted R²=.516, F=270.289, P=.000, Durbin-Watson=2.083							

*p<.05, **p<.01, ***p<.001

(3) Amount of SNS Use as a Moderator Variable between 【Patterns of SNS Usage Behaviors & Information Quality】

In Table 12, SN_ Moderator (β=-.043, p=0.094>0.05), IS_ Moderator (β=-.034, p=0.188>0.05), CS_ Moderator (β=-.043, p=0.090>0.05), these 3 variables are not significant as moderator variables. Thus, H7-2, H7-1, H7-3 are rejected. In other words, H7 was not accepted.

Table 12 - Moderator Analysis 1

Model		Non-Standardized Coefficient		Standardized Coefficient	t	Significance	VIF
	B	SE	β				
3	(Constant Value)	.383	.100		3.840	.000***	
	AVE_CS	.526	.038	.542	13.964	.000***	2.527
	AVE_IS	.202	.044	.206	4.621	.000***	2.792
	AVE_SN	.153	.037	.159	4.127	.000***	4.393
	SN_ Moderator	-	-	-.043	-1.558	.094	1.031
	IS_ Moderator	-	-	-.034	-1.675	.188	1.097
	CS_ Moderator	-	-	-.043	-1.318	.090	1.090
Dependent Variable: AVE_IQ							
R²=.693, Adjusted R²=.691, F=378.529, P=.000, Durbin-Watson=1.901							

*p<.05, **p<.01, ***p<.001

(4) Amount of SNS Use as a Moderator Variable between 【Patterns of SNS Usage Behaviors & Information Acquisition】

In Table 13 SN_ Moderator (β=-.367, p<0.05), IS_ Moderator (β=-.315, p<0.05) which means the amount of SNS use has a partial moderator effect between social networking activity and employment information acquisition, and between information searching activity and employment information acquisition. Thus, H8-1 and H8-2 were accepted. For CS_ Moderator (β=-.075, p=0.708>0.05) is not significant as a moderator variable. thus, H8-3 is rejected. In other words, H8 was partially accepted. Based on the above explanation, the results of hypothesis were listed in the Table 14 as below.

Table 13 - Moderator Analysis 2

Model		Non-Standardized Coefficient		Standardized Coefficient	t	Significance	VIF
B		SE	β				
4	(Constant Value)	.367	.145		2.530	.012*	
	AVE_CS	.530	.056	.460	9.426	.000***	2.466
	AVE_IS	.364	.060	.313	6.103	.000***	3.252
	AVE_SN	-	-	.000	-.002	.998	2.422
	SN_ Moderator	.191	.075	.367	2.532	.012*	22.284
	IS_ Moderator	-.165	.077	-.315	-2.134	.033*	23.121
	CS_ Moderator	-	-	.075	.375	.708	41.792
Dependent Variable: AVE_IA							
R²=.526, Adjusted R²=.522, F=139.168, P=.000, Durbin-Watson=2.069							

*p<.05, **p<.01, ***p<.001**Table 14 - Results of Hypothesis Testing**

Hypothesis	Content of the Hypothesis	Results
H1	Information searching activity on SNS has a positive (+) effect on the employment information quality	Accepted
H2	Social networking activity on SNS has a positive (+) effect on the employment information quality	Accepted
H3	Community-based sharing activity on SNS has a positive (+) effect on the employment information quality.	Accepted
H4	Information searching activity on SNS has a positive (+) effect on the employment information acquisition	Accepted
H5	Social networking activity on SNS has a positive (+) effect on the employment information acquisition	Rejected
H6	Community-based sharing activity on SNS has a positive (+) effect on the employment information acquisition	Accepted
H7	The amount of SNS usage has a moderate effect on the patterns of SNS usage behaviors and employment information quality	Rejected
H7-1	The amount of SNS usage has a moderate effect on the patterns of SNS usage behaviors and employment information quality	Rejected
H7-2	The amount of SNS usage has a moderate effect on social networking activity and employment information quality	Rejected
H7-3	The amount of SNS usage has a moderate effect between community-based sharing activity and employment information quality	Rejected
H8	The amount of SNS usage has a moderate effect between the patterns of SNS usage behaviors and employment information acquisition	Partially Accepted
H8-1	The amount of SNS usage has a moderate effect between information searching activity and employment information acquisition	Accepted
H8-2	The amount of SNS usage has a moderate effect between social networking activity and employment information acquisition	Accepted
H8-3	The amount of SNS usage has a moderate effect between community-based sharing activity and employment information acquisition	Rejected

Conclusions

5.1 Contributions

The conclusions of this study are as follows: First, it has been shown that the patterns of SNS usage behaviors have a positive effect on information quality. The frequent use of social media search functions can improve judgment on information and perception of the information usefulness, so more timely and accurate employment information can be found. And in job-related groups, group members often share information with each other, so they can get more and better employment information. Besides, the more friend's social media users have, the more diverse their friends are in age, region, occupation, education, and experience, the better job information they may obtain.

Second, the more frequently users search information on social media, and the more likely they will find good sources of information and obtain better employment information easily. Besides, frequently sharing information may increase group members' willingness to share information, making sharing more active and easier to obtain employment information easily. But, the use of social relationships cannot obtain employment information more conveniently and faster. The reason is that the diversity of information has increased, but the difficulty of obtaining information has also increased.

Third, the improvement of information quality has nothing to do with the duration and frequency of SNS usage behaviors. There is no relationship between community-based sharing activity and the convenience of information access, even if it increases the duration and frequency of sharing information in the community.

Fourth, the longer and the more frequently users search for information on social media, they will find good information sources, furthermore, the Big Data recommendation feature on social media will also provide that information, which increases the convenience of information acquisition. Additionally, the range of sources of information expands with the diversity of social media friends such as age, region, occupation, education and experience. Although it increases the difficulty of obtaining information, increasing the time and frequency of use can still improve the convenience of obtaining information.

5.2 Theoretical and Practical implications

As for theoretical implication, first, this paper is one of the initial attempts to fill the gap of the influence of social media usage on employment information from the perspective of job seekers. The researcher considers social media as an information source and studies the effect of social media usage on information quality and information acquisition. Second, this paper specifically defines 3 patterns of social media usage behavior and proposes the measurement of them, which can be used as the basic materials of future research. Third, provide theoretical evidence for the impact of social media use on employment information, validate correlations between 3 patterns of social media usage behaviors. Also, validate the significance of these behavioral patterns.

For practical implications, this study proposed some practical instructions. For job seekers, they can make better use of social media to find employment information and job opportunities. For recruiters, they can post targeted job postings based on employees' job-hunting behaviors. For SNS software developers, they can provide valuable information opportunities to social media platform users and develop new functions that are beneficial to job hunting. For companies, they can improve service levels and develop development plans based on strategic suggestions provided in this article.

5.3 Limitations and Future Directions

This paper has the following 2 limitations: First, The main subjects of this paper are the 20s and 30s job seekers, but there are insufficient researches on unemployment or reemployment person over 40 years old or the elderly. Secondly, the number of international students' samples collected in this article is so small that it is hard to find out the difference between domestic students and international students in applying for jobs through social media in detail. The future research direction is to extend the diversity of the samples, such as diverse age groups and diverse nationalities. In addition, it is necessary to study the relationship between offline employment information and offline employment information.

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Digitizing Social Security Allowance Schemes:
A Future Perspectives in the Context of Nepal

Jitendra Basnet

Lincoln University College, Malaysia

Abstract

The Government of Nepal offers a large range of social protection programs including cash transfers, cash for work, scholarships, midday meals, health subsidies, etc. The whole costs of social protection programs occupy about 3.9 percent of GDP. It is essential to review them that is why this article is written. It reviews these social programs.

Keyword

social security programs, digitalization, integrated social protection information system

Introduction and objective

A couple of decades are playing vital role in the transformation of the governance system in Nepal. The rule of Constitutional Monarchy was shifted into the Federal Democratic Republic of Nepal. In the post conflict scenario, the voice of the voiceless and marginalized people was amazingly highlighted and pinpoint them into the central arena of socio-political agenda. The Constitution of Nepal focusing the concept of a socialism-oriented welfare state. It has ensured the right to social security for the senior citizen, single women, the disabled, incapacitated and helpless, those unable to take care of themselves, children, economically deprived and endangered ethnicities. The Fifteenth Periodic Plan of the Government of Nepal purposes to "make social security and protection sustainable, universal and accessible, for the implementation of civil rights and strengthen the trust of citizens towards the state," with the vision of "building a sustainable social security system for all, an egalitarian society and a welfare state." Accordingly, annual government's policy, programs and budget also emphasized the social protection and inclusion issues.

The Government of Nepal offers a large range of social protection programs including cash transfers, cash for work, scholarships, midday meals, health subsidies, etc. The whole costs of social protection programs occupy about 3.9 percent of GDP. The largest social protection program in the country is the Social Security Allowances (SSA). Which has more than NPR 93.7 billion annual budget for the current FY21/22 and reaches around 3.5 million beneficiaries across the country. Similar social protection investments in health, education, employment, pension, nutrition are implemented various governmental agencies nationally having produced significant outcomes over the past years. However, challenges remain in terms of delivery systems, coverage, and efficiency due to fragmentation of programs and lack of integrated systems to inform inclusive, collaborative, and evidence-based planning and monitoring of programs in federal Nepal. The objective of this article is to review: the social security management information system is an integrated social registry system. Capacity and resource constraints are an issue to establish, develop and operate the system at both local and provincial level as well as in some agencies at the federal level.

Box 1: Constitutional and Policy back up of Digitizing Social Protection related programs and services

(a) *Implementation of the Constitution*

To guarantee the right to social security in accordance with the Constitution of Nepal

(b) *Implementation of the 15th Periodic Plan*

To develop social security integrated information system in accordance with the strategy of developing integrated intergovernmental information system to enable effective coordination and cooperation as well as strengthened reporting and monitoring system between the federal, state and local level in social protection related programs and services

(c) *Implementation of Annual Policies and Budgets*

To develop integrated targeting and delivery of various poverty alleviation and social security programs run by various ministries including agriculture, industry, labor, health (FY 2077/78). To consolidate information between various agencies and ensure security of collected data (FY 2078/79).

Box 1 Constitutional and Policy Back up

Materials and methods

The method adopted is review of the policy and programs the government has taken in the country.

Results and discussion

The journey of social security allowances in Nepal was started in 1994 when a cash transfer scheme of 100 Nepali Rupees (NPR) to all the elderly citizens aged 75 and above was first introduced. The program was then expanded to widows aged 60 and above as well as the disabled persons in 1996. Since fiscal year 2008/09, the government of Nepal has been providing allowances to single women and endangered ethnicities. The successive governments have not only increased the monetary value of the allowances but also relaxed the eligibility criteria to qualify for such allowances. Currently, the threshold for old age pensions is 70 years except for Dalits and those from the Karnali region who qualify at a much younger age of 60. Among these, the child nutrition grant also provided to at most two children per mother from the Dalit communities and other 25 districts from least ranking in poverty index. However, there are gaps in the distribution of these allowances for reasons including the lack of information among the beneficiary households. The social security allowances currently offered by the government are as follows:

S.N.	Type of Allowance	Eligibility	Allowance Rate/ Per Month	Total Beneficiaries	Annual Budget (NPR in thousand)
1	Senior Citizens	Aged 70 and older (60 for Dalits and those from the Karnali region)	4000	1520510	6082040
2	Single/ Widow Women	This includes all the women who are single (unmarried or divorced or legally separated aged 60 or older and widow of all age group	2660	631084	1678683
3	Fully Disabled	Fully disabled persons who have obtained a red disability identity card from the government	3990	55059	219685
4	Severely disabled	Severely disabled persons who have obtained a blue disability identity card from the government	2128	105051	223548
5	Endangered Ethnicities	Citizens of the following communities: Kusunda, Bankariya, Raute, Surel, Hayu, Raji, Kisan, Lepcha, Meche, Kusbadiya	3990	22544	89950
6	Child Nutrition	At most two children per mother from the Dalit communities and other 25 districts from least ranking in poverty index	532	1124198	598073
		Total		3458446	8891979
Grand Total (For 12 Month)					106703748

Table 1: Components of Integrated Social Information System

(Source: DoNIDCR Annual Report, 2021)

Delivery Mechanism of Social Security Programs and Services in Nepal

The social security related programs and services have implemented by various governmental agencies like home affairs, education, health, labour and employment, agriculture, poverty alleviation, food and nutrition etc. The absence of an integrated framework for social security and protection system has led to fragmentation and duplication of resources and the lack of coordination between these various programs has limited their access for the target beneficiaries.

The SSA program holds the pivotal role social protection network. The Ministry of Home Affairs (MoHA), Department of National Id and Civil Registration (DoNIDCR) is key organization to implement the government policy and programs of the SSA. The 753 Local Levels and their 6743 wards are involved to enroll, verify, register of the beneficiary and manage as well as update the records. The local Levels also distribute allowances through bank account to the beneficiary. The department has launched the Vital Event Registration and Social Protection Management Information System-VERSP-MIS to digitize the beneficiary's enrollment, registration, renew, update and cash transfer through bank accounts. VERSP-MIS is a combined system of vital event registration and the social security allowances program. The "Digital Nepal Framework" also address to establish an integrated social security management information system to improve the delivery of various social protection programs. The concept of integrated digitization system has been proposed as an essential element of building an integrated social information system with the aim of improving access of citizens to various programs, improving efficiency of service delivery, reducing undesirable duplications, and enabling data and evidence-based planning and monitoring in the delivery of social protection in the country.

Scope of Digitization for Social Security Programs and Services in the Context of Nepal

The government offer a numerous of social programs to address the diverse needs of their citizens. Some programs have the same population of interest with similar objectives, causing duplications and wastage of resources, while some programs are complementary to one another, boosting impacts. Although programs can be quite different with regards to its objectives or population of interest, they pass through common phases along the delivery chain, including:

(a) Outreach, intake & registration,

(b) Assessment of needs and conditions,

(c) Determination of potential eligibility,

(d) Taking decisions on enrollment and the benefits or service package; and

(e) Carrying out the implementation cycle of transactions (payments or service provision) and active case management (including monitoring, grievance redress, and so forth).

However, an independent processes led by multiple actors creating fragmentation and bad duplications, and wastage of resources due to separate management and delivery by different actors. In the international literature fragmented service delivery and inadequate impact towards improving the well-being of the poor and vulnerable. Therefore, the commonalities in the various phases along the delivery chain present opportunities for integration and interoperability to reduce private cost to population and public cost to administrators, while improving data quality and identification of population for social programs and monitoring of delivering of programs. Hence it increases operational efficiencies and cost-efficiency of government programs.

The digitization offers policymakers access to geographic, demographic, and socio-economic data of households and of all their members. By digital grouping of individual information at household level, policymakers have access to welfare measurement and other socio-economic and spatial data to help with profiling both household and individuals within a geographic area.
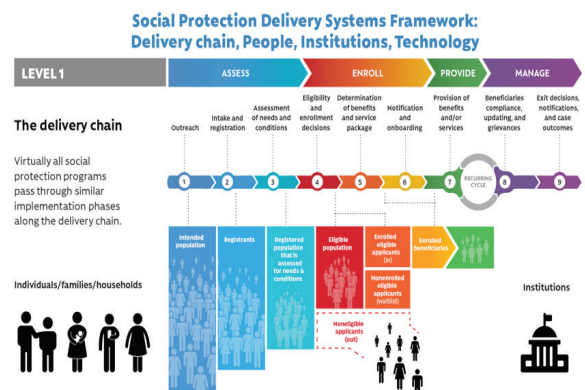

Figure 1: Social Protection Delivery Systems Framework
(Source: P. G. Leite, 2021)

Conceptual Framework for an Integrated Social Security Management Information System

The Integrated Social Security Management Information System is an information management system that harmonize the process of eligibility supporting outreach, intake, registration, and determination of potential eligibility for one or more social programs. It has both a social policy role, as inclusion systems, and an operational role, as information systems.

The fifteenth Periodic Plan includes three strategic areas; among these one of the areas identified in development of an integrated social protection information system to improve intergovernmental coordination and collaboration in the federal context to address the problems of lack of data, fragmentation, records and inefficiency in social security delivery system. The Digital Nepal Framework also prioritize to establish, develop and operate the integrated social security management information system.

Integrated Social Security Management Information System is conceptualized here as an Integrated Social Registry (ISR). The key instrument and an integral component of the Government of Nepal's policy objective to build and implement an integrated social assistance information system. The broader role that the ISR is expected to fulfill is twofold: first, to improve the process for identification of population of interest for multiple programs, hence improve delivery of social programs, by integrating the outreach, communication, intake and registration, and assessment of needs and conditions for multiple programs through the use of a single or integrated registration form. In addition, due to the expansion of National ID and digitization of civil registration, the task will help to build the foundations for linking programmatic and administrative data systems to enable development of an integrated beneficiary registry of selected government social programs. The following figure outlines a proposed conceptual framework of an integrated social assistance information system with the ISR as a core element.
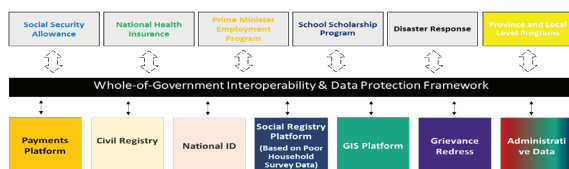

Figure 2: *Framework for Integrated Social Protection Information System for Nepal*
(Source: P. G. Leite, 2021)

Strategic Framework for Building and Implementing Integrated Social Registry

The concept and visions of an integrated social registry needs a strategic and long-term approach that takes into consideration existing institutional, political, policy and programmatic landscape. The ISR framework consideration and outlines a strategic approach to building and implementing social registry in Nepal.
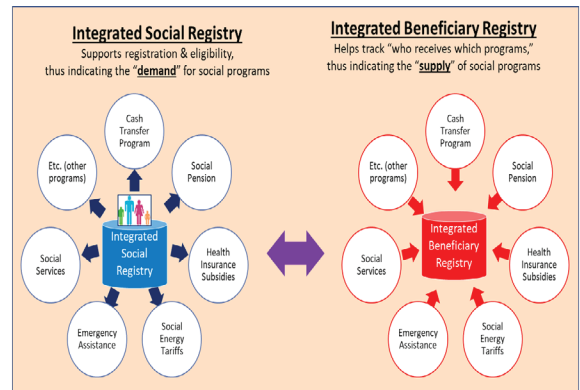

Figure 3: *Components of Integrated Social Information System*
(Source: P. G. Leite, 2021)

An integrated social registries is often a huge source of expenditures incurred during the design and development phase. Nepal regularly undertakes numerous national data collections (including census, NLSS, NLFS etc.) and has also most recently has been collecting household level socio-economic data for poor household (PHH) identification through the local levels. To reduce cost and operational inefficiencies involved in census style data collection, it is proposed to start with existing recent household level data and build mechanisms to verify, link and update it through social registry-based processes.
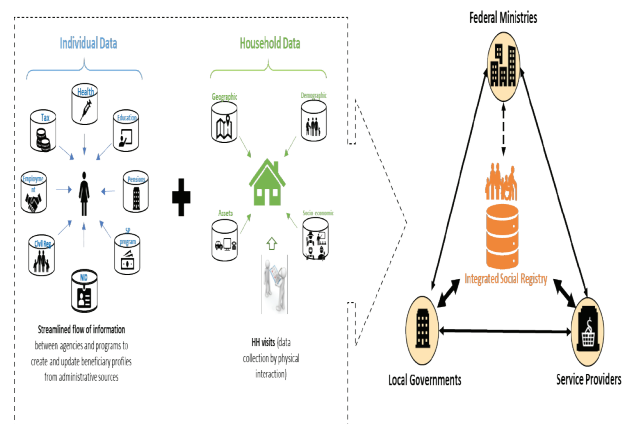

Figure 4: *Components of Integrated Social Information System*
(Source: P. G. Leite, 2021)

Conclusion

Government of Nepal implements a large number of social protection programs (more than 50), among them SSA is one of the largest program. The significant number of beneficiaries receive social security allowances. The different programs manage their beneficiary registries and information systems in silos and vary in their readiness to build interoperability with other government systems. Some programs still continue to rely on paper-based lists and have underdeveloped reporting systems to manage the information on program delivery. Hence, a phased approach needs to be adopted starting with those program and administrative systems that are more developed and slowly support the others to integrate, use and/or provide beneficiary information through the social registry gradually.

The social security management information system is an integrated social registry system. Capacity and resource constraints are an issue to establish, develop and operate the system at both local and provincial level as well as in some agencies at the federal level. The constraints arise not only from availability of personnel but also from the skills and motivation of the officials and a general lack of institutional culture to work across sectoral boundaries. Ensuring political commitment, enabling a collaborative environment, and sustained availability of resources are key aspects that the approach needs to consider for successful implementation.

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Virtual Mode of Teaching-Learning and its Effectiveness during Covid-19 Pandemic

Kabita Bhandari
Research scholar
Texas College of Management & IT
Lincoln University College, Malaysia
Sateesh Kumar Ojha
Lincoln University College, Malaysia

Abstract

A virtual class is considered one of the most important components for the educational development of a country during a time of the global pandemic. This article aimed to identify the factors that support virtual classes to run effectively in college, to examine the virtual classroom that is affected by the strategies of teachers in teaching and learning, To determine the areas for improvement as perceived by the students, teachers, and policymakers for enhancing learning and teaching in virtual classrooms.

And to forecast the sustainability and effectiveness of virtual teaching and learning environment in the upcoming future. Data were collected from 453 respondents including students, teachers, officials, and residents. The tools of analysis were correlation and regression analysis.

Keyword

Virtual mode of teaching, learning, COVID

Introduction

A virtual environment is a state of being that allows various actions that take place without any physical contact or movement by utilizing technology like computers. In a virtual school, students and teachers communicate without physical contact and without meeting in person. By way of example, virtual communication is used in education to facilitate distance learning, which does not require physical contact or movement from students or instructors. In its early stages, virtual communication consisted of tools like telephones and chat rooms on the Internet. With the progress of technology, new technology emerged, including video telephony and other systems, which are now widely used for virtual meetings. In the late 20th century, chatting programs were common for education, and now online community groups are using technology. In the future, instructors may have an option regarding educational systems from the standpoint of effectiveness, if learning methods are evaluated solely on their effectiveness. The significance of virtual education methods from a student's perspective is relevant to assessing long-term sustainability intentions of educational methods relating to learners' preferences.

Nepali student was diagnosed with COVID-19 on January 25, 2020, shortly after returning from the 'Wuhan' city of China. Tribhuvan International Airport requested that a counter with a thermal scanner be set up by the Nepalese Civil Aviation Authority (Gahatraj, 2020). The government decided to restrict public mobility after several weeks of widespread criticism for its inaction regarding COVID-19 and high-and-cry media coverage of the threat. Nepal's educational institutions have fully embraced the online teaching environment shortly after the Federal Government imposed a 21-day nationwide lockdown on 25th March 2020, which subsequently extended by 19 additional days. The closures of Nepalese institutions affect nearly nine million students (8,796,624) schools and universities due to the pandemic at the end of the second week in May 2020. There are 958,127 pre-primary students (11%), 2,466,570 primary students (28%), 3,463,763 secondary students (39%), and 404,718 students (5%) in higher education. The primary concern was to improve learning effectiveness, which heavily depends on how the content is designed and implemented. In addition to how content is presented online, the efficiency of e-learning depends on how it addresses the limitations faced by students. This study is even more pertinent given that internet-based education

has never been attempted in Nepal. So, this is a massive social experiment.

Literature review

In this segment past studies were done by different researchers in virtual teaching-learning and its effectiveness during the COVID-19 pandemic and other related topic or studies which relates to online teaching-learning are extended for the study. The research was done to collect and evaluate the perceptions of students, the outlook of teachers and policymakers adjudged about online classes that were taken in the pandemic in higher education (college) in Nepal. Understanding online learning as online participation can fundamentally affect research and practice in the area of online education. Hrastinski, S. (2009). The theory on virtual learning and teaching is shown in this research paper which is based on online participation.

Besides several advantages of this study, there is a small sample disadvantage (139 student respondents, 27 teachers, and 10 policymakers) which is not sufficient to generalize the whole of Nepal's higher education that was conducted online in the global pandemic (Alanezi & Alazwani, 2020). This report generalized the challenges of virtual classes were Coronavirus spreading stress, communication gap, teaching strategy, and the interaction between teachers and students. Dropout has been increased, less attendance in class, loss of motivation is the effect of the Covid-19 pandemic on the students. (Dawadi et al, 2020, p. 5).

There is different strength of the virtual classes that were run while there were no physical classes possible in the pandemic. The ability of critical thinking and processing of information promotes the interaction capability among students and teachers (Duffy et al. 1998, pp.51-78), (Picciano, 2002) settings of online interactivity (Hay et al. 2004); (Arbaugh, 2000), virtual learning flexibility, the emphasis on interaction to extend the learning (Chimzmar and Walbert, 1999); (McCall, 2000); (National Center for Vocational Educational Research, 2000), engagement with teachers and classmates in settings of virtual teaching-learning (Soo and Bonk, 1998); (Wise et al. 2005), to use different technology for competition (Wagner et al. 2000) which were determined as the strength of virtual teaching-learning.

Despite strength virtual teaching-learning have various weakness which is explained in the literature. Responses delayed (Hara and King, 1999); (Petrides, 2000); (VonderweLL, 2003), feelings of Isolation and doubt on community (Woods, 2000), technical problems and collaborating problem (Piccoli et al., 2002); (Song et al. 2004), the problem with teachers and instructors (Muilenburg and Berge, 2005), self-motivation, time management, discipline in learning (Golladay et al., 2000) are included in barriers or the threat in virtual teaching-learning. The challenges of virtual teaching-learning are ICT, teaching strategies, the interaction between teachers and students, and the learning abilities of students which affect the effectiveness of online classes.

Understanding online learning as online participation can fundamentally affect research and practice in the area of online education. Hrastinski, S. (2009). I contend that participation in an online learning environment:

- Involves complex interactions with other people
- Requires physical and psychological support
- Requires more than just speaking, and
- It requires synergy or intercommunication with various people/groups and working with them.

Objectives

The long-term goal of the research is to answer the challenges and hindrances that face and the changes that have been adopted to sustain in the future. The purpose of this study is to provide a crystalline exploration of virtual teaching-learning and its impact on teachers, parents, students, and school administration. It also states outlines the conceptual framework of virtual curriculum and its effectiveness. Particularly, the following objectives are for the study:

- To identify the factors that support virtual classes to run effectively in college.
- To examine the virtual classroom that is affected by the strategies of teachers in teaching and learning.
- To determine the areas for improvement as perceived by the students, teachers, and policymakers for enhancing learning and teaching in virtual classrooms.
- To forecast the sustainability and effectiveness of virtual teaching and learning environment in the upcoming future.

Methodology

Study participants were randomly selected from different colleges where the master's program is taught in Kathmandu, Nepal, without considering probability. Participants' genders are being categorized from rural, urban, and suburban areas of 139 students' respondents and 27 teachers. The depth interview was taken with ten knowledgeable/ experienced/leaders and the answers regarding the topic are being interpreted accordingly.

The majority of the respondent in the study are female students and male teachers from the master's program of urban. Table 1.1 shows that 42.4% (59) were male students, 53.24% (74) female student respondents, and 6 students didn't prefer to disclose their gender, where 20 (74.07%) were a male teachers and 7 (25.93%) were female teacher respondents, 94(67.63%) were from master program's first year and 54(32.37%) were from second years, 109(78.42%) were from urban, 17(12.23%) were from rural and 13(9.35%) were from suburban.

Table 1:1 Demographic Information of Respondents

Variables	Category	Count	Percentage
Gender (students)	Male	59	42.4
	Female	74	53.24
	Prefer not to say	6	4.3
Gender (teachers)	Male	20	74.07
	Female	7	25.93
Education Level	Year I	94	67.63
	Year II	54	32.37
Residence	Urban	109	78.42
	Rural	17	12.23
	Suburban	13	9.35

(Source: Author's own research,2021)

Data collection procedure: Structured and unstructured initial questionnaires were created by reviewing the literature and having informal discussions with students taking part in the virtual classes. Quantitative methods were used to conduct the study. Information is collected quantitatively via a questionnaire. The final questionnaire of the study was designed after ten respondents' feedback was taken as a specimen. For the reader's convenience, the results from the analysis of data are presented in tables, bar diagrams, and charts. From the evaluation of data recommendations and conclusions were derived for the study purpose.

Questionnaire Survey: Since interviews can be conducted in several ways or unexpected ways, Google forms will be considered in this research process to collect data due to COVID-19 issues.

Depth Interview: Asking the questions to the leaders/ policymakers by taking their time to get a knowledgeable answer from them. It plays an important part in the study.

Results and discussion

A virtual class is considered one of the most important components for the educational development of a country during a time of the global pandemic. Using the theoretical framework of acceptance, this thesis aimed at identifying factors that influence teachers' and students' acceptance of virtual learning environments in higher education.

Table 2: Mean, Standard Deviation, and Correlation coefficient of the variables

Variables	Mean	SD	ICT total	Ts total	La total	Sti total	Tle total
It totals	10.81	2.080	1	.300**	.057	-.003	.127
				.000	.505	.973	.138
Ts total	6.19	1.636		1	.369**	.133	.180*
					.000	.118	.034
La total	5.50	1.704			1	.240**	.106
						.004	.213
Sti total	7.45	2.638				1	.276**
							.001
Tle total	7.83	2.56					1

Note: Gender (1 = Male, 2 = Female); N = 139; * $p <$ 0.05, ** $p < 0.01$. ITC: Information technology and communication, TS: Teaching strategy, LA: Learning ability, STI: student teacher interaction, TLE: Teaching-learning effectiveness, SD: Standard deviation. *(Source: Author's own research,2021)*

It shows the mean, median, mode, and standard deviation of all key components of questions that were asked in the questionnaire. The highest mean is 10.81 which falls under ICT and the lowest is 5.50 of learning ability. The highest median is 11.00 of ICT and 6 is the lowest which is in teaching strategy and learning ability. Same as mode and in std. deviation the lowest is 1.636 falls under teaching strategy and the highest is of student-teacher interaction which is 2.638. Lower standard deviations show that the data points are very close to the mean of the study, while the higher the standard deviations, the range of value coverage will be bigger.

The correlation analysis between information and communication technology and teaching-learning effectiveness shows the p-value is greater than alpha i.e. Correlation between the variables is not significant at a 5% significance level when 0.138 > 0.05 is calculated. From this, it can be understood that information and communication technology as a factor does not influence the teaching-learning effectiveness. Further, with the correlation coefficient value 0.127, it can be said that there is a positive relationship between ICT and teaching-learning effectiveness. At the level of significance of 0.05, the hypothesis (H01) is accepted.

The correlation analysis between the impact of teaching

strategy and teaching-learning effectiveness shows p-value is less than alpha i.e. correlation between the variables is significant at a 5% significance level when $0.034 < 0.05$ is calculated. From this, it can be understood that teaching strategy as a factor does influence teaching-learning effectiveness. Further, the correlation coefficient value 0.180 denotes that there is a positive relationship between teaching strategy and teaching-learning effectiveness in a virtual class that is taken during a pandemic. At the level of significance of 0.05, the hypothesis (H02) is accepted.

The correlation analysis between learning ability and teaching-learning effectiveness shows p-value is greater than alpha i.e. $0.213 > 0.05$, which means the correlation is not significant between the variables at a 5% level of significance. From this, it can be understood that learning ability as a factor influence does not teaching-learning effectiveness. In addition, with the correlation coefficient of 0.106, it can be determined that learning ability and teaching-learning effectiveness are positively related. At the level of significance of 0.05, the hypothesis (H03) is accepted.

The correlation analysis between student-teacher interaction and teaching-learning effectiveness shows the p-value is less than alpha i.e. $0.001 < 0.05$, which means the correlation is significant between the variables at a 5% level of significance. From this, it can be understood that the teacher-student interaction factor does influence teaching-learning effectiveness. Further, with the correlation coefficient value 0.276, it can be said that there is a positive relationship between student-teacher interaction and teaching-learning effectiveness. At the level of significance of 0.05, the hypothesis (H04) is accepted.

Similarly, the correlation between ICT and other factors i.e. teaching strategy, learning ability, and student-teacher interaction have a p-value of 0.000, 0.505, and 0.973 respectively. Since the p-value of teaching strategy is less than 0.05 and other factors p-value are greater than 0.05, ICT has a significant relationship with teaching strategy and an insignificant relationship with learning ability and teacher-student interaction at a 5% level of significance.

As well, we can see the correlation between teaching strategy and other factors i.e. learning ability and teacher-student interaction have a display have a p-value of 0.000 and 0.118 respectively. Since the p-value of learning ability is less than 0.05 and teacher-student interaction is greater than 0.05 so Teaching strategy has a significant relationship with learning ability and an insignificant relationship with teacher-student interaction at a 5% level of significance.

Moreover, the correlation between learning ability and teacher-student interaction has a p-value of 0.004. The p-value of the factor in the table is less than 0.05, which shows a significant relationship among all variables in a 5% level of significance. The correlation coefficient shows a positive relationship among all variables of studied materials.

Table 3: Regression coefficient, Significant error of the independent variables.

Model	Beta	t-value	Sig.
Constant	4.443	4.035	0.000
Information and communication technology (ICT)	0.092	1.070	0.287
Teaching strategy (TS)	0.119	1.291	0.199
Learning ability (LA)	-0.006	-0.063	0.950
Student Teacher Interaction (STI)	0.262	3.101	0.002
R-Square	0.105		
F	3.913		
Sig.	0.005		

(Source: Author's research, 2021)

The following regression formula model has been developed by using the above findings while doing research:

Teaching-learning effectiveness = 4.443 + 0.092 information and communication technology + 0.119 teaching strategy – 0.006 learning ability + 0.262 student-teacher interaction + e (error)

Coefficient regression in Table 4.13 shows students' teacher's interaction has a significant positive impact on teaching-learning effectiveness whereas ICT used during virtual classes, utilized teaching strategy, and learning ability of students do not affect teaching-learning effectiveness. The regression coefficient of student-teacher interaction in the regression coefficient analysis is 0.262 which indicates that if we increase teaching-learning effectiveness by 1-unit, teacher-student interaction will increase by 0.262 units.

Moreover, R-square is 0.105, which means that the independent variables only explain 10.5% of the dependent variable, teaching-learning effectiveness. Many other different related factors will also influence the dependent variables of the research in the period of study. Using the regression coefficient for this collected data, we get the result of dependent variables that are used in terms of collecting data and information is explained by 10.5%. Also, the F value and significance level are 3.913 and 0.005 which states that this regression equation is acceptable.

conclusion

As we know from the study and it was related to every student and teacher, online teaching-learning is useful because of its convenience and flexibility. The materials provided by colleges and universities are well-structured, feature live classes using Microsoft Teams and zoom by using whiteboards in practical classrooms, and were highly appreciated by students. Additionally, an overwhelming majority of teachers and students rated online classes as more challenging than traditional classes due to limitations in technology skills, delays in getting or providing feedback, and not being able to use ICTs effectively.

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New perspectives of the role of connectivity and digital technologies in creating Cyber Communities

Professor Dr Kanes K Rajah

Executive Director, Centre for Executive and Professional Development LONDON.

www.cepd.london

Abstract

This paper will discuss how connectivity in a cyber civilisation enables new communities to form.

It will explore by taking a practical approach how digital technologies have enabled individuals to create virtual smart communities around them. In subsequent developments even local communities have become smart and at state level we can see the development of smart cities.

All of these changes can be explained by reference to the creation of the World Wide Web and its subsequent evolution into higher level of sophistication. Simply put these can be explained as Web 1.0/2.0/3.0.

With the introduction of the WWW, Web 1 offered content and at the individual level this alone has created new behaviour and social change and the impact on professional and business life, and in public services is immeasurable. The early years of Encarta transformed the young of the nineties into having encyclopaedic knowledge at the tip of their finger, and for free too!

Web 2 and 3 have shifted the landscape of this cyber civilization to new and extraordinary levels. Where the user can introduce and interact with content. AI and IoT and a plethora of numerous other digital technologies have entered the lexicon of the typical IT savvy individual and organisations.

In practical terms such developments have been harnessed to support the transformation of our lives at the local, regional and global level.

In terms of business and marketing strategies the ORB Framework i.e. Owned, Rented or Borrowed, offer the ability to build a life and lifestyle sustainable community around an individual. This is the world of for example Apps, digital platforms and social networks.

Separately, communities can also develop around smart villages. Villages and rural communities which remained isolated are now able to engage in new economic activity. This is also about becoming sustainable villages. Important initiatives in the EU, India and in Africa show us how developed and developing countries including under-developed countries are adopting digital technology driven systems and processes to connect rural and remote communities and to make them into successful, viable and sustainable environments.

On a larger scale smart towns open up the area's human capital. For instance, open innovation on city level such as Bielefeld, Germany's first Open Innovation City, and open innovation partnerships between cities are able to increase efficiencies.

When embarked on a Singapore style digitalisation of the whole country, smart cities provide colossal economic and social opportunities and offer more efficient, healthy and rewarding lifestyles not possible otherwise. According to an earlier study by ABI Research, South Korea, China and Japan are currently leading the deployment of smart cities initiatives in Asia. In South Korea three cities, Anyang, Busan and Namyangju already lead as important examples of smart cities. The government, together with private investment, has created and is making efforts to expand these initiatives in areas, including traffic, government services, security, energy and the environment.

At this level, it is an all-embracing model, with an all-pervasive digital ecosystem covering most aspects of living, working and playing. It has to become part of a

national strategy at state level. This refers to a new world, a cyber civilisation.

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ICT, Civil Registration and Branchless Banking:
Sustaining the Social Cash Transfer

Mahesh Maharjan[a]

[a] Tribhuvan University, Nepal

Tel: +977 9751027530 E-mail:maheshmanmaharjan@gmail.com

Abstract

Information and Communication Technology (ICT) is a driving force of transformation process towards knowledge-based information society, that impact on political, economic and social development. The Government of Nepal (GoN) has started social cash transfer programme to its target groups like senior citizens, widow, children, etc since 1995 A.D. The programme is very popular especially with senior citizens and children. The list of beneficiary is maintained at local level in register and physical cash is distributed on quarterly basis through manual basis. The trend of data shows that every year number of beneficiaries is increased which indicates sustainability of social cash transfer. Civil registration is a process of recording natural events like birth, marriage, death, divorce and migration. The civil registration report shows that number of death records of children and senior citizens is high as compared to others. The primary objective of this research paper is to explore linkage of civil registration with social cash transfer programme and design architecture for sustainability of social cash transfer through branchless banking in Nepal. The researcher has applied quantitative methods, adopted survey method to collect primary data, found that current practice of maintaining data of social cash transfer and civil registration is manual and both programmes data are maintained independently. The researcher concluded that there is a direct linkage between civil registration and social cash transfer and designed architecture for social cash transfer through branchless banking.

Keywords

ICT, civil registration, social cash transfer, branchless banking

Introduction

Information and Communication Technology (ICT) refers to the technology that provides access to information, primarily concerned with the storage, retrieval, manipulation and transmission of digital data (Ochieng & Gichoya , 2013) . It is a driving force of transformation process towards knowledge-based information society, that impact on political, economic and social development (Leipold, 2002). Jones and Williams (2005) stated that ICT enables public service staff to offer a high quality, more efficient and more individualised service to the service seeking citizens. It can free up the time of service providing staffs from bureaucratic duties to create more 'productive' time for them.

ICT has transformed the way people live, work and spend their money. Public sector organizations have focused their efforts towards digitalizing their services to their customers or citizens through the Internet so that the users can get easy access to the available services from any place and at any time (Upadhyaya, Shakya & Pokharel, 2012). The public now expects ICT-enabled interactions, not just with each other or with businesses, but also with public services (Jones & Williams, 2005). The role of ICT in information exchange is manifested in the way information flows faster, more generously, and less expensively for decision-making and for development (Ogbomo, 2009). The advanced technologies have huge potential for delivering prompt, efficient and high quality services to vulnerable, poor and needy population of society (Sahu, 2011).

The social security is a fundamental right of a citizen. The government of Nepal has started distributing social security allowances to its target groups like senior citizens, widow, and children since 1995 (Mathema, 2012). The life style of poor people can be changed through social

security (World Bank, 1997). The beneficiaries list have been maintaining by local bodies on manual basis, only few local bodies have adopted the process of digitizing the beneficiaries list. The social cash transfer has been carried out manually by local bodies. Since the process is manual, there is high chance of missing actual beneficiaries and changes of ghost beneficiaries, who may be benefitted twice or more (NPC, 2012).

Figure 1 shows trend of social cash transfer. Every year number of social cash transfer beneficiaries is increasing with increased in amount being distributed. It shows that in 1997 number of beneficiaries was only 340,000 and amount distributed was 28 millions, where as in 2017, more than 40 billion was distributed to 2.28 million beneficiaries. Likewise, figure 2 shows trend of practice of civil registration. Every year number of death registration is increasing. In 2010/11, it was 98338 where as in 2013/14 it was 121849.

	2010/11	2011/12	2012/13	2013/14	2014/15
Birth	717966	565211	752024	1029681	876193
Death	98338	111350	104923	121849	114352
Marriage	185449	171235	194294	317316	224826
Divorce	338	395	522	1104	1355
Migration	86104	86471	81298	94613	121429

Figure 2: Trend of civil registration

Statement of the problem

The social cash transfer programme is very popular especially with senior citizens and children. The list of beneficiary is maintained at local level in register and physical cash is distributed on quarterly basis through manual basis. The trend of data shows that every year number of beneficiaries is increased which indicates sustainability of social cash transfer. Civil registration is a process of recording natural events like birth, marriage, death, divorce and migration. The civil registration report shows that number of death records of children and senior citizens is high as compared to others.

Objective

The primary objective of this research paper is to explore linkage of civil registration with social cash transfer programme and design architecture for sustainability of social cash transfer through branchless banking in Nepal.

Literature Review

Service delivery is an essential function in relation between government bodies and citizens. It is a part of complex relation between government, society and citizens. The government as a key public service provider, citizens has a right to demand quality services fast, easy at moderate cost. The image of government depends on service delivery with quality services at affordable price to its citizens (Eigeman, 2007). Through the proper utilization and implementation of technology and digital tools, the service delivery of local government could be more effective and challenges could be minimized (McArthur & Snower, 2010). Effective public service delivery is one of the key parameters to measure the goodness of governance. Therefore, government should be willing to formulate new strategies for effective public service delivery (Prasanna, 2008).

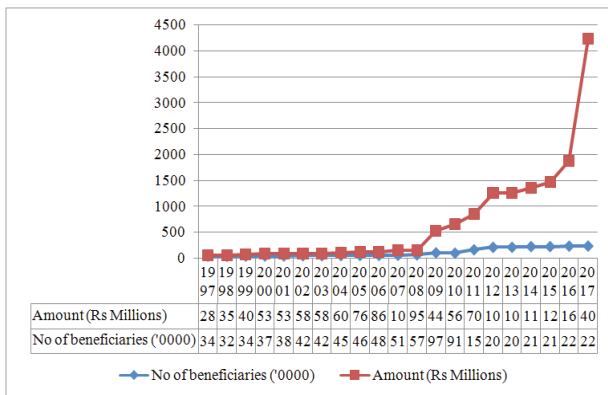|	19 97	19 98	19 99	20 00	20 01	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12	20 13	20 14	20 15	20 16	20 17
Amount (Rs Millions)	28	35	40	53	53	58	58	60	76	86	10	95	44	56	70	10	10	11	12	16	40
No of beneficiaries ('0000)	34	32	34	37	38	42	42	45	46	48	51	57	97	91	15	20	20	21	21	22	22

Figure 1: Trend of social security allowance cash transfer

Civil registration is universal, continuous, permanent and compulsory recording of occurrence like birth, death, marriage, migration, etc. It is a legal document and very much useful as a source of statistics for planning, monitoring social programme and socio- economic development (Gautam, 2016). Carrying huge amount of money from district headquarter to VDC office is very much risk for local bodies and local bodies are directly disturbing cash to beneficiaries. And carrying direct cash by old age people from VDC office to their home is also of high risk (NPC, 2012). The branchless banking is a new innovative idea to reach to poor and unbanked people of rural areas. It is a strategy of distribution channels which are used to provide financial services through the growth and development of technology and helps to expand the concept of the traditional bank branch (Deloitte, 2012). This technology has become a common mechanism to
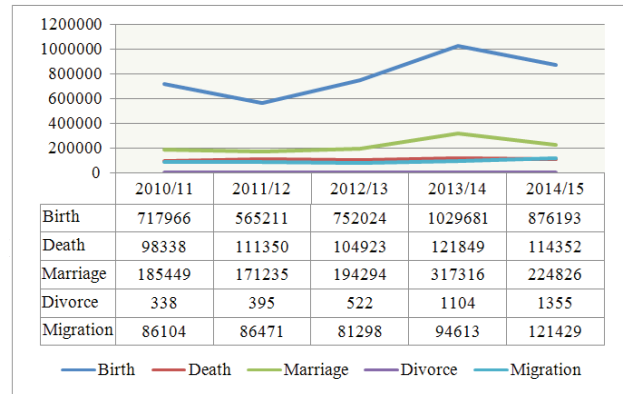
The following are the basic elements, as defined by (Deloitte, 2012) for successful service deliveries are

- Friendly interface with service seekers
- Sustain communication
- Set expectations
- Process and organisation re-engineering
- Build staff capability to deliver services
- ICT as a key enabler
- The legal foundational structure
- Dedicated institutional structures
- Continued monitoring and evaluation

The continuous change in technology and its impact in business and societies have shown a huge importance of information management. As time passes away, competition increases and new businesses and industries appear in the market. Those firms are considered as successful who learn how to use the new technologies (Laudon & Laudon, 2012). With proper use of ICT, it increases efficiency, speed, and transparency in service delivery. It also assists in generation and dissemination of knowledge (Bhatnagar, 2014). ICT is a potential tool of efficient public service delivery. It offers new possibilities for communication between people and organization and increases the quality and quantity of interaction with people. It enhances the transparency and access to organization (Prasanna, 2008). The rapid development of ICT has helped in exploring new opportunities for service delivery and income generation (McArthur & Snower, 2010). With the implementation of ICT-enabled public service delivery, it improves access to public services, increases efficiency, transparency and accountability of government (Eigeman, 2007). Thus, service-oriented IT is helping to determine the directions in which numerous industries and the world economy in general will grow and develop in the future (Song, Baker & Davis, 2015).

The contribution of IT to service delivery is particularly visible in web services, computing services, business intelligence services, and information technology infrastructure (Song, Baker & Davis, 2015). In digital firm, business relationships with customers, suppliers and employees are digitally enabled and mediated. Core business process is accomplished through digital networks (Laudon & Laudon, 2012). With the help of ICTs, huge amount of information can be collected, stored, processed and disseminated to public through different means and media. This information is vital and beneficial to social protection scheme to become successful (Sahu, 2011).

For the implementation of any social protection delivery system, it requires different types of ICT equipment like hardware, software, networks and applications like back-office systems, operational and management information systems (Sahu, 2011). At present, the main challenge is delivering the benefits effectively to the beneficiaries which require good and reliable data. The government of Nepal has started to distribute social security allowances in district headquarters and municipalities through commercial banks, and the provision of opening individual bank accounts for the beneficiaries was made mandatory. And this system is yet to expand at VDC level. At present in villages, there has been no alternative rather than mobilizing government employee for the distribution of allowances (Nepal, 2014). With the advancement of technology in various fields, innovative tools and solutions for development and commercials activities have been known and applied to make easy and fast. Hence, the potential of technology needs to be applied in the social protection and provide financial benefits in feasible and affordable way. Since ICT tools and techniques provide innovative solutions in delivering social protection assistance to the targeted beneficiaries, it has been very much popular (Sahu, 2011).

ICT tools are used to support process in social protection, huge amount of data and information can be collected, stored, processed and disseminated. Generally, the automation of processes results into better operational performance of social protection and improves quality of service delivery (Leipold, 2002). The transformation brought about by technology in the area of delivery of financial services has only been for the better (Kumar & Chitra, 2013).

With the innovation in technologies, globalization and regulatory disruption, there has been huge changes in global payments history. The global payment networks have transformed the lives of millions and billions people and many industries that were deprived of banking facilities (Michael & Paul, 2015). Technology helped banks to reach the doorsteps of the customer by overcoming the limitations on geographical/ physical reach in branch banking and easing the resource and volume constraints (Kumar & Chitra, 2013).

According to social security programme operational work procedure, there has been provision of cash transfer through banking channel to beneficiaries. However, the presence of banking channel has been very much minimal

at rural areas of Nepal. Non-availability or limited availability of banking services in the rural areas has been the most common reason cited for considering payment "not feasible" through banks (NPC, 2012). Because of banking policy of maximizing profit, banking channels have been attracted towards urban areas only; social cash transfer of social security beneficiaries couldn't be accomplished through traditional banking channel. The financial inclusion rate of Nepalese people is only 35% (Singh, 2015). Most of the beneficiaries are out of banking facilities and are below poverty line. Information technology has helped in expansion of financial inclusion through more conventional banking channels, such as branch and ATM (Pandey & Joshi, 2014). Internet banking complemented by core banking solutions implemented by banks, mobile banking, and card based electronic transactions at any bank ATM and merchants' locations have offered a variety of channels to bank customers to conduct their payment transactions (Kumar & Chitra, 2013).

The Village Development Committee (VDC) secretaries have to carry huge amount of money from district headquarter to VDC office. So, there is always high risk of carrying huge amount of money. The usage of branchless banking services has the potential of improving service delivery, reducing overall fiduciary risks and leakage in the system. The payments are made directly into beneficiaries' accounts. It facilitates beneficiaries with access to the modern financial system and prospect for future financial inclusion (Pandey & Joshi, 2014). It has been designed around policies that facilitate easy inclusion and holds the promise to improve the standard of living for many in the developing world (Mas & Siedek, 2008).

In South Africa, branchless banking has been deployed as a means to distribute government subsidies and pensions. In order to ensure distribution to the right person, they implemented biometric verification, using Point of Sales (POS) terminals. The POS terminal is a must for branchless banking. It is easy to carry around, and provides a convenient easy-to-use interface for both customer and agent. The POS machine is very much popular for branchless banking because of its special characteristics such as light weight, resistant, equipped with printer and fingerprint sensor, online and offline mode of transaction and easy card reader (Leger, 2012).

Biometrics is one of the best ways to identify an individual. It uses physiological and behavioral characteristics of an individual, which are unique to individual only. The use of biometrics to authenticate an individual instead of passwords is now being studied as a way to improve security to protect the increased amount of sensitive data (Long, 2013). The biometrics is a feature measured from the human body that is distinguishing enough to be used for user authentication (Gorman, 1998). The use of fingerprints has been largely used for law enforcement applications ranging from small and inexpensive fingerprint capture device to fast computing hardware and internet applications (Gorman, 1998). So, as to better deal with illiterate people and to protect them against potential scams, the POS terminal with audio messages for confirmation of transaction and amount withdraw/ deposit by beneficiaries may be enhanced (Leger, 2012).

Research Methodology

The researcher has applied quantitative methods, adopted survey method to collect primary data. The primary respondents are Village Development Committee (VDC) secretary, social mobilizer and computer operator. The researcher has reviewed related books, articles and reports to collect secondary data. Besides, researcher owns experience is also included in this research. He has worked with Department of Civil Registration (DoCR) for more than 4 years as a Management Information System (MIS) Specialist. The collected data have been entered into SPSS 22 and data analysis has been done. For preparing charts Microsoft Excel 2007 is also used.

Result and Discussion

The primary data have been collected from 12 districts of Nepal. The total number of respondents was 373, out of them 350 (94%) were male and 23 (6%) were female.

Table 1: Current social security allowance beneficiaries' data maintained at local level

Beneficiaries data maintained in	No of respondents	Percentage
Hard copy	329	88.20
e-copy with MS-Excel	58	15.55
e-copy with MS-Word	15	4.02
DBMS	11	2.95

At local level, social security allowance beneficiaries' data has been maintained in hard copy, 88% of respondents maintain data in hard copy, 15% maintain in MS-Excel and only 3% use Database Management System (DBMS) software to maintain beneficiaries list. Since, the beneficiaries list has been maintained in hard copy, it is time consuming to get timely report from local level and there

is more chance of editing data easily. This could be one of the reasons that there are high rate of ghost beneficiaries. Now, government needs to bring programme of deploying DBMS with necessary equipment with rigorous training at local level.

Table 2: Perception of respondents for updating beneficiaries' data

Updating beneficiaries data is	No of respondents	Percentage
Really difficult	21	5.6
Difficult	128	34.3
Moderate	189	50.7
Easy	34	9.1
Very easy	2	0.5

Since the use of DBMS software is very much minimal, around 40% of respondents feel difficult to update beneficiaries' data. DBMS software helps to maintain data easy, quick access and easy update. This indicates that maintaining beneficiaries' data in DBMS helps local employees to maintain and update data easily. Since, beneficiaries list are maintained manually in hard copy, it is very much natural feeling difficult to update the list.

Table 3: Perception of respondents on problems for updating beneficiaries' data

Problems on updating beneficiaries data	No of respondents	Percentage
Lack of support staff	112	30.0
Non-registration of death beneficiaries	221	59.2
Non reporting from migrant households	173	46.4
Lack of timely contact by beneficiaries	192	51.5
Beneficiaries too old to visit the office	248	66.5
Age misreporting	43	11.5
No problem	4	1.1

Table 2 shows that 40% of respondents shared difficult to update beneficiaries' data, there were various problems on updating beneficiaries' data. 30% of respondents shared difficult due to lack of support staff, 59% shared problems because of non-registration of death beneficiaries, 46 % shared problems because of non-reporting from migrant households, and 52 % shared lack of timely contact by beneficiaries. Likewise, 67% of respondents shared difficult as beneficiaries too old

to visit the office, 12% shared difficult because of age misreporting of beneficiaries. Table 3 clearly shows that social security programme has direct linkage with civil registration system. When civil registration system is strict or compulsory and linked with social security, the problems of non-registration of death beneficiaries, non-reporting from migrant households, lack of timely contact by beneficiaries and age misreporting are solved automatically.

Table 4: Perception of respondents on problems for updating beneficiaries' data

Payment to beneficiaries	No of respondent	Percentage
Cash at VDC/ward office	301	80.7
Bank through bank account	39	10.5
Bank without bank account	35	9.4
Branchless (Agent)	0	0.0

According to social security guideline prepared by GoN, there is a provision of social cash transfer through banking channel to the beneficiaries. In this context, government facilitates beneficiaries opening personal bank account and transfer into the bank account so that beneficiaries can easily withdraw cash on their need basis. However, the practice of payment through personal bank account was only 10%. More surprise is that there was also practice of payment through bank without personal bank account, 10% of respondents shared such type of practice for social cash transfer. Still, traditional approach of direct physical cash payment to beneficiary hand is in practice, 81% of respondents were in practice of distributing physical cash at VDC office. It is also true that banks are not able to provide banking services from each VDC office. Banks are more profit oriented and have to do more exercise on opening bank branch office at rural areas. Moreover, the presence of branchless banking/ agent bank was 0%. However, branchless banking is a new innovative idea to reach to unbanked and poor people of rural areas. The government should motivate banks towards providing banking facilities at rural areas also.

It is clear that current practice of maintaining data of social cash transfer and civil registration is manual and both programmes data are maintained independently.

Proposed Architecture

An applicant/beneficiary fills "Birth information" form at localregister office with necessary documents. The staff

of local register office enters the applicant information form into the system and gets the filled form print. After verification from the applicant, the local register generates birth certificate from system with "Personal ID" and submits to the applicant after signatory of local register.

Likewise for other vital events, an applicant comes to local register office.   e. g. if the applicant requires marriage certificate from system, initially it checks for "Personal ID". If "Personal ID" is present then local register uses the "Personal ID" and fills necessary fields based on information provided by applicant. If "Personal ID" is not present then local register needs to fill "Birth information" form to generate "Personal ID". Based on "Personal ID", events can be easily registered into system and generate marriage certificate. Likewise it applies for other events too.

In case of "social cash transfer", a beneficiary submits necessary documents like citizenship certificate, birth certificate, etc in order to be eligible for next fiscal year. If beneficiary has no "Personal ID" then he has to fill up "Birth information" form to get "Personal ID". After submission of necessary documents, VDC office staff duly checks those documents and approved. Only after approval, the beneficiary is eligible for next fiscal year.

Once the process of data entry of social security allowance beneficiaries have been finalized and approved by higher authority. Through the government channel, the required amount is transferred to the payment service provider's main account. Then the local payment service provider/ local register from DDC level generates beneficiary list with full details and amount payable and transfer to POS machine. Through POS machine, the local agent provides banking facilities to the beneficiaries. After the payment process, beneficiaries list is consolidated with the main beneficiary data list.
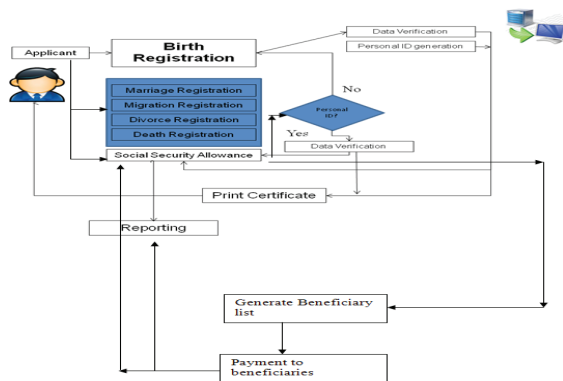

Figure 3: Proposed architecture for social cash transfer programme linked to civil registration

The figure 4 shows process of cash transfer through POS machine to social security allowance beneficiaries. The beneficiaries come with cards that have been provided to them at VDC office or any place that have been mentioned earlier so as to withdraw amount through the POS machine. The bank already has to have transferred amount into the beneficiaries' personal bank account prior distributing cash to the beneficiaries. The agent/ beneficiary swipes the card into POS machine and enters PIN code, then for verification the beneficiary finger print is used. After successful verification, the POS machine prints receipt with details like account number, cash withdraw/deposit, amount, etc. In this way, social security allowance can be easily distributed to exact beneficiary. It helps to make social cash transfer easy and transparent. If PIN code or fingerprint does not match then cash transfer stops here. It means that the beneficiary is not a true beneficiary rather a ghost beneficiary.

Figure 4: Process of cash transfer through POS machine

Conclusion

With respect to time, new technologies have been emerging and new innovative tools and techniques have been developed. The ICT tools are used to provide quick, reliable and efficient services by local government to its citizens. The researcher concluded that there is a direct linkage between civil registration and social cash transfer and designed architecture for social cash transfer through branchless banking which monitor and control the exact beneficiaries and transfer social cash to them in easy and transparent way.

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IT Spill-overs and Total Factor Productivity - Evidence from India

M. Mallikarjun
Professor
Institute of Management
Nirma University, *Ahmedabad, 382 481,*
INDIA
mmallikarjun@nirmauni.ac.in

Abstract

India has witnessed a phenomenal progress since last three decades. Accelerated economic growth on one side and on the other side a very significant and silent revolution was driven by information technology (IT), IT enabled services and software. A large number of studies has explored the factors for accelerated growth and the role of information and communications technology (ICT)on it. Increases in factor productivity is one of the most important sources of economic growth.

The significance and potential of any industry can be analyzed by looking at the following indicators, i.e., the output multiplier, the employment multiplier and the degree of linkages. On all these parameters Indian performance has been quite impressive. In this paper an attempt has been made to analyze the relationship between IT investment and the total factor productivity across major Indian states. Empirical evidence has shown that IT diffusion generates IT externalities, which have positive effects on the total factor productivity of backward regions. And IT diffusion may have both negative impacts, manifested in a widening digital divide and growth gap, and positive impacts reflected in the effects of knowledge spillovers.

In this paper, it has been attempted to identify what role the digital divide plays in the dynamics of growth gap by looking at the relationship between ICT investment and the evolution of the total factor productivity (TFP) in India, and also to look at the contribution of IT investment towards economic growth by enhancing technical efficiency. Secondly attempt has been made to measure the contribution of IT externalities to growth and finally up to what extent IT externalities are related to the level of economic development.

Intentional behavior and Readiness for Change:
The Moderating Role of Learning through Experimentation

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

Readiness for change has become an antidote to thriving in VUCA (Volatile, Uncertain, Complex, Ambiguous) environment. To comprehend how individual readiness for change can be enhanced from intentional behavior, our study employs the theory of planned behavior to examine the change process. We theorize that the extent to which the intentional behavior contributes to enhancing readiness for change varies depending upon the learning through experimentation. Analyses of data collected from 271 professional employees working in India's manufacturing and I.T service industry indicated that the positive association between intentional behavior and readiness for change is strengthened when employees are given a culture of trial-and-error and learning through experimentation.

Keywords

Readiness for change; theory of planned behavior; intentional behavior; learning through experimentation

Introduction

In an era when change is the norm rather than the exception, the capacity of organizations to be adaptable has become critical (Bouckenooghe et al., 2009). To successfully implement a change, readiness for change is required. When an organization is prepared to welcome change, opposition to changes may be decreased. If the opposite is true, the transformation and changes may be refused.

To keep up with the quickly changing, volatile, and dynamic business environment, organizational change and transformation have become critical components of the organizational life cycle (Whiteman, 1998). To survive and grow in the marketplace, firms must effectively adapt to external and internal circumstances such as globalization, corporate changes, a changing global economy, and significant technological innovations. To survive, grow, and keep a competitive edge (Hatch, 2013), organizations are always seeking to adapt. (Battilana et al., 2010). Nonetheless, not all efforts at transformation are effective. In reality, 60% of substantial adjustments were unsuccessful (Beer & Nohria, 2000)authors Michael Beer and Nitin Nohria describe two archetypes--or theories--of corporate transformation that may help executives crack the code of change. Theory E is change based on economic value: shareholder value is the only legitimate measure of success, and change often involves heavy use of economic incentives, layoffs, downsizing, and restructuring. Theory O is change based on organizational capability: the goal is to build and strengthen corporate culture. Most companies focus purely on one theory or the other, or haphazardly use a mix of both, the authors say. Combining E and O is directionally correct, they contend, but it requires a careful, conscious integration plan. Beer and Nohria present the examples of two companies, Scott Paper and Champion International, that used a purely E or purely O strategy to create change--and met with limited levels of success. They contrast those corporate transformations with that of UK-based retailer ASDA, which has successfully embraced the paradox between the opposing theories of change and integrated E and O. The lesson from ASDA? To thrive and adapt in the new economy, companies must make sure the E and O theories of business change are in sync at their own organizations.

","author":[{"dropping-particle":"","family":"Beer","given":"M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Nohria","given":"N.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Harvard Business Review","id":"ITEM-1","issue":"3","issued":{"date-parts":[["2000"]]},"title":"Cracking the code of change.","type":"article-journal","volume":"78"},"uris":["http://www.mendeley.com/documents/?uuid=229b53d0-035b-382d-a945-3633beb3ca0a"]}],"mendeley":{"formattedCitation":"(

Beer & Nohria, 2000. (Vakola, 2014)183 employees of a technological company based in Greece completed a questionnaire. This company was implementing a large scale restructuring change project. Findings: The results show that perceived impact of change mediates the relationship between the pre-change conditions and work attitudes and individual readiness to change. Practical implications: Employees who are confident about their abilities they experience high levels of readiness to change and therefore managers may want to examine this variable when selecting people for jobs entailing change. Creating a climate of trust and enhance positive communication also have an influence on individual readiness to change. Satisfied employees are more ready to change because they weigh the positive consequences of changing as significant and therefore decide to embrace change. Originality/value: This research addressed the need for a more person-oriented approach in the study of change, exploring the concept of individual readiness to change and the perceived benefit of this change. © Emerald Group Publishing Limited.","author":[{"dropping-particle":"","family":"Vakola","given":"Maria","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Leadership and Organization Development Journal","id":"ITEM-1","issue":"3","issued":{"date-parts":[["2014"]]},"title":"What's in there for me? Individual readiness to change and the perceived impact of organizational change","type":"article-journal","volume":"35"},"uris":["http://www.mendeley.com/documents/?uuid=d26652b8-4615-3419-89fd-d2b34d68b60b"]}],"mendeley":{"formattedCitation":"(Vakola, 2014 alleged that big change projects failed owing to a lack of vision, a lack of leaders and management backing, ineffective communication tactics, and strong anti-change sentiment.

Manufacturing and IT service sectors have been through substantial transformations and changes as a result of reasons such as changing political and regulatory environments, rising competition, and technological improvements. As a result, firms have had to swiftly adjust to these developments in order to remain competitive (By et al., 2008)based on personal interests resulting in less efficiency and a waste of resources. Furthermore, the article argues that the audit culture and managerialism have created an environment that encourages opportunistic behaviour such as cronyism, rent-seeking and the rise of organizational psychopaths. This development will arguably not only lead to a waste of resources, change for the sake of change, further centralization, formalization and bureaucratization but, also, to a disheartened and exploited workforce, and political and short-term decision-making. The article proposes ways of managing organizational change in Higher Education successfully by providing a new conceptual change management model and a decision-maker's change manifesto.","author":[{"dropping-particle":"","family":"By","given":"Rune Todnem","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Diefenbach","given":"Thomas","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Klarner","given":"Patricia","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Change Management","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2008"]]},"title":"Getting Organizational Change Right in Public Services: The Case of European Higher Education","type":"article-journal","volume":"8"},"uris":["http://www.mendeley.com/documents/?uuid=e70bd7af-3ba5-3f1d-a47b-a879986fbd87"]}],"mendeley":{"formattedCitation":"(By et al., 2008. Similarly, industries in India have worked hard to gain national and worldwide recognition by following global business trends and implementing economic, social, and technical advancements. These changes were difficult to implement, and companies were to implement them due to various circumstances fully. The most important factors are the "people" and their early impressions and perceptions of the organizational changes. According to the most recent studies, one of the elements influencing organizational transformation effectiveness is how employees inside the company interact with one another (i.e., change beneficiaries) respond to organizational changes, both in the government (Kuipers et al., 2014; Van der Voet et al., 2016) and private sector (Herold et al., 2008; Oreg et al., 2011)organizational change studies have examined leader behaviors during specific change implementations yet have failed to link these to broader leadership theories. In this study, the authors investigate the relationship between transformational and change leadership and followers' commitment to a particular change initiative as a function of the personal impact of the changes. Transformational leadership was found to be more strongly related to followers' change commitment than change-specific leadership practices, especially when the change had significant personal impact. For leaders who were not viewed as

transformational, good change-management practices were found to be associated with higher levels of change commitment. © 2008 American Psychological Associati on.","author":[{"dropping-particle":"","family":"Herold ","given":"David M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","f amily":"Fedor","given":"Donald B.","non-dropping-particle":"","parse-names":false,"suffix":""},{"droppi ng-particle":"","family":"Caldwell","given":"Steven","n on-dropping-particle":"","parse-names":false,"suffix":"" },{"dropping-particle":"","family":"Liu","given":"Yi","n on-dropping-particle":"","parse-names":false,"suffix":""- }],"container-title":"Journal of Applied Psychology","id":"ITEM-1","issue":"2","issued":{"date-parts":[["2008"]]},"title":"The Effects of Transformational and Change Leadership on Employees' Commitment to a Change: A Multilevel Study","type":"article-jou rnal","volume":"93"},"uris":["http://www.mendeley. com/documents/?uuid=43a2fd08-f6f8-3f94-997d-6d7ba228f6c4"]},{"id":"ITEM-2","itemData":{"DOI ":"10.1177/0021886310396550","ISSN":"00218863" ,"abstract":"This study reviews quantitative empirical studies of change recipients' reactions to organizational change. The authors reviewed studies published between 1948 and 2007, out of which 79 met the criteria of being quantitative studies of change recipients' reactions to an organizational change. Through an inductive review, the authors unravel a model of (a.

The present study considers the theory of planned behavior (TPB) given by (Ajzen 1985)Heider, 1958 ; Lewin, 1951. This theory is built on the assumption that an individual's intention for doing a particular activity is fundamental. It is centered on employee intentions, accurately reflecting the elements influencing behavior.

Consequently, firms must nurture their employees' deliberate conduct to overcome their fundamental aversion to change to promote individual preparedness for change. Intentional behavior is a subcategory of motivated behaviors is defined as a "self-initiated and future-oriented action that aims to change and improve the situation or oneself" (Parker et al., 2006 p.636). It has been stated that proactive people can forecast likely future events, take care of their personal and professional development, and be ready for change (Grant & Ashford, 2008) researchers have noted inefficiencies and redundancies in the separate study of different proactive behaviors when their underlying nature, antecedents, processes, and

consequences may be similar. We develop a framework designed to generalize across specific manifestations of proactivity, describing the nature, dimensions, situational antecedents, psychological mechanisms, dispositional moderators, and consequences of proactive behavior. We conclude by discussing implications and recommendations for organizational scholars to take a more proactive approach to constructing, evaluating, and cumulating theory about proactive behavior. Our chapter thus answers recent calls for integrative theory about the general dynamics of proactivity, and fits with current trends emphasizing the increasing importance of proactivity in organizational life. © 2008 Elsevier Ltd. All rights reserved.","author":[{"dropping-part icle":"","family":"Grant","given":"Adam M.","non-dropping-particle":"","parse-names":false,"suffix":""},{ "dropping-particle":"","family":"Ashford","given":"Sus an J.","non-dropping-particle":"","parse-names":false,"s uffix":""}],"container-title":"Research in Organizational Behavior","id":"ITEM-1","issued":{"date-parts":[["2008","1"]]},"page":"3-34","title":"The dynamics of proactivity at work","type":"article-jou rnal","volume":"28"},"uris":["http://www.mendeley. com/documents/?uuid=5c2b742c-68fd-3ed4-bb4b-3f8 caaa619fa"]}],"mendeley":{"formattedCitation":"(Gr ant & Ashford, 2008. Given the increasing relevance of change management, Dalton & Gottlieb (2003) & Mrayyan et al. (2008)yet there is little understanding of this construct. The purpose of this study was to examine readiness; its referents, associated factors and the resulting consequences. Methods. In the course of nursing five clients living with multiple sclerosis over a 7-month period using a Reflective Practice Model, data were systematically gathered using open-ended and then more focused questioning. Data collected during 42 client encounters (28 face-to-face encounters; 14 telephone contacts emphasized the dearth of research on this subject. The authors investigate how individuals having intentional behavior can enhance individual readiness for change in this study. Furthermore, we propose moderating variables, i.e., learning through experimentation, that may play an essential role in the association between intentional behavior and readiness for change.

The first moderating variable, i.e., learning through experimentation defined as the "act of acquiring new or expanding existing knowledge, skills, abilities and other characteristics (KSAO's) through experimenting with new working methods and practices" (Nikolova et al., 2014)

which is applicable across various occupational settings. Based on a comprehensive literature review, we establish four theoretically relevant dimensions of work-based learning, which together constitute the learning potential of the workplace. The psychometric characteristics of our instrument were examined among a sample of Dutch employees working in different organizations (N. =. 1013. (Zammuto & O'Connor, 1992) found that organizations with a learning culture and flexible structure are more likely to successfully execute new changes and adopt new technology than more rigid organizations. Thus, a learning environment supporting and encouraging experimentation is particularly relevant in understanding and enhancing the individual readiness for change.

A thorough understanding of the impact of intentional behavior and learning through experimentation have on the individual readiness for change may be valuable from both the theoretical and practical points of view. From the theoretical point of view, investigating intentional behavior, planfulness, and learning through experimentation as antecedents for change readiness may provide a new and meaningful understanding of the change process. From a practical perspective, present empirical findings can be inferred to structure policies and processes that foster a positive organizational climate for change and raise the probability of successful change initiatives.

Theoretical background and hypothesis development

To investigate the moderating role of learning through experimentation between intentional behavior and readiness for change of working professionals, The present study considers the theory of planned behavior (TPB) given by Ajzen (1991)1985, 1987. This theory is built on the assumption that an individual's intention for doing a certain activity is fundamental. It is centered on employee intentions, which are thought to reflect the elements that influence an employee's behavior. They argue that the more determined someone participates in the action, the more likely it will be performed. Attitudes, subjective standards, and perceived behavioral control contribute to this goal.

The theory of planned behavior was used to build a theoretical framework for our research work and explain the relationship between intentional behavior, learning through experimentation, and readiness for change.

Intentional Behavior and Readiness for change

Schneider et al. (1996)tangible messages to employees,

both about how the organization will change the way it functions and about the new focus of the organization. Effective organization change occurs when new climates and cultures are created and maintained. No single climate or culture is best for achieving sustained change. Different climates and cultures can be equally effective for different organizations, depending on their industry, their markets, and the nature of their work force. However, what people in an organization experience as the climate and believe is the culture ultimately determines whether sustained change is accomplished.","author":[{"dropping-particle":"","family":"Schneider","given":"Benjamin","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Brief","given":"Arthur P.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Guzzo","given":"Richard A.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Organizational Dynamics","id":"ITEM-1","issue":"4","issued":{"date-parts":[["1996"]]},"page":"7-19","title":"Creating a climate and culture for sustainable organizational change","type":"article-journal","volume":"24"},"uris":["http://www.mendeley.com/documents/?uuid=10f37447-b497-39dc-a5ea-ae00c433ba0a"]}],"mendeley":{"formattedCitation":"(Schneider et al., 1996 claimed that "If people do not change, there is no organizational change and that change persists over the long term only when individuals alter their on-the-job behaviors in appropriate ways" (Choi, 2011researchers have focused on various attitudinal constructs that represent employees' attitudes toward organizational change. The constructs, which frequently serve as key variables in these studies, include readiness for change, commitment to change, openness to change, and cynicism about organizational change. These constructs have distinct meanings and emphases and therefore they can provide us with different information regarding employees' evaluation of and concerns about particular change initiatives. In this literature review, the author discusses how the constructs are defined in the organizational change literature and synthesizes the antecedents of each construct. Based on the discussion, it is proposed that the constructs are susceptible to situational variables, and may change over time as individuals' experiences change; therefore, they are better conceptualized as states than as personality traits. ©2011 Wiley Periodicals, Inc.","author":[{"dropping-particle":"","family":"Choi","given":"Myungweon","non-dropping-particle":"","parse-names":false,"suffix":""}],"conta

iner-title":"Human Resource Management","id":"ITEM-1","issue":"4","issued":{"date-parts":[["2011"]]},"title":"Employees' attitudes toward organizational change: A literature review","type":"article-journal","volume":"50"},"uris":["http://www.mendeley.com/documents/?uuid=eda67e8a-39ea-3038-a501-c8e3bcbca7e0"]}],"mendeley":{"formattedCitation":"(Choi, 2011 p.480). A thorough review of past research found that organizational change research has concentrated chiefly on organizational level factors, whereas individual components such as readiness for change have been largely overlooked (Madsen et al., 2005; Vakola & Nikolaou, 2005).

As a result, readiness for change is often accompanied by the implementation of change. This corresponds to Lewin's concept of unfreezing, as shown by the activities of those participating in the change process (Armenakis et al., 1993; Mrayyan et al., 2008). They defined change readiness as an individual's or an organization's subjective feelings or perceived ability to adapt to change. (Holt et al. (2007) defined readiness for change as "reflects the extent to which an individual or individuals are cognitively and emotionally inclined to accept, embrace, and adopt a particular plan to alter the status quo purposefully" (p. 235). As a result, intentional behavior is critical to the proper execution and implementation of any change. According to scholars and practitioners, individuals with intentional behavior are change-oriented and ready to question the status quo to help their company thrive (Grant & Ashford, 2008; Staw & Boettger, 1990)researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.","author":[{"dropping-particle":"","family":"Staw","given":"B. M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Boettger","given":"R. D.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Academy of Management Journal","id":"ITEM-1","issue":"3","issued":{"date-parts":[["1990"]]},"title":"TASK REVISION: A NEGLECTED FORM OF WORK PERFORMANCE.","type":"article-journal","volume":"33"},"uris":["http://www.mendeley.com/documents/?uuid=0a213ff7-0865-3bcf-826d-af738658fc29"]},{"id":"ITEM-2","itemData":{"DOI":"10.1016/j.riob.2008.04.002","ISSN":"01913085","abstract":"As the organizational literature on specific proactive behaviors grows, researchers have noted inefficiencies and redundancies in the separate study of different proactive behaviors when their underlying nature, antecedents, processes, and consequences may be similar. We develop a framework designed to generalize across specific manifestations of proactivity, describing the nature, dimensions, situational antecedents, psychological mechanisms, dispositional moderators, and consequences of proactive behavior. We conclude by discussing implications and recommendations for organizational scholars to take a more proactive approach to constructing, evaluating, and cumulating theory about proactive behavior. Our chapter thus answers recent calls for integrative theory about the general dynamics of proactivity, and fits with current trends emphasizing the increasing importance of proactivity in organizational life. © 2008 Elsevier Ltd. All rights reserved.","author":[{"dropping-particle":"","family":"Grant","given":"Adam M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Ashford","given":"Susan J.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Research in Organizational Behavior","id":"ITEM-2","issued":{"date-parts":[["2008","1"]]},"page":"3-34","title":"The dynamics of proactivity at work","type":"article-journal","volume":"28"},"uris":["http://www.mendeley.com/documents/?uuid=5c2b742c-68fd-3ed4-bb4b-3f8caaa619fa"]}],"mendeley":{"formattedCitation":"(Grant & Ashford, 2008; Staw & Boettger, 1990. Furthermore, in order to remain competitive, organizations and businesses must disrupt the status quo (Burnes, 2004; Frohman, 1997). Furthermore, intentional behavior has been linked to various favorable consequences, such as improved job performance, creativity, risk-taking ability, and organizational productivity (Frese & Fay, 2001; Tornau & Frese, 2013)proactive personality, taking charge, and voice-was cleaning up the number and overlap of proactivity constructs and examining their construct validity. We provide a unifying framework for proactivity theory and a nomological net. We studied 163 independent samples (N= 36,079.

Additionally, intentional behavior seeks to develop and promote new change initiatives, improving organizational performance (Belschak et al., 2010). Proactive behavior on the part of change beneficiaries may be crucial for change success in unpredictable change situations (Oreg

et al., 2014). Kelman (2005) argued that employees that engage in change-supportive behaviors such as being actively involved in day-to-day operations, questioning the status quo, experimenting, and taking proactive measures favorably affect organizational processes. Intentional behavior is critical for organizational innovation and transformation (Kickul & Gundry, 2002), facilitating the idea generation-to-implementation transition (Rank et al., 2004).

A proactive individual seeks to change himself, his co-workers, or the work environment to adapt to changing situations. Proactive personnel, for example, may see design issues early in the implementation phase and provide inventive solutions. As a result, increased proactivity alleviates unneeded effort and enables organizational transformation. As a result, intentional behavior is likely to have an effect on an individual's readiness for change, as outlined in the following hypothesis.

Hypothesis 1: Intentional behavior is positively related to readiness for change of employees.

Moderating role of Learning through Experimentation

Promoting individual learning at work has emerged as a critical priority for businesses seeking to implement changes (Nikolova et al., 2014)which is applicable across various occupational settings. Based on a comprehensive literature review, we establish four theoretically relevant dimensions of work-based learning, which together constitute the learning potential of the workplace. The psychometric characteristics of our instrument were examined among a sample of Dutch employees working in different organizations (N. =. 1013 effectively. Learning through experimentation refers to "deliberate and purposeful actions to gain knowledge about the environment or validate existing knowledge through small tests in relatively controlled situations" (Bingham & Davis, 2012)trial-and-error learning, vicarious learning, experimental learning, and improvisational learning. Kolb (1984)at the height of the dot-com boom, business leaders posed for the covers of \"Time,\" \"BusinessWeek,\" and the \"Economist\" with the aplomb and confidence of rock stars. These were a different breed from their counterparts of just ten or 20 years before, who shunned the press and whose comments were carefully crafted by corporate PR departments. Such love of the limelight often stems from what Freud called a narcissistic personality, says psychoanalyst and anthropologist Michael Maccoby in this HBR classic first published in the January-February 2000

issue. Narcissists are good for companies in extraordinary times, those that need people with the passion and daring to take them in new directions. But narcissists can also lead companies into disaster by refusing to listen to the advice and warnings of their managers. It's not always true, as Andy Grove famously put it, that only the paranoid survive. Most business advice is focused on the more analytic personality that Freud labeled obsessive. But recommendations about creating teamwork and being more receptive to subordinates will not resonate with narcissists. They didn't get where they are by listening to others, so why should they listen to anyone when they're at the top of their game? Narcissists who want to overcome the limits of their personalities must work as hard at that as they do at business success. One solution is to find a trusted sidekick, who can point out the operational requirements of the narcissistic leader's often overly grandiose vision and keep him rooted in reality. Another is to take a leap of faith and go into psychoanalysis, which can give these leaders the tools to overcome their sometimes fatal character flaws.","author":[{"dropping-particle":"","family":"Kolb","given":"David A","non-dropping-particle":"","parse-names":false,"suffix":""}]," container-title":"Prentice Hall, Inc.","id":"ITEM-1","issu e":"1984","issued":{"date-parts":[["1984"]]},"page":"20-38","title":"Experiential Learning: Experience as The Source of Learning and Development","type":"article-journal","volume":"8"},"uris":["http://www.mendeley. com/documents/?uuid=c0b39e46-27d4-3cbc-9ed9-c1cc d2d814ea"]}],"mendeley":{"formattedCitation":"(Kolb, 1984 identified experimentation and learning are the two critical elements of workplace learning.

(Koning et al., 2019) showed that experimenting benefits managers and entrepreneurs by allowing them to test new ideas, learn, and iterate. When participants narrate their experiments as narratives, they engage in a collaborative process of exploring uncertainty. (Kerr et al., 2014) extremely skewed, and unknowable until an investment is made. At a macro level, experimentation by new firms underlies the Schumpeterian notion of creative destruction. However, at a micro level, investment and continuation decisions are not always made in a competitive Darwinian contest. Instead, a few investors make decisions that are impacted by incentive, agency, and coordination problems, often before a new idea even has a chance to compete in a market. We contend that costs and constraints on the ability to experiment alter the type of organizational form surrounding innovation and influence

when innovation is more likely to occur. These factors not only govern how much experimentation is undertaken in the economy, but also the trajectory of experimentation, with potentially very deep economic consequences.", "author":[{"dropping-particle":"","family":"Kerr","given":"William R.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Nanda","given":"Ramana","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Rhodes-Kropf","given":"Matthew","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Economic Perspectives","id":"ITEM-1","issue":"3","issued":{"date-parts":[["2014"]]},"title":"Entrepreneurship as experimentation","type":"article-journal","volume":"28"},"uris":["http://www.mendeley.com/documents/?uuid=86285d44-181f-370e-b77a-0e71b1eb31b6"]}],"mendeley":{"formattedCitation":"(Kerr et al., 2014 recognized that experimentation is the most effective learning method and finally succeeding in a dynamic and unpredictable world. Similarly, Van dye et al. (2005) argued that an organization capable of dealing with faults rather than avoiding them enables employees to learn from their mistakes and strengthens their capacity for change. Likewise, Weiner (2009)the scientific basis for it is limited. Unlike individual readiness for change, organizational readiness for change has not been subject to extensive theoretical development or empirical study. In this article, I conceptually define organizational readiness for change and develop a theory of its determinants and outcomes. I focus on the organizational level of analysis because many promising approaches to improving healthcare delivery entail collective behavior change in the form of systems redesign - that is, multiple, simultaneous changes in staffing, work flow, decision making, communication, and reward systems. Discussion. Organizational readiness for change is a multi-level, multi-faceted construct. As an organization-level construct, readiness for change refers to organizational members' shared resolve to implement a change (change commitment claimed that an organization's culture should promote and appreciate experimentation to increase individual preparedness for change.

In high-technology sectors, where technical breakthroughs are the accepted norm, and there is an ongoing need for experimentation, learning, and innovation, change-oriented personnel with deliberate behaviors, become a crucial resource for organizational performance (Kraus et al., 2012; Wiklund & Shepherd, 2005). Prior research, from a behavioral viewpoint (Escrig-Tena et al., 2018; Unsworth & Parker, 2008)social media is regarded as a game changer and plays a role in the development of the contact center industry's future. Meanwhile, it mentions that Teleperformance is an international company that provides outsourced services for customer experience management, in which the largest operations are based in the Philippines.", "author":[{"dropping-particle":"","family":"Unsworth","given":"Kerrie L.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Parker","given":"Sharon K.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"The New Workplace","id":"ITEM-1","issued":{"date-parts":[["2008"]]},"title":"Proactivity and Innovation: Promoting a New Workforce for the New Workplace","type":"chapter"},"uris":["http://www.mendeley.com/documents/?uuid=94cf393f-9780-359a-be32-25db58326bd8"]},{"id":"ITEM-2","itemData":{"DOI":"10.1016/j.ijpe.2018.03.011","ISSN":"09255273","abstract":"The extant literature has reported mixed results on the relationship between Quality Management (QM, demonstrates that intentional behavior may have a significant role in facilitating experimentation. Employees' self-starting and change-oriented actions characterize this behavior, making it easier to identify flaws and make modifications to improve the performance of products and processes (Anderson et al., 2014). Similarly, (Grant & Ashford, 2008)researchers have noted inefficiencies and redundancies in the separate study of different proactive behaviors when their underlying nature, antecedents, processes, and consequences may be similar. We develop a framework designed to generalize across specific manifestations of proactivity, describing the nature, dimensions, situational antecedents, psychological mechanisms, dispositional moderators, and consequences of proactive behavior. We conclude by discussing implications and recommendations for organizational scholars to take a more proactive approach to constructing, evaluating, and cumulating theory about proactive behavior. Our chapter thus answers recent calls for integrative theory about the general dynamics of proactivity, and fits with current trends emphasizing the increasing importance of proactivity in organizational life. © 2008 Elsevier Ltd. All rights reserved.", "author":[{"dropping-part

icle":"","family":"Grant","given":"Adam M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Ashford","given":"Susan J.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Research in Organizational Behavior","id":"ITEM-1","issued":{"date-parts":[["2008","1"]]},"page":"3-34","title":"The dynamics of proactivity at work","type":"article-journal","volume":"28"},"uris":["http://www.mendeley.com/documents/?uuid=5c2b742c-68fd-3ed4-bb4b-3f8caaa619fa"]}],"mendeley":{"formattedCitation":"(Grant & Ashford, 2008, Individuals who participate in intentional behaviors and actions are more inclined to experiment, promote, and lead change. Companies often rely on this kind of people to drive innovation.

Additionally, companies need a framework for human resource development that emphasizes learning to boost individuals' readiness for change (Lombardo & Eichinger, 2000)organizations need to find and nurture those who are most facile in dealing with it. Identifying those who can learn to behave in new ways requires a different measurement strategy from those often employed, one that looks at the characteristics of the learning agile. In this article, we explain some initial steps toward identifying the women and men with the most potential to lead, regardless of what the future may hold for them. As indicated by a measure of learning from experience, those with the highest potential tend to be interested in first-time challenges, are eager to learn, and can get results under tough conditions. © 2000 John Wiley & Sons Inc.","author":[{"dropping-particle":"","family":"Lombardo","given":"Michael M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Eichinger","given":"Robert W.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Human Resource Management","id":"ITEM-1","issue":"4","issued":{"date-parts":[["2000"]]},"title":"High potentials as high learners","type":"article-journal","volume":"39"},"uris":["http://www.mendeley.com/documents/?uuid=0bb3df23-41dd-34ab-9ab0-0f6492b05dae"]}],"mendeley":{"formattedCitation":"(Lombardo & Eichinger, 2000. (Dul & Ceylan, 2014)very few studies address the effect of a creativity-supporting work environment on product innovation performance at firm level, and the results are inconsistent. This paper examines the relationship between a firm's creativity-supporting work environment and a firm's product innovation performance in a sample

of 103 firms. For measuring a firm's creativity-supporting work environment, a comprehensive and creativity-focused framework is used. The framework consists of 9 social-organizational and 12 physical work environment characteristics that are likely to enhance employee creativity. These characteristics contribute to the firm's overall work environment that supports creativity. The firm's product innovation performance is defined by two distinct concepts: new product productivity (NP productivity Individuals that do well in an experimental environment have a growth mindset and are self-motivated to generate relevant ideas for innovation. As a result, acquiring new abilities promotes worker agility and empowers individuals to overcome unanticipated obstacles confidently (Sherehiy & Karwowski, 2014) little research has been done on the attributes and characteristics of workforce agility. Even less is known about what organization characteristics are conducive to the agile performance of employees. The main goal of this study was to explore the effect of agile strategies on work organization and employees' performance. A total of 41 managers, 82 office workers, and 52 production workers from six small manufacturing companies participated in the study. Three questionnaires, including Agility Strategy Scale, Work Organization Scale, and Workforce Agility Scale, were used for the purpose of data collection. The results support a hypothesized relationship between management strategies focused on agility development, work characteristics, and workforce agility. The results also reveal that autonomy at work is one of the most important predictors of workforce agility. A combination of job demands and job uncertainty had a significant effect on workforce agility. The study also suggests that developing strong cooperative relationships within an organization and with customers and suppliers promotes workforce agility in small manufacturing enterprises. Relevance to industry: This paper investigated organizational practices that were conducive to implementing agile management and strategies in small manufacturing enterprises. The study results can be used for optimizing work demands and conditions in the workplace environments that require constant change and adaptation. © 2014 Elsevier B.V.","author":[{"dropping-particle":"","family":"Sherehiy","given":"Bohdana","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Karwowski","given":"Waldemar","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"International Journal of Industrial

Ergonomics","id":"ITEM-1","issue":"3","issued":{"date-parts":[["2014"]]},"title":"The relationship between work organization and workforce agility in small manufacturing enterprises","type":"article-journal", "volume":"44"},"uris":["http://www.mendeley.com/documents/?uuid=da4300b7-1193-35ee-8dda-06ae9c0cf3bc"]}],"mendeley":{"formattedCitation":"(Shereh iy & Karwowski, 2014.

(Zammuto & O'Connor (1992) established that organizations with flexible structures and supportive climates were more conducive to the successful and practical implementation of new manufacturing technologies than those with more mechanical systems and environments characterized by inflexibility and rigidity. In light of the above considerations, this study found that employees who feel their companies are in charge of developing and supporting experimentation and creative projects are more likely to have positive views about organizational change. To our knowledge, the impact of learning through experimenting as a predictor of change readiness has not yet been investigated. Consequently, it can be concluded that there is a significant gap in the research on the influence of intentional behavior on learning through experimentation and also the impact of learning through experimentation on readiness for change. Hence, we hypothesize;

Hypothesis 2: *Learning through experimentation will moderate the relationship between intentional behavior and readiness for change such that this relationship will be stronger when learning through experimentation is high.*

Insert Figure 1 Here

Methods

Sample

A sample of full-time employees working in the I.T. service and Manufacturing industry in North India participated in the study. A survey questionnaire was sent to a random sample of 535 participants and assured their confidentiality through the mail. Out of 535 participants, we finally obtained 271 final responses resulting in a response rate of 50.65%. Among total (N=271) respondents, 164 were males resulting in 60.5 percent, and 107 (39.5 percent) were female respondents (see Table 1, Demographic characteristics of respondents). Overall, 81.5 percent of total respondents were between 21-35 years of age, and 65.3 had postgraduate degrees (see Table 1). A total of 211 out of 270 respondents were working in private organizations. Thus, our study sample was adequately representative to achieve the aim of this research.

Insert Table 1 Here

Measures

Intentional behavior

Intentional Behavior, a sub-scale (a four-item instrument) developed and validated by (Robitschek et al., 2012), was taken to measure intentional behavior. A sample item for intentional behavior is "I take every opportunity to grow as it comes up". The Likert scale with a seven-point response scale was taken under this study ("strongly disagree" =1, "strongly agree" =7), and high scores indicate higher intentional behavior. This scale's internal consistency (alpha coefficient) was recorded at 0.89 for this study.

Learning through experimentation

Learning through experimentation was evaluated with a scale comprising three items developed by (Nikolova et al., 2014)which is applicable across various occupational settings. Based on a comprehensive literature review, we establish four theoretically relevant dimensions of work-based learning, which together constitute the learning potential of the workplace. The psychometric characteristics of our instrument were examined among a sample of Dutch employees working in different organizations (N. =. 1013. A sample item for learning through experimentation is "In my job, I can use different work methods even if that does not deliver any useful results". The Likert scale with a seven-point response scale was taken under this study ("strongly disagree" =1, "strongly agree" =7), and high scores indicate strong learning through experimentation. The internal consistency (alpha coefficients) was 0.82 for Indian samples.

Readiness for change

Readiness for change a sub-scale (a four-item instrument) developed and validated by (Robitschek et al., 2012) was taken to measure readiness for change. A sample item for readiness for change is "I can tell when I am ready to make specific changes in myself". The Likert scale with a seven-point response scale was taken under this study ("strongly disagree" =1, "strongly agree" =7), and high scores indicate higher readiness for change. This scale's internal consistency (alpha coefficient) was recorded at 0.88 for this study.

Control variables

Gender, age, education, and work experience were added as control variables. Prior studies have indicated that such age and work experience are negatively associated with readiness for change (Wiersema & Bantel, 1992).

Common method bias

Harman's single factor test was employed to assess and check for common method bias, as the data for studied variables were collected from the same source. Unrotated factor analyses were tested in SPSS software version 27.0. The maximum variance explained by a single factor was 43%, lower than the recommended criterion of 50% (Podsakoff et al., 2003). Findings demonstrated that common method bias (CMB) was not an issue in our research. These results are then checked against a correlation matrix to determine whether correlations are more significant than 0.9 (Pavlou et al., 2007). All correlations below the threshold value (see Table 2) confirm the findings that common method bias was not an issue in the current investigation.

Analytical strategy

Firstly, confirmatory factor analysis followed by structural equation modeling was formulated using IBM SPSS AMOS 27. We computed χ2/degree of freedom ratio, the comparative fit index (CFI), and root mean square error of approximation (RMSEA) to evaluate the model fit. A good model fit may be determined when the CFI value is higher than 0.90 and the SRMR value is less than 0.10 (Hair Jr et al., 2010). Hayes PROCESS macro (Model 1) (Hayes, 2013) in SPSS software version was also put into place along with bootstrap 5000 resamples to analyze the non-normality of data typically obtained after applying the Likert scale.

Results

Descriptive statistics

Table 2 demonstrated the descriptive statistics, such as mean, standard deviation, inter-item correlation, square of correlation among variables, and average variance extracted. It has been clearly shown that, there is a significant correlation between intentional behavior and readiness for change (r = 0.634; p < 0.01), intentional behavior and learning through experimentation (r = 0.259; p < 0.01), and learning through experimentation and readiness for change (r = 0.282; p < 0.01). All three study variables' mean and standard and deviation are ranged from 5.09 to 5.98 and 0.95 to 1.41, respectively. Table 2 also showed AVE (Average variance extracted)

values bold diagonally ranged from 0.66 to 0.76. These values are greater than 0.50 (Fornell & Larcker, 1981) in addition to the known problems related to sample size and power, is that it may indicate an increasing correspondence between the hypothesized model and the observed data as both the measurement properties and the relationship between constructs decline. Further, and contrary to common assertion, the risk of making a Type II error can be substantial even when the sample size is large. Moreover, the present testing methods are unable to assess a model's explanatory power. To overcome these problems, the authors develop and apply a testing system based on measures of shared variance within the structural model, measurement model, and overall model.","author":[{"dropping-particle":"","family":"Fornell","given":"Claes","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Larcker","given":"David F.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Marketing Research","id":"ITEM-1","issue":"1","issued":{"date-parts":[["1981","2"]]},"page":"39","title":"Evaluating Structural Equation Models with Unobservable Variables and Measurement Error","type":"article-journal","volume":"18"},"uris":["http://www.mendeley.com/documents/?uuid=3c59e74b-c29c-3ccf-b0fc-4e5ebcfde398"]}],"mendeley":{"formattedCitation":"(Fornell & Larcker, 1981 to prove the convergent validity. Furthermore, these values are higher than a square of inter-item correlations of the studied variables (Hair Jr et al., 2010).

Insert Table 2 Here

Table 3 represented the items' descriptions and details based on three study variables, i.e., intentional behavior, learning through experimentation, and readiness for change. The standardized factor loading of each item, alpha coefficients, t-values, and composite reliability are described in table 3. The alpha coefficients for all three variables are ranged from 0.82 to 0.89. The cut-off measure for the Cronbach alpha is 0.70 (Hussain et al., 2019). The standardized factor loading for all the 11 items are ranged from 0.72 to 0.91. These values proved the convergent validity because they are higher than the value of 0.50 (Hair Jr et al., 2010).

Insert Table 3 Here

Confirmatory factor analysis

A Confirmatory Factor Analysis (CFA) was carried out to analyze the data. The latent factors were measured

and analyzed for the model fit for the study. A dimension level CFA was carried out. The three latent factors intentional behavior, learning through experimentation, and readiness for change model fitted the data well with values, $\chi2[(df=41), N =271)] = 75.546$, $\chi2/df = 1.84$ $p < .001$; CFI=0.998; SRMR=0.046; RMSEA=0.056; GFI=0.996. Following that, an alternative model was compared with the original measurement model, which constrained conceptually independent constructs to be identical to assess construct independence (discriminant validity). As per the chi-square difference test, the baseline measurement model fit was considerably better than the alternative model.

Following that, we described a CFA model that loaded all manifest indications onto a single factor and compared it to the baseline measurement model. Results from the single-factor model [$\chi2$ (df = 44) =1041.403, $\chi2/df$ = 23.66 p<.05, CFI=0.93; SRMR=0.156; RMSEA= 0.290] and single-factor model was a substantially poor fit as compared to the original measurement model as indicated by the sequential chi-square difference test [$\Delta \chi2$ (3) = 965.857, p<.05]. Based on the results of these analyses (given in Table2), we determined that method variance was not a significant issue in this investigation.

Insert Table 4 Here

Hypothesis testing

The hypotheses formulated were tested employing SEM in IBM SPSS AMOS 27. The independent variables were mean-centred for moderation analysis to avoid potential multicollinearity issues. Intentional behavior showed a significant association with readiness for change (β = 0.658, S.E = 0.052, t = 12.618 p < 0.001) supporting Hypothesis 1. Learning through experimentation also showed a significant association with readiness for change (β = 0.083, S.E. = 0.034, t = 2.426 p < 0.05) (see Table 5).

Insert Table 5 Here

Furthermore, we employed (Hayes, 2013) PROCESS macro model-1 to investigate moderating hypothesis 2. Bootstrapping with 5,000 random resample with 95% confidence intervals was also performed to test the moderating role of learning through experimentation in the relationship between intentional behavior and readiness for change. Additionally, Hayes PROCESS macro also aids in examining the relationship between independent and dependent variables at higher and lower levels of the moderator (Learning through experimentation) with plus and minus one standard deviation (+1SD, mean, -1SD).

The data were imputed from AMOS 27 to conduct the analysis. The results of the analysis verified the results obtained from AMOS 27. Table 6 displays the regression analysis results in PROCESS macro, with unstandardized path coefficients. The interaction effect of intentional behavior and learning through experimentation was also significant (β = 0.066, S.E. = 0.032, t= 2.035, p < 0.05), supporting Hypothesis 2. Furthermore, there is an increase of 9% (0.09) in the hypothesized model (Change in R-square, see table 5), after adding the moderating variable, i.e., learning through experimentation. These results indicated that learning through experimentation can play a pivotal role in enhancing readiness for change. The analysis findings, accompanying unstandardized path coefficients, are displayed in Figure 2.

Insert Table 6 Here

Insert Figure 2 Here

Table 7. also showed the bootstrap results for the regression model parameters, representing the significant moderating effect of learning through experimentation on the relationship between intentional behavior and readiness for change. Zero is not falling between the upper and lower-level confidence interval. The results also exhibited that learning through experimentation moderated the relationship between independent and dependent variables. At a higher moderator level (learning through experimentation), the relationship between intentional behavior and readiness for change is stronger and more positive. Table 6. represents the confidence interval values and estimates at lower and higher levels of learning through experimentation as a moderator. Figure 3. displays the interaction effect of intentional behavior and learning through experimentation on readiness for change at low and high levels of learning through experimentation with minus and one standard deviation following the recommendations of (Aiken & West, 1991). Thus, Hypothesis 2 is supported.

Insert Table 7 Here

Discussion

The present research findings showed that intentional behavior and learning through experimentation at the workplace have a significant association with readiness for change. Furthermore, the moderation role of learning through experimentation was significant. The detailed findings are presented below.

Firstly, results indicated that individuals exhibited more readiness for change when they had intentional behavior and learning through experimentation. The present research findings corroborated with past research findings (Liang & Gong, 2013; Segarra-Ciprés et al., 2019). Proactive behavior was observed to play a pivotal role in enhancing readiness for change. As proactive individuals show self-initiated behavior, they continuously strive for personal and professional growth opportunities.

Furthermore, with respect to the moderation effect, individuals having higher intentional behavior, are likely to have higher readiness for change (see Figure 3). The low intentional behavior exhibited low readiness for change, irrespective of the low learning through experimentation; however, the influence of intentional behavior was stronger for learning through experimentation. Therefore, these findings indicate that learning through experimentation can play a pivotal role in enhancing the individual readiness for change. It has been observed that when an organization lacks an appropriate system supporting learning through experimentation of employees, influence of intentional behavior would be less stronger to enhance employees' readiness for change.

Insert Figure 3 Here

With respect to the theoretical implications, this study explored the relationship between intentional behavior, learning culture, and change readiness research. As past research findings have concluded (Frese & Fay, 2001; Grant & Ashford, 2008; Tornau & Frese, 2013) researchers have noted inefficiencies and redundancies in the separate study of different proactive behaviors when their underlying nature, antecedents, processes, and consequences may be similar. We develop a framework designed to generalize across specific manifestations of proactivity, describing the nature, dimensions, situational antecedents, psychological mechanisms, dispositional moderators, and consequences of proactive behavior. We conclude by discussing implications and recommendations for organizational scholars to take a more proactive approach to constructing, evaluating, and cumulating theory about proactive behavior. Our chapter thus answers recent calls for integrative theory about the general dynamics of proactivity, and fits with current trends emphasizing the increasing importance of proactivity in organizational life. © 2008 Elsevier Ltd. All rights reserved.","author":[{"dropping-particle":"","family":"Grant","given":"Adam M.","non-

dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Ashford","given":"Susan J.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Research in Organizational Behavior","id":"ITEM-1","issued":{"date-parts":[["2008","1"]]},"page":"3-34","title":"The dynamics of proactivity at work","type":"article-journal","volume":"28"},"uris":["http://www.mendeley.com/documents/?uuid=5c2b742c-68fd-3ed4-bb4b-3f8caaa619fa"]},{"id":"ITEM-2","itemData":{"DOI":"10.1016/S0191-3085(01, we also found intentional behavior plays an important role in enhancing individual readiness for change. Although many studies have explored the relationship between intentional behavior and readiness for change, few scholars have investigated the moderation role of learning culture, but this study explored the moderating role of learning through experimentation for the first time. The present study emphasizes the pivotal role of learning through experimentation on the relationship between intentional behavior and readiness for change.

It is hard to build a learning organisation if the leaders of the organisation aren't supportive. Managers can help and support their employees to do trial-and-error, experiment, and look for new methods and procedures to do the same task by establishing a supportive experimentation learning system. In particular, change practitioners, organizational development professionals can help managers by building an experimentation supporting environment to enhance the readiness for change. The practical implications for change agents and OD practitioners who in charge of bringing change can devise appropriate methods and strategies for the purpose of enhancing readiness for change of employees are discussed below.

A key suggestion is that a system for experimentation and learning can significantly influence individuals' readiness for change. That is Yang et al. (2004) suggested, change agents and OD practitioners and professionals can play an important role in building a learning culture. For example, they can help organizations build a culture of learning through experimentation where employees can experiment and adopt new methods, and procedures, where they are given time and support for doing their work more efficiently. In addition to that, change agents and OD practitioners and professionals can provide opportunities to their people to take risk and to finding solutions to their work or task-related issues and problems.

Limitation and Future Research Direction

A limitation of this study is the use of a cross-sectional design that restricts our ability to draw causal inferences. To alleviate this, all efforts were made to base the hypothesized relationships in the model on sound logic and theoretical justifications. More rigorous causal inferences may be drawn through longitudinal research design. Another limitation is that owing to the lack of a reliable sampling frame, non-probability sampling techniques were used, which limits the generalizability of the results.

Furthermore, as the current study has been conducted on employees working in India, mainly focusing on the manufacturing and IT industry, its results cannot be generalized for people working in other sectors and having varied cultural backgrounds. Longitudinal studies with varied cultural settings and backgrounds can be replicated to extend the present research scope

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Table 1 Demographic characteristics of the respondents

Demographic Characteristics	N	Frequency (%)
Gender		
Male	164	60.5
Female	107	39.5
Total	271	100.00
Age (years)		
21-35	221	81.5
36-50	46	17.0
51-65	4	1.5
Total	271	100.00
Education		
Diploma	1	0.4
Graduate	47	17.3
Post Graduate	177	65.3
Ph.D.	46	17.0
Total	271	100.00
Job Position		
Senior-level	45	16.7
Middle level	136	50.2
Junior level	90	33.2
Total	271	100.00
Experience		
1-10 years	213	78.6
11-20 years	49	18.1
More than 20 years	9	3.3
Total	271	100.00
Organization status		
Private	211	77.9
Public	60	22.1
Total	271	100.00

Table 2 Descriptive Statistics

S.n.	Factors	Mean	S.D.	Correlations 1	2	3	4	5	6	7	8	9
1	Gender	---	---	---								
2	Age	.20	.436	.040								
3	Education	1.99	.599	-.129*	.264**							
4	Job position	1.17	.687	-.091	-.247**	-.049						
5	Experience	.25	.520	.071	.793**	.128*	-.231**					
6	Organization status	.22	.416	.049	.001	.144*	.169**	-.001				
7	Intentional Behavior	5.98	0.95	.025	.036	-.021	-.075	.108	-.029	**0.762**	0.067	0.401

| 8 | Learning through Experimentation | 5.09 | 1.41 | .133* | .033 | -.012 | -.169** | .103 | .020 | 0.259** | **0.665** | 0.079 |
| 9 | Readiness for Change | 5.63 | .99 | .087 | .007 | -.078 | -.043 | .059 | -.043 | 0.634** | 0.282** | **0.729** |

Note. M=Mean; S=Standard Deviation. N=271; CR = Composite reliability of the measurement model; and α= Cronbach alpha. The average variance extracted of each construct (No. 7, 8, 9) is represented in **bold** along the diagonal. Values above the diagonal (i.e., AVE) are square of correlations; Values below the diagonal represent inter-construct correlations.

* $p< 0.05$ (2-tailed). ** $p< 0.01$ (2-tailed).

Table 3 Items Description Results

Variable	No. of items	Alpha coefficient	Items' short name	Factor Loadings	Standard Error	t-value	Composite Reliability
Intentional Behavior	4	0.89	INT1	0.839			0.93
			INT2	0.902	0.044	24.611***	
			INT3	0.866	0.039	26.205***	
			INT4	0.879	0.036	28.180***	
Learning through Experimentation	3	0.82	LEXP1	0.896			0.86
			LEXP2	0.716	0.048	16.774***	
			LEXP3	0.825	0.061	15.738***	
Readiness for Change	4	0.88	READY1	0.753			0.92
			READY2	0.871	0.041	28.517***	
			READY3	0.909	0.040	29.883***	
			READY4	0.874	0.039	29.923***	

Note: α= Cronbach alpha CR = Composite reliability of the measurement model; SE: Standard Error; Significance: *** $p<0.001$ (2-tailed)

TABLE 4: Measurement and single-factor model fit statistics

	χ2	df (Degree of freedom)	χ2/df	CFI	SRMR	RMSEA	GFI	TLI
Measurement Model	75.546	41.00	**1.84**	0.998	0.046	0.056	0.996	0.997
Single Factor Model	1041.403	44.00	23.66	0.931	0.290	0.156	0.948	0.914
χ2 Difference test	**965.857**	**3**						

Note: CFI =Confirmatory Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standard Root Mean Square Residual. TLI = Trucker-Lewis Index

Model Summary R² = .43; f = 66.491	Readiness for change (Y); 95% CL					
	ß	*SE*	*t*	*p*	*LLCI*	*ULC*
Constant	5.612	0.048	117.880	0.000	5.518	5.706
Intentional Behavior (X)	0.658	0.052	12.618	0.000	0.555	0.760
Learning through Experimentation (M)	0.083	0.034	2.426	0.016	0.100	0.180

Interaction (X*M)	0.066	0.032	2.035	0.025	0.010	0.130

Model Summary

	R	R²	F	df1	df2	p
	0.655	0.429	66.491	3	267	0.000

R² increase due to interaction

	ΔR²	F	df1	df2	p
The interaction term (X*M)	0.09	4.140	1.000	0.267	0.025

Table 5: Moderation Analysis of Learning through Experimentation on the relationship between intentional behavior and readiness for change

Learning through Experimentation	Effect	SE	t	p	LLCI	ULCI
-1 S. D (-1.408)	0.565	0.059	9.637	0.000	0.449	0.680
Mean (0)	0.657	0.052	12.578	0.000	0.554	0.759
+1 S. D (+1.408)	0.749	0.079	9.507	0.000	0.594	0.904

Table 6: Conditional effect of Intentional behavior on readiness for change of the moderator (learning through experimentation)

Table 7: Bootstrap results for Regression Model Parameters

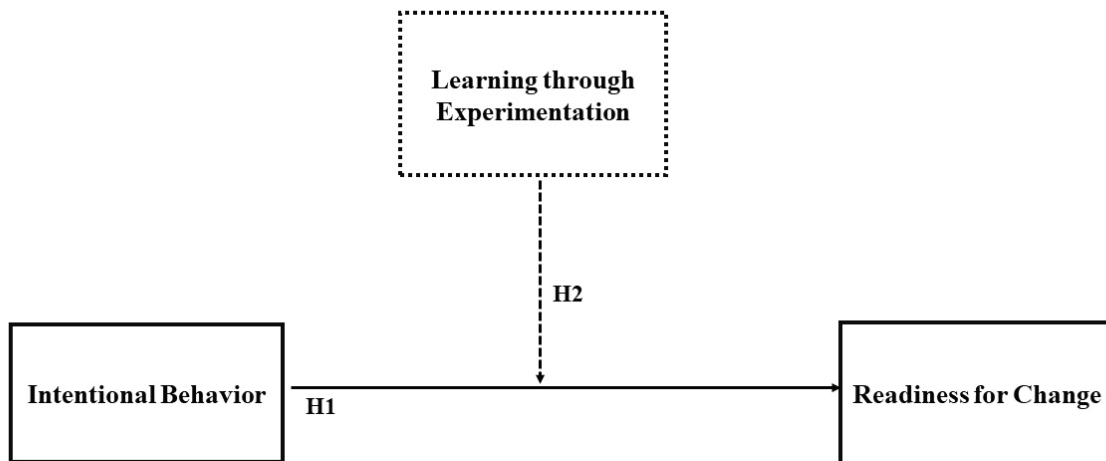|	Readiness for change (Y)				
	Coefficients	Boot Mean	Boot S.E.	Boot LLCI	Boot ULCI
Constant	5.612	5.613	0.050	5.515	5.713
Intentional Behavior	0.658	.656	0.054	0.550	0.760
Learning through experimentation	0.083	.081	0.041	0.090	0.167
Interaction (Intentional behavior*Learning through experimentation	0.066	.070	0.041	0.010	0.160

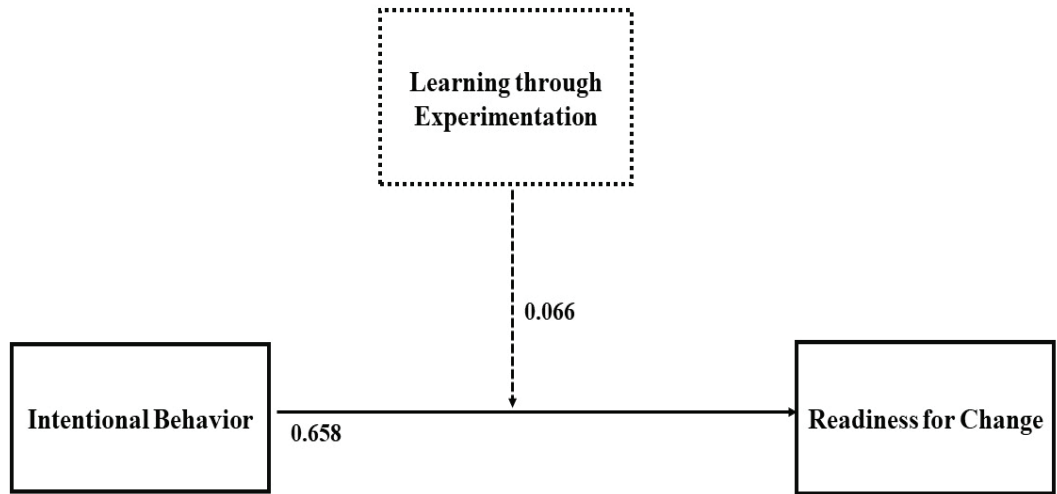**Figure 1:** Proposed Hypothesized Model

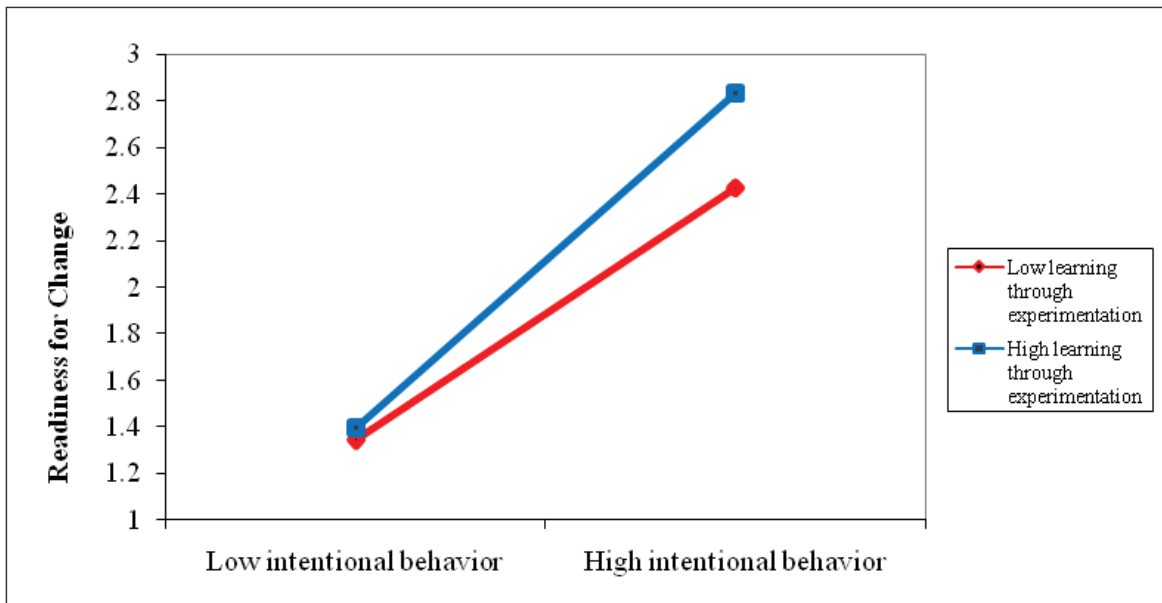**Figure 2:** Structural model with unstandardized path coefficients

Figure 3. A moderation effect of learning through experimentation on the relationship between intentional behavior and readiness for change.

"Impact of Participative Strategic Planning processes on Learning at Work: The Moderation Role of Participative Management Style"

Nilesh Kumar Tiwari

Research Scholar, Department of Management Studies
Indian Institute of Technology, Roorkee, India
Nk_tiwari@bm.iitr.ac.in

Prof. (Dr.) Santosh Rangnekar

Professor, Department of Management Studies
Indian Institute of Technology, Roorkee, India
santosh.rangnekar@ms.iitr.ac.in

Abstract

For decades, participative management and learning at work have been prominent themes of organisational restructuring. This paper aims to relate participative strategic planning to learning at work in India's public and private sector organisations. Drawing on the resource-based and organisational learning theories, we hypothesised that the relationship between participative strategic planning and learning at work is positive. Moreover, participative management has moderated the relationship between participative strategic planning and learning at work. The result of structural equation modelling and based on 173 public and private sector employees' data found that participative strategic planning and participative management are positively related to learning at work. In this regard, organisational leaders should change the corporate culture from the traditional pattern of hierarchical structure to participation and empowerment. The finding contributes to new knowledge on the relationship between strategic planning and learning by uncovering the causal chain of participative management.

Keywords

Learning, organisation learning theory, participative management, participative strategic planning, resource-based theory, strategic planning

1.   Introduction

One of the significant challenges confronted by managers today is identifying and attracting talented employees(Thunnissen et al., 2013). To achieve results, organisations must cultivate proactive strategies for confirming decent stocked organisational pools of talent (Mellahi & Collings, 2010; Schuler et al., 2011). Participative management denotes the style of leadership by which the leader involves subordinates in decision making and problem-solving (KAHAI et al., 1997; Somech, 2006)it is important to examine how behaviors of leaders influence work groups using electronic meeting systems. Results of a laboratory experiment indicated that (a. The constitution of a learning environment at the workplace has been a vital attendant of the growth for employees and the organisation. Recent years have witnessed a significant increase in workplace learning as full or partial compensation for training and vocationally

oriented education. Participative strategic planning processes are consent making approach that helps people to come together in elucidating how they would expect their organisation or department to progress over upcoming next years. According to a study of Harvard Business Review (HBR), Group or team members first learnt from their peers (55%); second, they ask their superior or bosses. This study aims to examine a relationship between participative strategic planning processes and learning moderated by participative management style, which has not been empirically tested before in the Indian Context.

This research emphasises three significant questions: Does Participative strategic planning associate the positive attitudinal change in learning at the workplace? Does participative strategic planning impact learn at work for organisations with more levels of participative management than organisations with fewer levels of

participative management? And does participative management associate positive attitudinal response on learning at the workplace? To answer these questions, 173 respondents' data has been collected. As also shown in research(Inanc et al., 2015) that direct involvement of employees significantly improves learning at the workplace to both informal learning and training

According to organisational learning theory, interaction among individuals from different knowledge and experience helps the organisation innovate and augment knowledge (Cohen & Ledford, 1994). An organisation engages their managers and employees in collective learning to boost knowledge synergies, productivity and performance (Peteraf & Barney, 2003; Teece, 2014). Participative management provides an opportunity for interaction of knowledge and collective learning to both employees and managers and helps an organisation learn and grow. As per the Resource-based theory(RBT), an organisation is made up of many resources it requires to harvest and trade goods and services(Barney, 2000). organisations have to use these resources to sustain in the market and get a competitive advantage over others (Peteraf & Barney, 2003; Tian & Zhai, 2019)its challenge is to keep its arguments logically consistent and clear, despite the risk of their becoming entangled, due to competing and possibly conflicting theoretical influences. We argue, in this paper, that to meet this challenge, it is essential to understand the limits to the domain of RBT. Unless RBT is understood as a resource-level and efficiency-oriented analytical tool, its contribution cannot be understood and appreciated fully. Incorporating aspects of economic theory that fall outside this domain will not increase its power and will only add to the confusion. Continued efforts to increase the analytic precision of RBT and to elaborate its economic logic, however, are worthwhile pursuits. To these aims, then, we provide a sharper definition of competitive advantage, linking this term to value creation and to demand side concerns. Similarly, we provide an economically meaningful definition of value and more precise definitions of critical resources and of economic rents. This allows us to trace a clearer trail of logic, consistent with both the management and the economics perspectives, leading from critical resources to the generation of rents. Copyright © 2003 John Wiley & Sons, Ltd.","author":[{"dropping-particle":"","family":"Peteraf","given":"Margaret A.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","fam

ily":"Barney","given":"Jay B.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Managerial and Decision Economics","id":"ITEM-1","issue":"4","issued":{"date-parts":[["2003","6"]]},"page":"309-323","title":"Unraveling the resource-based tangle","type":"article-journal","volume":"24"},"uris":["http://www.mendeley.com/documents/?uuid=1942e367-0c3b-3493-ba4c-3024bab8f8be"]},{"id":"ITEM-2","itemData":{"DOI":"10.1108/IJM-05-2017-0090","ISSN":"01437720","abstract":"Purpose: The purpose of this paper is to relate participative decision-making (PDM.

For the sake of the study, we have integrated the RBT (Resource-based theory) with organisational learning theory to advance a theoretical framework of association between participative management and learning and test hypothesis on data collected.

This article is structured in the following way. The first theoretical background on participative strategic planning, participative management and learning is framed to develop hypotheses followed by methodology, analyses and results. The discussion, theoretical and practical implications of the study are outlined, followed by limitations, future actions, and conclusion.

2. Theoretical Background and Hypothesis Development

2.1 Participative strategic planning processes

A consensus-building approach named participative strategic planning processes helps employees come together to clear up how they would like their organisation or department to grow over the next few years. Supervisor transfers their requirement, expectations and ideas more clearly, confidently, convincingly, and positively. They listen more actively to the notions, expectations and needs of employees. Participation of employees in strategic planning processes, with the help of these staff, may have a lucid comprehension of the strategic aims and may have short-term plans and their execution. Furthermore, employees can simplify what their roles are so that they can diminish role conflict and role ambiguity during strategic plan implementation. Temporary teams consist of different hierarchical levels of employees and are made up by top management in strategic planning (Ketokivi & Castañer, 2004). The strategic planning process converts the basic stuff of enterprises as it made a platform to communicate for making decisions and allowing more participation in planning (De Baerdemaeker & Bruggeman, 2015)we draw on self-determination and organisational

commitment theory to examine whether and how the degree of managerial participation in strategic planning relates to the creation of budgetary slack. The hypotheses are empirically tested with survey data obtained from 247 managers in a cross-section of West-European organisations. The results from a structural equation model, with controls for budget participation and slack detection, suggest that increased participation in strategic planning leads to lower budgetary slack creation through the suggested path of heightened affective organisational commitment. In addition, the results indicate that budget participation decreases the creation of budgetary slack through the mediating effect of autonomous budget motivation, suggesting that both elements of the organisational planning process are related to the creation of budgetary slack. Our study contributes to the growing research exploring the interface between accounting and strategy by recognizing the importance of participative strategic planning for understanding managers' creation of budgetary slack.","author":[{"dropping-particle":"","family":"Baerdemaeker","given":"Jolien","non-dropping-particle":"De","parse-names":false,"suffix":""},-{"dropping-particle":"","family":"Bruggeman","given":"Werner","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Management Accounting Research","id":"ITEM-1","issued":{"date-parts":[["2015","12"]]},"page":"1-12","title":"The impact of participation in strategic planning on managers' creation of budgetary slack: The mediating role of autonomous motivation and affective organisational commitment","type":"article-journal","volume":"29"},"uris":["http://www.mendeley.com/documents/?uuid=6a7b0416-8eb9-33c6-a5c7-07e21e36752d"]}],"mendeley":{"formattedCitation":"(De Baerdemaeker & Bruggeman, 2015.

2.2 Learning at work

Learning can be defined as individuals or groups acquiring, understanding, reorganising, altering or assimilating a bunch of information, feelings, and skills. This is also essential to how individuals give meaning to an organisation's personal and shared lives (Marsick & Watkins, 2015). Individual Learning is a vital element of organisational Learning (Senge, 1991) is attained with the help of observation, self-study, instruction on technology-based, reflected in an individual during the exhibition of knowledge, attitudes, values, skills, and perceptions (Marquardt, 2013). Researchers have long identified

that experience to employees with different knowledge, experience, and expertise is a vital source of individual and collective Learning. Learning is amalgamated within day-to-day solving of various problems (Kaufman, 2001). The motive and way of learning largely stem from the objectives of work itself, naturally rising because of the challenges and demands of the work and interaction with people at the place of work. Thus, earlier studies have majorly focused on motivation and behaviour theories, like social exchange theory and expectancy theory, to deliver a theoretical base. However, lacking academic support on performance and Learning (Driscoll, 1978; Mitchell, 1973; Tian & Zhai, 2019)a political assessment of hierarchical decision makers, best predicts overall satisfaction. The congruence between desired and perceived participation best predicts satisfaction with participation in decision making. Gamson (1968.

2.3 participative strategic planning processes and learning at work

The strategic plan reflects the values and beliefs of not all stakeholders but its architects. It requires the participative environment to include the values and beliefs of all stakeholders.

The primary drive of strategic planning is to foster change in an organisation (Liedtka, 2000a, 2000b). the logic behind the rationale involves employees; there are high chances they would accept strategic change (Elbanna, 2008; Fiegener, 2005; Westley, 1990)management participation and strategic planning effectiveness. Design/methodology/approach - A total of 87 questionnaires were collected from privately owned firms working in Egypt. Regression analysis was used to test the hypotheses. Findings - Strategic planning practice, but not management participation, is significantly associated with strategic planning effectiveness. Further, both strategic planning practice and management participation jointly enhance the effectiveness of strategic planning. Research limitations/implications - Longitudinal data would be needed in order to prove that causal relationships exist. The common method bias restricts the inferences that can be drawn from this study. It would be useful to explore whether the results hold when other integrative variables are taken into consideration. Practical implications - A wide use of strategic planning tools is one important element in organizational success. Originality/value - Little research has so far examined the use and worth of strategic planning tools in organizations. One function of

this paper is to re-visit this area of research. It does so in one of the areas that have largely been neglected in past research in Arab countries.","author":[{"dropping-particle":"","family":"Elbanna","given":"Said","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Management Decision","id":"ITEM-1","issue":"5","issued":{"date-parts":[["2008","5","23"]]},"page":"779-796","title":"Planning and participation as determinants of strategic planning effectiveness","type":"article-journal","volume":"46"},"uris":["http://www.mendeley.com/documents/?uuid=6b656ff6-9cc0-3bbd-aa81-093034239883"]},{"id":"ITEM-2","itemData":{"DOI":"10.1111/j.1540-6520.2005.00101.x","ISSN":"1042-2587","abstract":"Agency, strategic choice, and cognitive perspectives are used to examine the conditions under which chief executive officers (CEOs.

Some scholars have recommended that participation in strategic planning would affect the triumph of strategic execution and therefore enhance organisation performance (Collier et al., 2004; Grundy & King, 1992; S. Miller et al., 2004). Strategic planning could raise commitment to the implementation of strategy because it explains and clarify the strategy and vision of the organisation (Liedtka, 2000a, 2000b), adopt an understanding of the strategy of the organisation (Mantere & Vaara, 2008) and help the administration to consent about the strategy (Wooldridge & Floyd, 1990). Strategic planning shows the big picture about the situation of the market and organisation, which could lead to improved decision results (Denison et al., 2003). This can also help in the enhanced acceptance of decisions (Jehn, 1997) and consent (Markóczy, 2001), thus cumulative the change that employees of the organisation would accept and implement the plan. Earlier research suggests that one of the significant keys to organisation success is implementing strategy well (Liedtka, 2000a, 2000b). however, (Hutzschenreuter & Kleindienst, 2006) claim there is less record of implementing a successful strategy. Scholars argue that strategy implementation is significant to performance (Wooldridge & Floyd, 1990).

Some scholars have recommended that strategic planning would affect the accomplishment of implementation of strategy and thus enhance the learning of an organisation (Collier et al., 2004; Grundy & King, 1992; S. Miller et al., 2004). Thus,

Hypothesis 1. There is a positive relationship between participative strategic planning processes and learning at work.

2.4 Moderator Role of participative management style

The concept of participative management or employee involvement or participative leadership developed in the nineteenth century and has become researchers' attention in topical decades (Cox et al., 2006; Lam et al., 2002; Salas-Vallina & Fernandez, 2017)"author":[{"dropping-particle":"","family":"Lam","given":"Simon S.K.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Chen","given":"Xiao Ping","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Schaubroeck","given":"John","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Academy of Management Journal","id":"ITEM-1","issue":"5","issued":{"date-parts":[["2002"]]},"page":"905-914","title":"Participative decision making and employee performance in different cultures: The moderating effects of allocentrism/idiocentrism and efficacy","type":"article-journal","volume":"45"},"uris":["http://www.mendeley.com/documents/?uuid=bc7c437d-b458-4492-b605-0d4e3d2935a5"]},{"id":"ITEM-2","itemData":{"DOI":"10.1111/j.1748-8583.2006.00017.x","ISSN":"0954-5395","abstract":"Most quantitative studies analysing the nature and impact of employee involvement and participation (EIP. Participative management, the leadership style of management, allows the supervisor to encourage subordinates to share some extent of obligation in the workplace(Sauer, 2011; Somech, 2003). Participative management facilitates the involvement of associates in the managerial process by or through inspiration, support & influence, and resource provision. In this style of management, consultation is preferred instead of direction (Amabile et al., 2004), along with consensus focusing and exhibiting behaviours that permit followers to survive themselves (Wageman, 2001).

Learning is amalgamated within day-to-day solving of different problems (Kaufman, 2001). Scholars Human resource management has done notable work to find how and in which manner participative management helps to advance the performance and job satisfaction of the employee and produced unconvincing or even contradictory findings (Cox et al., 2006; K. I. Miller &

Monge, 1986; Salas-Vallina & Fernandez, 2017)affective, and contingency models of the effects of participation in decision making on employees' satisfaction and productivity. Contingency models received no support. Results from field studies provided some support for cognitive models, and strong support for affective models linking participative climate with worker satisfaction. Methodological variations such as research setting and type of participant were important moderators in subgroup analyses. We discuss the implications of such variations for task complexity.

","author":[{"dropping-particle":"","family":"Miller","given":"Katherine I.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Monge","given":"Peter R.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Academy of Management Journal","id":"ITEM-1","issue":"4","issued":{"date-parts":[["1986"]]},"page":"727-753","title":"Participation, Satisfaction, and Productivity: A Meta-Analytic Review","type":"article-journal","volume":"29"},"uris":["http://www.mendeley.com/documents/?uuid=888a921a-f259-3f74-af13-04f7e5ec6e6d"]},{"id":"ITEM-2","itemData":{"DOI":"10.1111/j.1748-8583.2006.00017.x","ISSN":"0954-5395","abstract":"Most quantitative studies analysing the nature and impact of employee involvement and participation (EIP.In finding the effect of direct participation for learning, the author has focused on three key dimensions: informal learning, training receipt and quality of training (Inanc et al., 2015).

Studies related to participation, e.g. (Easterby-Smith et al., 2000; Sverke et al., 2008), have shown participative management style is among the vital rationalisations of positive organisational change. Participative management has been seen as strengthening learning because it brings the people together who have different knowledge, experience and skill (Kitzmiller et al., 2010)such as health information technology (HIT. Research confirms that direct participation and learning have significant and positive relations (Inanc et al., 2015). Different forms of participation of employees have distinct Effects on the specific type of learning. However, it is shown in research that participation of the employee in decision making and learning depend to some extent on workplace setting technology level and employees skill level (Inanc et al., 2015)(Felstead et al., 2010) Although, there are limited studies that have established positive relation between Participative and learning, we might suppose Participative management to engender learning at the workplace and thus, we hypothesise:

Hypothesis 2. Participative management style will moderate the relationship between participative strategic planning and learning at work. Participative strategic planning will be more strongly to learning when participative management is high.

3. Method

3.1 Sampling and Data Collection

By understanding the need for employee development, training emerges as a pivotal HR management function. The data for the current study were gathered from employees working in Indian organisations, mainly public and private sector manufacturing and service provider companies. Respondents were the full-time employees working in these organisations. Researchers have strongly recommended that data collection be done from diverse samples to obtain variable responses and generalizability of the results (Agarwal & Gupta, 2018; Tomarken & Serlin, 1986)but studies about the nutritional content of gluten-free products and coeliac individual's diet quality are scarce. The purpose of this paper is to evaluate the availability, price, and nutritional composition of gluten-free products in retail stores of a Brazilian capital city. Design/methodology/approach – All retail stores listed by the Brazilian Coeliac Association as gluten-free product selling places in the city of Florian?opolis were visited. All available products were catalogued and their labels analysed for nutritional content. Similar gluten-containing products were systematically selected in order to allow comparisons. t-test, analyses of covariance, and cluster analysis were performed, all considering a 5 per cent significance level. Findings – Availability and variety of gluten-free products was limited and prices were high. Cluster analysis found similarities in the nutritional content of gluten-free and conventional food products, suggesting that although raw materials different than wheat were being employed, the composition patterns are the same. Certain advantages in the composition of gluten-free products were observed, regarding mainly calories and sodium, however, protein and dietary fibre values were inferior. Social implications – Results observed may negatively impact diet adherence and stimulate the intake of conventional products with harmful consequences to the quality of life and health of coeliac individuals. Originality/value – This paper

conducted a careful evaluation of nutrition composition of gluten-free products from different categories, available in retail stores, which is rare in researches on this topic. Moreover, results call attention to the need of better care in product formulation and dietary guidance

for","author":[{"dropping-particle":"","family":"Agarwal","given":"Upasna A.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Gupta","given":"Vishal","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Personnel Review","id":"ITEM-1","issue":"2","issued":{"date-parts":[["2018","3"]]},"page":"353-377","title":"Relationships between job characteristics, work engagement, conscientiousness and managers' turnover intentions","type":"article-journal","volume":"47"},"uris":["http://www.mendeley.com/documents/?uuid=bbd3c1d4-a6c7-4079-832a-b8d59bc89b23","http://www.mendeley.com/documents/?uuid=a1a509da-dc5d-4f76-aefb-864b65214e1f"]},{"id":"ITEM-2","itemData":{"DOI":"10.1037/0033-2909.99.1.90","ISSN":"00332909","abstract":"The present Monte Carlo study compared the Type I error properties and power of four commonly recommended analysis of variance (anova. The survey questionnaire consisted of a cover letter summarising the objective of the research and ensured using the data entirely for the research purpose, and participants' anonymity was maintained.

A self-reported questionnaire, a structured and sincerely planned data collection method, was employed in quantitative research (Malhotra, 1999). Out of the 450 questionnaires sent as a Google form via email, data of 173 was collected, showing a 38.44 per cent response rate. The sample collected fulfilled the conditions recommended by (Hair, JF Jr, Black, W.C., Babin, B.J. and Anderson, 2010). The sample size should be about five to ten times the total number of observations tested under the study. The questionnaire consisted of the items on demographic profiles of the respondents and scales for measuring the latent constructs. Among the respondents, 61 (35.33%) were females, and 112 (64.67%) were males. In terms of age of the respondent category wise, 167 (96.5%) were in the category of 21-35 years of age, 6 (3.5%) were in the category of 36-50 years of age. In terms of respondent's organisation status, 114(65.9%) were working in a private organisation, and 59 (34.1%) were working in a public organisation. In terms of Job Position, 25 (14.5%) were at a junior level position, 81 (46.8%) were at the middle or intermediate level position and, 67 (38.7%) were at a senior level position.

3.2 Measures

3.2.1 Participative Strategic Planning Processes

Participative Strategic Planning Processes has been Measured with a scale of Three Items developed and validated (Kim, 2002). A sample Item for Participative Strategic Planning

Processes are "I feel that I had input in developing my department's strategic planning process" And "I understand my role in accomplishing the goals in my departments' strategic plan." The seven-point Likert used for this study ranges from (1=strongly disagree to 7=strongly agree). The (alpha coefficient) internal consistency for the strategic planning processes was **0.78.**

3.2.2 Manager's use of a Participative Management style

The Manager's use of a Participative Management style was Measured with a scale of four Items developed and validated (Kim, 2002). Sample items are "Within the last two years, managers in my department have attempted to allow employees to improve our work process" and "Managers in my department have made an effort to increase employee involvement in decision making." The seven-point Likert used for this study ranges from (1=strongly disagree to 7=strongly agree). The (alpha coefficient) internal consistency for the Manager's participative management style was 0.93.

3.2.3 Learning at work

Learning a sub-scale (a Nine-item scale) developed and validated by (Porath et al., 2012) has been taken to measure learning. A sample item for learning is "I am experiencing considerable personal growth", "I enjoy seeing how my views have progressed", and "I have not grown much recently". The Likert scale with a seven-point response scale was taken under this study ("strongly disagree" =1, "strongly agree" =7), and higher scores indicated higher learning. This scale's internal consistency (alpha coefficient) was recorded at 0.88 for this study.

3.3 Data analysis

This study applied Confirmatory factor analysis and structural equation modelling to analyse the model fit in IBM SPSS R studio. The descriptive statistics, reliability and validities, confirmatory factor analysis,

structural equation modelling was studied through IBM SPSS Statistics 27. Andrew F Hayes PROCESS macro (Hayes AF, 2018) was also employed with 5000 random bootstraps resamples to measure the non-normality of data usually obtained after applying the Likert scale.

4. Results

4.1 Measurement model

All the study variables were involved in the measurement model and were tested in AMOS. The model demonstrated a good fit with the data with model fit $\chi^2(98) = 192$, $\chi^2/df = 1.95$, $p < 0.001$, CFI = 0.995, GFI= 0.992, TLI = 0.994, SRMR = 0.059, RMSEA = 0.075 (Hooper et al., 2008)guidelines are presented on their use. The paper also provides reporting strategies of these indices and concludes with a discussion on the future of fit indices. © Academic Conferences Ltd.","author":[{"dropping-particle":"","family":"Hooper","given":"Daire","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Coughlan","given":"Joseph","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Mullen-","given":"Michael R.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Electronic Journal of Business Research Methods","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2008"]]},"title":"Structural equation modelling: Guidelines for determining model fit","type":"article-journal","volume":"6"},"uris":["http://www.mendeley.com/documents/?uuid=5711cb1f-1026-3359-a2d7-a5b8ee3534f0"]}],"mendeley":{"formattedCitation":"(Hooper et al., 2008. A cross-sectional study was applied with a self-reported questionnaire considered a good means to obtain sensitive information and reliable responses (Earl Babbie, 2020). Though there are chances of missing responses associated with the self-administered questionnaire, this was not the case with the current study. The response to all the items was made compulsory in the Google form. As per the suggestion of Podsakoff *et al.* (2003), the chances of occurrence of common method bias was also substantial; thus, various methodological remedies were undertaken to reduce the erroneous effect of common method factor bias. The psychological measures were placed at proximity in the survey instrument by the independent and dependent variables. The anonymity of the respondents was also safeguarded, and the participants were requested to respond to each item as honestly as feasible to reduce the evaluation apprehension. TABLE I displays measurement and single-factor model fit statistics

<u>INSERT TABLE I HERE</u>

4.2 Convergent and discriminant validities

The convergent and discriminant validities of the constructs were analysed after testing the measurement model through CFA. The composite reliabilities (CR) and α-reliabilities of the constructs were above the threshold limit of 0.7, thus demonstrating convergent validities of the latent constructs (Anderson & Gerbing, 1988; Nunnally, J.C. and Bernstein, 1994)"title":"Psychological Theory","type":"book"},"uris":["http://www.mendeley.com/documents/?uuid=49702d67-3726-402d-86b8-22d74180216d","http://www.mendeley.com/documents/?uuid=3acfdf63-a7e2-4b9b-984f-acf26159fe3f"]},{"id":"ITEM-2","itemData":{"DOI":"10.1037/0033-2909.103.3.411","ISSN":"1939-1455","author":[{"dropping-particle":"","family":"Anderson","given":"James C","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Gerbing","given":"David W","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Psychological Bulletin","id":"ITEM-2","issue":"3","issued":{"date-parts":[["1988","5"]]},"page":"411-423","title":"Structural equation modeling in practice: A review and recommended two-step approach.","type":"article-journal","volume":"103"},"uris":["http://www.mendeley.com/documents/?uuid=3eea4e12-2b39-4bf7-b48d-b633ba0a386d","http://www.mendeley.com/documents/?uuid=27286d78-105c-42c4-ab27-b2708ce14948"]}],"mendeley":{"formattedCitation":"(Anderson & Gerbing, 1988; Nunnally, J.C. and Bernstein, 1994. Furthermore, the discriminant validity was checked as per the recommendations (Fornell & Larcker, 1981) in addition to the known problems related to sample size and power, is that it may indicate an increasing correspondence between the hypothesized model and the observed data as both the measurement properties and the relationship between constructs decline. Further, and contrary to common assertion, the risk of making a Type II error can be substantial even when the sample size is large. Moreover, the present testing methods are unable to assess a model's explanatory power. To overcome these problems, the authors develop and apply a testing system based on measures of shared variance within the structural model, measurement model, and overall model.","author":[{"dropping-particle":"","family":"For

nell","given":"Claes","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Larcker","given":"David F.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Marketing Research","id":"ITEM-1","issue":"1","issued":{"date-parts":[["1981"]]},"page":"39","title":"Evaluating Structural Equation Models with Unobservable Variables and Measurement Error","type":"article-journal","volume":"18"},"uris":["http://www.mendeley.com/documents/?uuid=a5391b12-18b9-4b3c-90dd-dcfa0f7912f0"]}],"mendeley":{"formattedCitation":"(Fornell & Larcker, 1981. If the Average variance extracted (AVE) is greater than the square of the inter-factor correlations, then there exists substantial discriminant validity for the latent constructs. The AVE of all the latent constructs was greater, thus proving the conditions of discriminant validity. Table II displays the values of AVE, composite reliabilities (CR), Cronbach-α, and inter-factor correlations.

INSERT TABLE II HERE

4.3 Hypotheses testing

The hypotheses formulated were tested employing SEM in R STUDIO. The independent variables were mean-centred for moderation analysis to avoid potential multicollinearity issues. Participative strategic planning showed a significant association with learning at work ($\beta = 0.190, p < 0.001$), supporting Hypothesis 1. Participative management style also showed a significant association with learning at work ($\beta = 0.436, p < 0.001$). Furthermore, the interaction effect of participative strategic planning processes and participative management style communication on learning was also significant ($\beta = 0.106, p < 0.05$), supporting Hypothesis 2. The analysis findings, accompanying unstandardised path coefficients, are displayed in Figure 1.

INSERT FIGURE 1 HERE

For taking care of the non-normality of data, we conducted an alternate analysis on PROCESS macro model 1 by (Hayes AF, 2018) with 5000 random bootstraps resamples at a 95% confidence interval. Hayes PROCESS macro also aids in examining the relationship between independent and dependent variables at higher and lower levels of the moderator (participative management style) with plus and minus one standard deviation (+1SD, mean, -1SD). The data were imputed from R STUDIO to conduct the analysis. The results of the study verified the results obtained from R STUDIO. Table III shows the regression analysis results in PROCESS macro, with unstandardised path coefficients. Table IV Shows the bootstrap results for the regression model parameters, representing the significant moderating effect of participative management style on the relationship between the participative strategic planning process and learning. Zero is not falling between the upper and lower-level confidence interval. The results also exhibited that the participative strategic planning process moderated the relationship between independent and dependent variables. At a higher level of the moderator (participative management), the relationship between the participative strategic planning process and learning at work is stronger and more positive. Table V represents the confidence interval values and estimates at lower and higher levels of participative management style as a moderator. Figure 2. displays the interaction effect of the participative strategic planning process and participative management style on learning at low and high levels of participative management with minus and one standard deviation following the recommendations of (Aiken, L. S., & West, 1991). Thus, Hypothesis 2 is supported.

INSERT TABLE III HERE

5. Discussion

This study proposed the supportive effect and showed evidence of a positive association between participative strategic planning processes and learning, revealing that when employees participate in organisational decision making, they tend to offer better learning at the workplace. Earlier research predominantly examined the effect of Participative management on performance and job satisfaction of workers in the organisation, failing to connect participative strategic planning to learning. It is expected that participative strategic planning engages employees and their managers or supervisors in contemporary learning, which can help to increase the productivity of the firm and profitability. The research found a positive relationship between participation and Learning (Felstead et al., 2010; Inanc et al., 2015).

The current study examined the relationship between participative strategic planning and learning and participative management style moderating the relation. Based on survey data obtained from 173 respondents, the participative strategic planning processes were positively related to learning at work. We also implemented an interaction effect of participative strategic planning processes with participative management as to how it moderates the given relationship. We understood that

participative strategic planning had a moderating effect on the relationship between the independent and dependent variables. Comprehending this effect, we elaborated that when there exists a high level of participative management along with the participative strategic planning processes, there is higher learning at the workplace. In contrast, there is low learning at the workplace when there is low participative management style and participative strategic planning. Further, we discuss the implications for theory and practise based on the study's findings.

INSERT TABLE IV HERE

1.1 Theoretical Implication

Earlier research majorly investigated the participative management impact on performance and job satisfaction of an individual employee and has not focused much on the organisation's overall performance. This paper integrates RBT with organisational learning theory to develop a framework. Engaging supervisors and employees through participative management and strategic planning increase learning at work.

INSERT FIGURE 2

The framework recommends that fiasco or triumph of participation relies on whether or not it offers opportunities for supervisors or managers and employees to be involved in learning at work. This is a noteworthy contribution the study makes to the literature. Participative management offers employees a say in decision making, whereas, in employee participation in decision making, the decisions are entirely in employees' hands. This paper supports participative strategic planning to enhance learning, which is of utmost required for organisational success and profitability by or through participative management. This contribution also adds value to the literature.

INSERT TABLE V HERE

5.2 Managerial Implication

The findings of this research also have some implications for supervisors and managers. This study adds to the literature about participative management style and learning. Interaction of the varied knowledge structure helps an organisation enhance and innovate.

It has become essential for organisations to bring employee and management people to a place for learning collectively and giving them a place and opportunity to unite their diverse knowledge and education to surge the profitability as well as productivity of the organisation (Tian & Zhai, 2019)and examine the impact of PDM on organizational performance. Design/methodology/approach: The paper integrates the resource-based theory with organizational learning theory to develop a framework, and distinguishes PDM in which decisions are jointly made by employees and managers from employee decision-making (EDM. Our finding provides an addition to employee learning in the public and private organisation, which is affected by increasing the participative management style of managers based on survey data of 173 employees. Moreover, we confirm a positive relationship between participative strategic planning and learning in private and public organisations of India. Results support the result that direct participation of the employee in decision-making notably increases learning at the place of work for both informal learning and training (Inanc et al., 2015). As evidenced in this study, the organisations need to adopt participation in strategic planning that offers a chance for managers and employees to involve in learning at work. University leaders can use a participative management style in preparing strategic and development plans and allow decisions to be centralised to reduce development plans. By such a mechanism, a sense of shared responsibility commitment and cooperation among administrators and faculties will be increased, and as a result, organisational learning could be facilitated. As evidenced in this study, the organisations need to adopt a participative strategic planning process and participative management style that offers a chance for managers and employees to involve in learning at work.

5.3 Limitation and Future Research

The data has been collected from India's public and private sector employees; after analysing the data, we show a positive effect of participative strategic planning processes on learning through moderating effect of participative management. The cross-sectional research design has been used in this study; thus, this design is not sufficient to determine the causal relationship between variables. As there might be another variable also that shares associations with given variables. Hence, further studies are suggested to establish and identify the relationship between these variables. This study is conducted on the public and private sector employees in India; therefore, its result may not be generalised for employees working in organisations that have varied cultures. In this study, participative management style was substitution and the existence of representatives of employees in the different boards in an organisation. Most of the respondents are

middle or higher-level executives of the organisation. It is dubious if the present study's finding applies to the participation of employees at the bottom level or lower level of employees. Research in future may examine the data validity on participative management style at lower-level employees.

6.   Conclusion

Earlier studies emphasise the role of participation in motivating workers, job satisfaction and performance of the worker and claimed that the more participation of workers and employees in decision making, the better. The claims had not paid attention to the role of participative strategic planning processes and participative management in involving managers and employees in learning at work. The effect of participative strategic planning on learning through the moderating effect of participative management was significant. The moderating effect of participative management style shows a significant result. Thus, this study strived to understand the relation and effects of participative strategic planning and learning, with the moderating role of participative management style in Indian public and private organisation scenarios. In participative management, the decisions are collectively taken by management and workers, which helps increase productivity and performance. Organisations need to adopt strategic planning to involve employees and management people in learning and influence the valuable knowledge and education of duo both employees, managers, and superiors to increase the performance of an organisation with the help of participation. Moreover, the result provides evidence that if a participative management style is adopted and focuses on strategic planning, it increases learning in the organisation.

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	χ2	df (Degree of freedom)	χ2/df	CFI	SRMR	RMSEA	GFI	TLI
Measurement Model	192.534	98.000	**1.95**	0.995	0.060	0.075	0.992	0.994
Single Factor Model	719.854	104.000	6.9	0.967	0.114	0.186	0.970	0.962
χ2 Difference test	**527.32**	**6**						

Note: CFI =Confirmatory Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standard Root Mean Square Residual. Trucker-Lewis Index = TLI

TABLE I1. Mean, Standard Deviation and Correlation of study variables

		α	CR	M	SD	1	2	3	4	5	6	7	8	9	10	11
1	Gender	-	-	0.35	0.479	-	-	-	-	-	-	-	-	-	-	-
2	Marital Status	-	-	0.29	0.467	-0.068	-	-	-	-	-	-	-	-	-	-
3	Age	-	-	0.03	0.184	-0.074	0.289 **	-	-	-	-	-	-	-	-	-
4	Education	-	-	1.66	0.603	0.251 **	0.098	0.158 *	-	-	-	-	-	-	-	-
5	Post	-	-	0.76	0.690	-0.179 *	0.309 **	0.021	0.013	-	-	-	-	-	-	-
6	Experience	-	-	0.03	0.168	0.017	0.263 **	0.722 **	0.154 *	0.111	-	-	-	-	-	-
7	Organisation Status	-	-	0.66	0.475	-0.158	0.185 *	0.003	-0.117	0.225 **	0.051	-	-	-	-	-
8	Income	-	-	1.29	1.256	-0.074	0.204 **	0.082	0.113	0.108	0.125	-0.038	-	-	-	-
9	Participative strategic planning	0.86	0.88	5.3035	1.274	0.009	-0.029	-0.157 *	-0.064	0.210 **	-0.096	0.069	0.061	**0.658**	0.303	0.285
10	Participative management	0.85	0.90	5.8516	1.095	-0.099	0.020	-0.071	-0.111	0.078	-0.019	0.077	0.271 **	0.551 **	**0.734**	0.315
11	learning	0.88	0.95	5.8381	.9016	-0.124	0.090	-0.095	-0.188 *	0.229 **	-0.046	0.104	0.021	0.534 **	0.562 **	**0.669**

Note. α= Cronbach alpha reliability; CR = Composite reliability of the measurement model; M=Mean; S=Standard Deviation. N=173. The average variance extracted (AVE) for each construct (Nos. 9, 10 & 11) is provided in **bold** along the diagonal. Values below the diagonal are inner construct correlations; values above the diagonal (i.e., AVE) are squares of correlations.

* p< 0.05 (2-tailed). ** p< 0.01 (2-tailed).

TABLE III: Moderation results from Hayes PROCESS macro

Dependent variable (Learning)	coefficient	SE	t-statistics	p-value	LLCI	ULCI
PSPP	0.304	0.069	4.425	.000	0.168	0.440
PMS	0.235	0.058	4.077	.000	0.121	0.348
PSPP*PMS	0.077	0.033	2.317	.022	0.011	0.143

Notes: unstandardised path coefficients, LLCI = Lower-level confidence interval, ULCI = Upper-level confidence interval, PSPP- participative strategic planning processes, PMS= Participative management style, PSPP * PMS = interaction term, * p value < 0.05, *** p value <0.001

Table IV Bootstrap results for regression model parameters

Dependent variable (Learning)	coefficient	BOOTmean	BootSE	BootLLCI	BootULCI
PSPP	0.304	0.309	0.077	0.161	0.462
PMS	0.235	0.232	0.051	0.132	0.333
PSPP*PMS	0.077	0.079	0.044	0.010	0.173

Table V Moderation result across different levels of supervisory communication

Dependent variable (Learning)	effect	SE	t-statistics	p-value	LLCI	ULCI
Low (_1.285))	0.205	0.072	2.859	.005	0.063	0.347
Mean (0)	0.304	0.069	4.425	.000	0.168	0.440
High (+1.285)	0.403	0.089	4.518	.000	0.227	0.580

Figure 1. The structural model with unstandardised path coefficients

**Participative manage-
ment style**

**Participative strategic
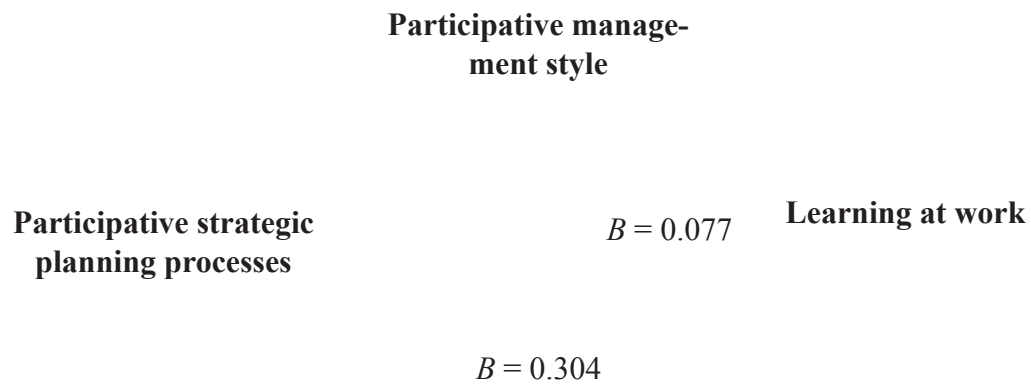planning processes** $B = 0.077$ **Learning at work**

$B = 0.304$

Figure 2. Moderating effect of supervisory communication on Learning

Effects of Workforce Diversity on Employees Performance of Commercial Bank

Assistant Professor, Padam Dongol
Research Scholar
Lincoln University, Malaysia

Abstract

This paper investigates workforce diversity and its effect on employees' performance at a commercial bank. The responses to a self-administered questionnaire about the workforce diversity of bank workers are gathered using a self-administered questionnaire. In a country, there are 27 commercial banks, 20 of which are used as sample banks. A total of 125 questionnaires were given among the sample bank workers, and 99 questionnaires were returned, resulting in a 79.2 per cent sample size of respondents for the study. Using the Software Package for Social Science (SPSS) software, this study performed descriptive analysis, correlation, and multiple regression analysis to discover the empirical relationship between the bank's workforce diversity and employee performance. All three workforce diversity indicators have a statistically significant positive relationship with employee performance.

Keywords

Gender diversity, Education diversity, Ethnic diversity, Employee performance.

1. Introduction

Today's banking and corporate sectors must cope with a wide range of diversity. Diversity refers to gender, age, religion, language, personality, education, culture, social standing, and other differences between employees working in an organisation. In addition, workforce diversity in an organisation is the differences in employees' demographic, cultural, and personal qualities. Age, gender, race, education, religion, and culture are just some of the differences that affect a task or relationship within an organisation (Carrell (2006). Workforce diversity refers to when members of a group or organisation vary in terms of age, size, colour, immigration status, and educational achievement. The workforce is more diversified than in previous generations (Erasmus, 2007). Globalization, an ageing population, the inclusion of women and minorities in many occupations, knowledge-based professions, work teams, remote employment, and part-time or temporary workers have all contributed to a diverse workforce. (Agrawal, 2016; Adhikari & Shrestha, 2019)

Diversity, according to Choi (2007), leads to synergistic effectiveness because representatives from different organizations can value and understand each other's experiences, talents, and perspectives. The workforce composition has an effect on employee production (Khan et al., 2019). To maximize employee efficiency and productivity, many businesses, including banks, prioritize managing employee diversity. The banking industry is expanding at a rapid speed (Khan & Ullah, 2021).

In Nepal's service industry, commercial banks are the dominant player. It contributes 18% of GDP to the nation. Due to globalization and liberalization, the use of information technology, as well as mergers and acquisitions, the current banking industry has undergone significant reforms, resulting in significant changes in the working environment of Nepalese commercial banks. As a result, the banking industry's rapid expansion has created a slew of issues, including workforce diversity. However, this is a natural occurrence that can have both positive and negative effects on a company's success, depending on how well it is managed. Organizational capital has long been thought to be the foundation of a company's success because it can spark organizational excellence while still ensuring the highest standard of business success (Kyalo & Gachunga, 2015). The literature revealed that only a few studies on a similar topic in the context of Nepalese commercial banks had been conducted in recent years, the researcher believes that a study on workforce diversity and employee performance is important to conduct in the current situation. This study investigates how workforce diversity impact employees' performance in terms of gender, age, education, and ethnicity in commercial banks

2. Statement of the Problem

In today's banking industry, workforce diversity is a

critical concern. The study focuses on the impact of workforce diversity on employees' performance in a bank. Employees would appreciate all of the good benefits such as motivation, knowledge and skill transfer, creativity, and better decision making in an organization for the organization's success when the organization has a favourable environment condition for exercising workforce diversity (Amaram, 2007). Similarly, if workforce diversity is not handled appropriately, diverse groups can form in an organization, which can lead to miscommunication, emotional problems, a power struggle among employees, and, eventually, high employee turnover (Jackson et al, 1991; William and O'Reilly, 1998; Jehn, 1995). Apart from the above-mentioned, the majority of workforce diversity studies were conducted outside of Nepal, with the majority of them focusing on manufacturing companies and secondary schools (Selvaraj, 2015; Shifnas & Sutha, 2016). Furthermore, the study of the elements that may influence employee performance has not given adequate attention to workforce diversity (Beziibwe, 2015). To achieve great work performance in an organization, today's Nepalese commercial bank has demonstrated the wide diversity in the workplace in terms of gender, age, education, linguistic culture, and ethnicity. The banking sector is essential to the growth of a country's economy. Nepalese banks have also played a significant role in the development of the financial sector. Thus, this study analyses the impact of workforce diversity on employees' performance in Nepalese commercial banks, taking into account the impact of gender, age, education, and ethnic diversity on employee performance.

2.1 Research Questions:

The research questions are as follows:

a) Does it relationship between gender diversity and employees performance in a bank?

b) Does it relationship between ethnic group diversity and employees performance in a bank?

c) Does it relationship between education diversity and employees performance in a bank?

2.2 Objectives of the Study

The main objective of the study are:

a) To investigate the relationship between gender diversity and employees' performance in a bank?

b) To examine the relationship between ethnic group diversity and employees' performance in a bank?

c) To analyze the relationship between education diversity employees' performance in a bank?

3. Review of Literature

Workforce diversity refers to how gender, colour, education, religion, and culture influence employee performance in the workplace. Workplace diversity refers to a wide range of distinctions among employees, including race, gender, ethnic group, age, personality, cognitive style, tenure, organizational role, education, and background Greenberg (2004). Jonathan, David, and Aparna (2004) conducted research on workforce diversity and concluded that diversity can be useful or damaging depending on the employee's performance. Employee performance can be positively correlated with diversity by promoting creativity, innovation, and improved decision-making, or adversely correlated with diversity by causing conflict, decreased cohesiveness, and a lack of cooperation in the workplace (Timmermans, B et al., 2011). Many studies have demonstrated, however, that firms with strong diversity management may build fair corporate cultures with new viewpoints, innovative capabilities, and fresh ideas, all of which are critical for success.

3.1 Diversity of Gender

Gender diversity is one of the most influencing variables in an organization's positive or poor job performance, and it is considered the most influencing factor that is directly linked to the level of performance. Employees who are male or female are classified as gender diverse in the workplace. Using a resource-based approach, McMillan-Capehart (2003) and Frink et al (2003) investigated the favourable effect of gender diversity on organizational performance. Gender diversity has been demonstrated to have detrimental effects on group performance outcomes when the sample size is male-dominated, but no effects when the sample size is female dominant in research (Pelled, 1997). According to Gupta (2013), a moderate level of gender diversity improves competitive advantage, but a larger level of gender diversity lowers organizational performance. Powell (2011) discovered that gender is the biological inference of a person's gender. Gender diversity research focuses on how people perceive men and women to be different. Individuals' reactions to other people's behaviour in the workplace or in any other group coalition are influenced by gender differences prejudices and discrimination all reflect differences in gender. If gender concerns are identified, discussed, and addressed,

diversity in the workplace will be helpful (Ullah, 2020).

3.2 Ethnic Groups Diversity

Ethnic diversity encourages problem-solving from a variety of racial perspectives, which leads to increased team productivity because the teams have learnt to capitalize on their differences (Zgourides, John, and Watson, 2002). Because of the options for learning, ethnically diverse civilizations are more imaginative and thrive (Garen, 2003). Ethnic diversity in the workforce may be beneficial or harmful to businesses, according to Dastane and Eshegbe (2015). It may be useful if ethnic variety is valued and managed appropriately, and vice versa. This is because a diverse workforce may contribute to the organization's increased creativity and innovation, which improves performance (Van Knippenberg, Van Ginkel & Homan, 2013).

3.3 Education Diversity

All personnel at a company need to be well-educated. Because different personnel have diverse educational backgrounds, education diversity in an organization aids in the performance of various tasks in a systematic order. According to Choi and Rainey (2010), a higher productivity level is fueled by a higher percentage of qualified employees. According to Emiko and Eunmi (2009), a person's productivity is determined by their level of education. Workers would have a strong educational background as a result of this.

3.4 Employees performance

"The successful fulfilment of one's obligations to achieve sound outcomes," Hashim, Ullah, and Khan (2017) define employee output. It refers to an employee's ability to meet the job's demands. Consider productivity, effectiveness, job quality, and performance evaluation (Kyalo & Gachunga, 2015). Human resource managers feel that effective workforce diversity strategies are required to boost employee and company productivity (Khan& Ullah, 2021; Shaikh, Channar, & Shaikh, Ullah, 2021). The sound and healthy worker in an organization is usually the foundation for good employee performance.

3.5 Hypothesis

Compared to a homogeneous team, a gender diverse team makes better decisions (Rogelberg and Rumery, 1996). Based on a resource-based view of the organization, a positive association between gender diversity and employee performance is predicted, however, social identification and self-categorization theory predict a

negative relationship (Mohammad et al, 2007). On the downside, because of internal disagreements, gender diversity slows down decision-making (Jackson et al, 2003). According to Kochan et al. (2003), it is critical to give equal job opportunities for women in order to improve an organization's employee performance. The following hypothesis can be formed based on the foregoing discussion.

H1: There is a significant relationship between gender diversity and employee performance in a bank.

In comparison to racially homogeneous teams, ethnically diverse teams were proven to make better decisions (McLeod et al, 1996; Watson et al, 1993). Because of complementarities and learning opportunities, multicultural teams foster more creativity and innovation (Lee & Nathan, 2011; Ozgen et al, 2011) However, some studies have found that organizational diversity reduces communication and coordination and increases employee turnover (Lazear, 1999; Morgan & Vardy, 2009). (Jackson, et al 1991). De et al., (2009) came to the conclusion that ethnic diversity leads to rejection of heterogeneous group members and poor performance. The following hypothesis can be formed based on the foregoing discussion.

H2: There is a significant relationship between ethnic group diversity and employee performance in a bank.

According to Benschop (2001), cities with a higher percentage of employees with a tertiary degree will encourage people of all levels of education to earn better incomes. According to Daniel (2009), higher education levels may lead to greater workforce mobility. Furthermore, due to their increased qualifications, an individual employee's performance would be enhanced (Kumar & Suresh, 2018). The following hypothesis can be formed based on the foregoing discussion.

H3: There is a significant relationship between education diversity and employee performance in a bank.

4. Theoretical Framework

To analyze the data, this study used mean and standard deviation for descriptive statistics. In addition, a multiple regression model is deployed to investigate the effect of workforce diversity on employees' performance at the commercial bank. Hence, the given below model equation is developed.

Employees Performance = α + $\beta 1$ gender + $\beta 2$ Ethnic group + $\beta 3$ Education + ε

Where,

α = Constant

β1, β2, β3, =Coefficient of the variables

5. Research Methodology

The current study used a descriptive research design with a quantitative in nature. The purpose of this research is to analyze the effects of workforce diversity on employee performance in commercial banks. The respondents for this survey are all bank employees. In this study, convenience sampling approaches were used. The information was gathered by sending a structured questionnaire to the responders. The population size was determined to include all workers of commercial banks. A sample size of 99 was chosen. The respondents were asked to rate their agreement on a scale of one to five, with one being "strongly disagree," two being "disagree," three being "neutral," four being "agree," and five being "strongly disagree." The researchers used descriptive statistics, correlation, and multiple regression analysis to find out the workforce diversity and employees performance of the bank by using SPSS software. The following table shows the demographic characteristics of the respondents:

Table 1: Demographic Profiles of Respondents (n = 99)

Respondents	No. of Responses	Percentage
Gender		
Male	58	58.6
Female	41	41.4
Age		
20 - 29	74	74.7
30 -39	23	23.2
40 -49	2	2
Ethnicity		
Dalit	1	1
Janjati	47	47.5
Others	51	51.5
Education		
Bachelor's level	34	34.3
Master's level	64	64.6
PhD	1	1
Department of the Bank		
Cash and Deposit	23	23.2
Executive	1	1
Finance	9	9.1
Loan and advance	23	23.2
Marketing	5	5.1
others	38	38.4
Work Experience		
1- 5 years	82	82.8
6 – 10 years	14	14.2
11 - 15 years	3	3

(Source: Primary Data)

Table 1 shows the demographic profiles of respondents. The number of male respondents is 17.2 % is higher than the number of female respondents. It means that commercial banks have still male-dominated in terms of gender and the low responses of females may be the unwillingness to participate in the survey. From the survey, it was found that out of 99 respondents 74.7 % are within the age of 20 to 29 years, 23.2% are between 30 to 39 age group and only 2% are found between 40 to 49 age. It means young employees are more engaged in the banks. In terms of ethnicity, 1 % is found in Dalit, 47.5 % are found in Janjati and the rest of the respondents are in other categories. Likewise, in terms of education, 64 respondents are holding master level, 34 are in bachelor's level and only 1 respondent is found to be a PhD holder. The employees of the Nepalese bank have to be found a high level of qualification. 23 respondents are found in the cash and deposit section, 9 respondents are in the finance department, 38 respondents in others, and 1, 5, and 23 participants found in executive, marketing, and loan and advances respectively. 82.8 % of the participants found work experience between 1 to 5 years, 14.2 % in 6 to10 years, and the rest are in 11 to 15 years.

6. Data Analysis and Findings:

6.1 Gender Diversity

S.N	Statement	Mean	SD
Table 2: Gender Diversity			
1. This organization offers equal opportunity for m 2. ales and females in terms of growth and development.		3.99	0.875
3. Management is committed to helping the women in 4. work related to the organization.		3.73	0.855
5. The evaluation system for success is expected to be higher in men than women.		2.87	1.094
6. Gender diversity plays a great role in making a corporate image of a bank.		3.45	0.918
7. The bank hires women for good jobs because they are good listeners.		2.97	1.054
8. Gender diversity helps to develop the overall performance of the bank.		3.62	0.944

(Source: Primary Data)

Table 2 shows the results of gender diversity in a bank. The employees feel that they have got an equal opportunity in terms of growth and development in a bank and female employees are found to be happy with the management team. Additionally, to make a good corporate image of the bank, gender diversity plays an important role in a bank. From the survey, participants feel that Nepalese bank hires more female employees than the male because they are good listeners. From the survey, an evaluation system for success rate was found to be more in male staffs than female in a workplace.

6.4 Ethnic Diversity

S.N	Statement	Mean	S D
Table 5: Ethnic Group Diversity			
1. The ethnic diversity group is most likely to solve a complex problem in a bank.		3.37	0.852
2. Ethnic diversity creates a variety of perspectives related to the development of the bank.		3.55	0.773
3. The ethnic diversity group affects the performance of employees.		3.28	0.846
4. The bank treats equally all employees even there came from a different ethnic group.		3.95	0.896
5. The ethnic diversity group generally improves the quality of decision-making.		3.38	0.792
6. The professional relationship between employees is not affected by the diversity of the ethnic group.		3.79	0.918

(Source: Primary Data)

Table 5 reveals the results of ethnic diversity in a bank. Respondents agree that the complex problem of a bank can be solved by the diversity of the ethnic group and also creates a variety of perspectives related to the development of a bank. Performance of employees and improves the quality of decision making are also affected by the ethnic diversity group. Further, the study shows that bank treats equally all employees even though there came from different ethnic group and also feel that professional relationship between employees is not affected by ethnic diversity.

6.3 Education Diversity

S.N	Statement	Mean	SD
Table 4: Education Diversity			
1. Growth opportunity exists for only those employees who have a higher qualification in education.		3.31	0.996
2. Lack of confidence in employees due to the lower level of education.		3.17	1.011
3. The bank gives equal treatment to all employees in terms of diversity of educational background.		3.23	0.956
4. The organization assigns the different tasks to the staff based on their qualification.		3.24	1.060
5. Employee qualification is also the key factor for the growth and development of the organization.		4.15	0.705
6. High level of qualification staff deals better with customers in a bank than low level.		3.30	1.102

(Source: Primary Data)

Table 4 shows the results of education diversity in a bank. Employees feel that having higher education has a good chance of growth opportunities. Different job assignments to the employees in a bank are also based on the qualifications. Work confidence is very important in a job, so participants feel that a low level of qualification of education declines the confidence in employees. Bank treats equal treatment to all the employees in a workplace even though they came from a different educational background and also agree that higher employee qualification is also one of the key factors for the growth and development of a bank.

		Employees performance	Gender	Ethnic Group	Education
Employees performance	Pearson Correlation	1			
	Sig. (2-tailed)				
Gender	Pearson Correlation	.584**	1		
	Sig. (2-tailed)	0.000			
Ethnic Group	Pearson Correlation	.739**	.241*	1	
	Sig. (2-tailed)	0.000	0.016		
Education	Pearson Correlation	.703**	0.135	.385**	1
	Sig. (2-tailed)	0.000	0.183	0.000	
	N	**99**			
**. Correlation is significant at the 0.01 level (2-tailed)					
*. Correlation is significant at the 0.05 level (2-tailed)					

Data Analysis and Results

Table: 5 Correlation Analysis between Workforce Diversity and Employees performance

Table 5 shows the Pearson correlation between different diversity variables such as gender, education and ethnic group with employees' performance of a bank. The result concluded that gender and employees' performance is a moderate positive and significant correlation with them. Further, education and ethnic group are highly positive and significant relationships associated with employees' performance. The results of the study believed that diversity variables have stable and positive correlations with the work performance of the employees in commercial banks of Nepal.

Model

To find out the relationship between workforce diversity and employees' performance of the bank, the study proposed a linear model as follows:

Employees Performance = α + β1 gender + β2 Ethnic group + β3 Education + ϵ

The model summary is presented below:

Table 6: Regression Analysis
Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.953ᵃ	0.909	0.906	0.10988

(Source: Primary Data)

Table 6 shows the R-Square value is 0.909, which indicates that the three independent variables (gender diversity, ethnic diversity, educational diversity) will explain 90.9 % of the dependent variable, while other factors can explain the remaining 9.9 %.

	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.473	3	3.824	316.759	.000ᵇ
Residual	1.147	95	0.012		
Total	12.621	98			

(Source: Primary Data)

The p-value is 0.000, which indicates that the degree of significance is less than 1%. Furthermore, the calculated F (316.759) exceeds the F-critical (2.46) value which proves that the model is fit in predicting the influence of the independent variables on the employees' performance of the commercial banks.

Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.301	0.104		2.884	0.005
Gender	0.273	0.021	0.410	12.851	0.000
Ethnic group	0.311	0.023	0.458	13.375	0.000
Education	0.335	0.024	0.471	14.039	0.000

(Source: Primary Data)

Based on the above results, the equation for the regression model is: Employees Performance = 0.301 + 0.273 gender + 0.331Ethnic group + 0.335 Education + ε

From the regression, the coefficients table shows the relationship between the workforce diversity and employees' performance of the bank. To analyze the data, the unstandardized beta value would be considered for the study. Employees' performance in the commercial bank was found to be 0.301. A unit increase in gender diversity would result in a 0.273 increase in employees' performance if all other independent factors remained unchanged and the relationship is significant as depicted by the p-value of 0.000. Similarly, a 1 unit rise in ethnic group diversity in the commercial bank would result in a 0.311 increase in employees' performance if the other independent variables remain constant and the relationship is significant as the p-value is 0.000 which is less than 0.005. At last, a 1 unit rise in education diversity in the commercial bank would result in a 0.335 increase in employees' performance if the other independent variables remain constant and the relationship is significant as depicted by the p-value of 0.000.

8. Conclusion

This study is conducted to analyze the relationship between the workforce diversity variables (gender, education ethnic group, and educational diversity) and employees' performance of the Nepalese commercial banks. From the study, an ethnic group such as Janjati and other caste are found more in the bank. The management of the bank gives more priority to job opportunities that have a higher degree of education. The study also showed that more employees were working in the cash and deposit department. Generally, the work experience of the employees was found between 1 to 5 years. There is a positive and significant relationship between gender and employees' performance in the banks. Gender diversity refers to gender equity, gender ratio, female employees, fair consideration of the female in hiring, has a great impact on the performance of employees. Further, the study concluded that ethnic group has a high positive relationship with employees' performance. Ethnic diversity groups make better decisions, lead to more creativity and new innovative performance due to heterogeneous combination of an ethnic group in a bank. At last, there is a positive association between education and employees' performance. A high level of education helps employees to increase job performance and make good decisions related to the particular subject matter of the organization. Educated employees are important human assets of the organization and had a great impact on employees' performance of the bank.

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Role of Mindfulness in the Prediction of Stress Resilience and Psychological Well-Being of Medical Practitioners

Pooja Garg[a] and Azizuddin Khan[b]

[a]Department of Humanities and Social Sciences, Indian Institute of Technology Roorkee, Uttarakhand, INDIA
Tel: +91 01332 285477, E-mail:pooja.garg@hs.iitr.ac.in
[b]Department of Humanities and Social Sciences, Indian Institute of Technology Bombay, Mumbai, INDIA
Tel: +91 22 - 2576 7383, E-mail: aziz@hss.iitb.ac.in

Abstract

Medical practitioners play a critical role in prolonging life and improving the quality of life of public health. As a result, practitioners experience overconsumption of energy, stress, and undermined levels of well-being. The study aims at assessing the state of mindfulness and stress resiliency profile of medical practitioners, thereby influencing their levels of psychological well-being. The study was conducted on data collected from 250 medical practitioners. Findings indicated that mindfulness is a significant predictor of stress resiliency and psychological well-being. In addition, stress resiliency is a significant mediating factor in determining the relationship between mindfulness and well-being. The study results accentuate the positive psychology implications in the medical discourse to capture the psychological strengths of medical practitioners and contribute to their optimal functioning.

Keywords

Mindfulness, Stress Resiliency, Psychological Well-Being, Medical practitioners

Introduction

The position of medical practitioners in society remains indispensable and has involved them spearheading the arduous task of providing optimum medical aid to the patients. The sharp acceleration in patient demands, appropriation of healthcare services, and the requirement for more highly marked health care services have led to a highly vulnerable position of medical practitioners. Under such circumstances, practitioners experience higher levels of stress and burnout than other occupational groups, such as long working hours, poor ergonomics, insomnia, loss of autonomy with increased responsibility, impaired work-life balance, death on a daily basis, and fear of lawsuits for medical malpractices. (Liu et al., 2020; O'Dowd et al.,2018;Chaukos et al., 2017; Elmore et al., 2016; Malik et al., 2016; Miyoshi et al., 2016; Ratnakaran et al., 2016; Salpigktidis et al., 2016; Talih et al., 2016).

Nevertheless, medical practitioners are under constant pressure and sometimes respond to public health challenges of a magnitude not seen for generations (Tan et al .,2020; Walton et al., 2020; Sun et al.,2020; Zhang et al.,2020; Unadkat and Farquhar, 2020). Walton et al. 2020 identified acute *physical* (palpitations, nausea, insomnia, abdominal pains, hyperarousal); *behavioral* (recklessness, irritability, detachment, drug or alcohol abuse); *emotional*(anhedonia, mood swings, numbness, and anxiety) and, *cognitive*(rumination, hypervigilance, and confusion)stress reactions, which affect practitioners' well-being. Other factors as intermittent de-structuring of the organization, ambiguity in job roles, loss of autonomy, non-availability of senior support, and insufficient organizational resources also append to the stress levels of the practitioners. In addition, practitioners also reported *"moral injury"* and *"moral distress,"*; leading decision-making to contravene the morals of the profession and differed from usual guidelines. Thus, leading to diminished self-efficacy and self-esteem, especially in high-stake situations (Austin et al., 2020).

Medical practitioners experience anxiety at the workplace as they worry about identity, ostracism, discrimination, harassment, and patient abuse. Resultantly, practitioners are more likely to suffer from emotional burdens (secondary traumatic stress, bereavement, or loss due to illness) (Bhuyan, 2020). The responsibility of such staggering experiences has shown up mental health issues and has witnessed eerie emptiness among practitioners. The authors thus, contend that the practitioners duly have a fundamental right to address their own emotional and psychological outcomes as part of the response to public health.

This has sparked interest in mindfulness, stress resiliency, and the psychological well-being of the practitioners. Mindfulness and stress resiliency in coaction can be beneficial in the successful coping of the work situations which are excessively demanding and stressful, thereby enhancing their well-being. The authors conjecture that with the positive psychology intervention, higher levels of mindfulness can lead to an increased level of stress resiliency, relational needs gratification, and better uncertainty tolerance, marked with enhanced performance and affective satisfaction. This would influence the well-being of medical practitioners, find meaning and joy in delivering healthcare services, deeply intensify patient-centeredness, enhanced patient-clinician communication and satisfaction. Based on the above, the authors seek to draw the attention of policymakers and the medical fraternity towards this critical but often neglected aspect of the medical profession in the Indian setting.

1. Conceptualization of the study variables

1.1.1Mindfulness: Mindfulness has emerged as an essential concept in health and workplace outcomes research. The term is generally characterized as a state of a continuum where an individual has an increased level of attention, alertness, and non-judgmental attitude about situations, including physical, psychological, and emotional experiences (Sharma and Kumra, 2020; Brown et al., 2007; Brown and Ryan, 2003). Mindfulness is an adaptation and practice that emerged from Buddhist theories(Ekman et al., 2005). The work of Kabat-Zinn (1994) popularized mindfulness theories in the Western world and pushed incorporating them into medical care. One of the most spelled out characterizations of mindfulness is *"conferring immersion in a purpose, in the present situation, and not being judgmental"* (Kabat-Zinn, 2013 and 1994). A nuanced yet straightforward definition of mindfulness can be given as *"the awareness that arises through intentionally attending in an open, caring, and discerning way."*Demarzo et al., 2015, and Langer (2014) defined mindfulness as *"a psychological state marked by consciousness while being non-judgmental; and an approach that denotes phenomenon which is an antithesis of mindlessness."*.

Researchers have also pondered on the significance of organizational mindfulness, which referred to*"as the extent to which an organization captures discriminatory details about emerging threats and creates the capability to act in response to those details swiftly and successfully* derive employees' ability to manage complexity, dynamism, and error-intolerance"* (Weick and Sutcliffe, 2015).

1.1.2 Stress Resilience: The term *"resiliency"* is originated from the Latin roots *"resiliere,"* meaning *"to jump"* or *"bounce back."* Resilience can be defined as a transformation mechanism to cope with hardships and distress. It is the process of successfully adapting well in the face of adversity, trauma, and threats or to some significant stress source. Perception of stress determines as an *"excessive demand"* or an *"opportunity"* and depends on an individual's *"interpretive habits."*Thus, the more the perception of stress is positive, the more the person bounces back from stress. Thomas et al. (1997)described three specific dimensions of interpretive styles and contributed to stress resiliency: *(a) Deficiency focusing* is a predisposition to emphasize what is erroneous while assessing one's performance. It is the cognitive tendency of converging on the negatives at the expense of the positive; *(b) Skill recognition* is the extent to which an employee attributes their success to their competencies and perceives positive outcomes as the manifestation of the skills they possess. And *(c)Necessitating* is illustrated as an individual's thought that a job is a rigorous call with no alternative(Thomas and Tymon, 1995, 1994, and 1974).

1.1.3Psychological Well-Being: The concept of well-being is multifaceted and has received considerable interest in recent years. The novel illustration of well-being is nested in Aristotle's (Ryff, 2014; 350 BCE/1998 CE) formulation of the highest human good, termed *"eudaimonia,"* and elaborated on achieving the best within us or the best of human functioning.

The extant literature has indicated that PWB is an affective experience and can be expounded as *"a person's cognitive and affective evaluations of his or her life"*(Garg et al., 2014; Diener, 1984). Ryff (1989) propounded a multifaceted representation of psychological well-being. These aspects circumscribe a span of well-being that includes a positive appraisal of self and previous life (*self-acceptance*); apperceived sustained development as a person (*personal growth*); to judge one's life as worthwhile (*purpose in life*); to savor healthy relationship with others (*positive relations with others*); the competency to conduct one's own life efficiently and to surrounding world (*environmental mastery*); and sensitivity towards one's vision and goals (*autonomy*)(Garg et al., 2014).

Literature Review and Hypothesis Development

Typical clinical and therapeutic interventions (such as MBSR, MBCT, and their variants) aim to improve the capacity to create more mindful states at the individual level (Perlman et al., 2010). Mindfulness has been linked to reduced mental, psychological, and psychiatric symptoms. The benefits also included decreased anxiety, depression, psychological distress, negative affect, enhanced well-being, and overall quality of life (Scheepers et al., 2019; Montero-Marin et al., 2015; Ljo'tsson et al., 2010; Delgado et al., 2010; Keng et al., 2011; Sears and Kraus, 2009). Along with increased hope for goal achievement, emotional well-being, and life satisfaction (Weinstein, Brown and Ryan, 2009; Fredrickson et al., 2008).

Very few studies have examined the beneficial effects of mindfulness at the workplace, such as enhanced performance (Nguyen et al., 2020; Sharma and Kumra, 2020; Hulsheger et al., 2013), adaptability and flexibility (Ostafin and Kassman, 2012), improved executive functioning (Zeidan et al., 2010), increased engagement at work (Sharma and Kumra, 2020), and astute judgment (Kiken and Shook, 2011) of employees. Mindfulness is effective in helping employees in enduring stress and anxiety (Chin et al., 2019; Galante et al., 2018; Ramasubramanian, 2017; Kwok, 2016; Sharma and Rush, 2014; Shapiro et al., 2006). As a result, helping reduce psychological distress and enhance the well-being level of employees (Sharma and Kumra, 2020; Bamber et al., 2016; Coffey et al., 2010; Cash and Whittingham, 2010; Baer et al., 2008 and 2006; Brown and Ryan, 2003). However, the interventions do not adequately address the organizational issues in the medical discourse.

Based on the tenets of positive psychology, the authors suggest that mindfulness can curb ineffective behaviors resulting from rigid self-conceptualization and make practitioners competent in interpreting default, inflexible, and defensive responses in challenging situations. It has been proposed that mindfulness can prove to be an intrinsic resource(Liu, 2021) for medical practitioners to confront frequent stressful situations and become resilient to stress (Roche et al., 2014), thereby enhancing their well-being levels.

The study aims to explore the influence of mindfulness on stress resiliency and the psychological well-being of medical practitioners. The study used the constructs to enable practitioners to reconnect and become aware of being purposeful, non-judgmental, and attentive to the present moment in a stressful practicing environment (Jha, 2021; Verweij et al., 2018). The study attempts to offer a mindful orientation to the practitioners through HR practitioners to foster an optimal level of mental health while deriving personal or intrinsic resources, thereby making clinical encounters more flourishing than languishing(Gibbons, 2015).

The study sets out a robust theoretical framework for system-level response in forming, repairing, and revising the productive behavioral contours for a strengthened sensitivity to integrity, connection, and distinctiveness among medical practitioners(Lalande, 2016). The authors propose to shift to a *"salutogenesis model"*(Gray, 2017; Bringsen et al., 2012; Lundman et al., 2010; Rabin et al., 2005) from the *"pathogenesis model,"* and aims to help medical practitioners overcome the challenges, threats, and stresses of their profession and cultivate resilience to stress and well-being. The study attempts to offer a model of coping mechanism based on nurturing purposive and gratuitous forms of motivation,self-modulated learning, and executive functions in the state of sustained attention and mental alertness, which also has a carry-over effect on the other domains of life as well.

Mindfulness, stress resiliency, and psychological well-being among medical practitioners can be a gateway approach to an indisposed studied area in Indian healthcare organizations. The study can prove to be a succor for promoting a systematic way of perceiving problems of the practitioners, boosting attention and acceptance, and a greater sense of eudaimonic well-being (Monteiro et al., 2017). The current study extends to empirically advance the understanding of the influence of mindfulness on stress resiliency and well-being of medical practitioners at the organizational and system level. Based on the above, the authors document the hypotheses as:

H1: Mindfulness is significantly and positively related to the stress resiliency of medical practitioners

H2: Stress resiliency is significantly and positively related to the psychological well-being of medical practitioners

H3: Mindfulness is positively related to the psychological well-being of medical practitioners.

H4: Stress resiliency will intercede the association between mindfulness and the psychological well-being of medical practitioners.

Method

Sample and Data Collection Procedure: A sample

of 250 medical practitioners was selected to test the hypotheses for the study. The sample has been drawn from different private and government hospitals in India. The participants were approached individually, and approval was obtained to carry out the research. The chosen sample is a non-probability purposive sample, and the ethical practices of anonymity and confidentiality of the responses were ascertained (Garg et al., 2019). Participation was voluntary. The demographic framework of the respondents is shown in **Table 1**.**TABLE 1- DEMOGRAPHIC VARIABLE**

Demographic variable		N = 250	%
Gender	Male	142	56.8
	Female	108	43.2
Marital Status	Married	118	47.2
	Unmarried	132	52.8
Qualification	MBBS	150	60
	Other specialists	100	40
Type of Organization	Public	45	18
	Private	205	82
Work Experience	1-5years	76	38.8
	6-10 years	97	30.4
	11-20 years	47	18.8
	More than 20 years	30	12
Age	25-35years	100	40.0
	36-45 years	90	36.0
	46 and above	60	24.0

3.1 Measures:

The data for the study has been collected by administering the following instruments:

3.1.1 Mindfulness: This construct was measured with the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R), developed by Feldman et al. (2007). The scale assesses trait mindfulness based on 12 statements and connotes four sub-components *(i)Attention* (e.g., It is easy for me to concentrate on what I am doing);*(ii) Present-focus*(e.g., I am preoccupied with the future); *(iii)Awareness*(e.g., I can tolerate emotional pain), and *(iv)Acceptance*(e.g., It's easy for me to keep track of my thoughts and feelings). The responses ranged on a 4-point scale from 1= rarely/not at all to 4= almost always. The internal consistency of the scale ranges from .61 to .81.

3.1.2 Stress Resiliency: This variable was measured using the Stress Resiliency Profile (SRP) developed by Thomas and Tymon (1995, 1994, and 1974).This is a self-scoring assessment tool used to identify three specific thought patterns or *"interpretive habits"* which influence stress as*(i)Deficiency focusing(e.g., I tend to worry about whether things will go wrong)*; *(ii)necessitating(e.*g., *I often find myself turning other requests of me into mandates or obligations*), and *(iii) skill recognition(e.g., When things are going well, it is easy for me to recognize how my skills have contributed to it*). This tool consists of 18 items and is a 7-point scale. The score extends from 1=strongly disagree to 7= strongly agree. The reliability of the subscales is considerably high for deficiency focusing (.87), necessitating (.74), and low skill recognition (.85). And for the overall scale, the coronach reliability ranges between .76 to .86.

3.1.3 Psychological Well-Being (PWB**):** Psychological well-being has been measured using an 18-items PWB scale developed by Ryff (1989). The scale measures the degree of well-being based on six dimensions, namely: *(i) autonomy (e.g., My decisions are not usually influenced by what everyone else is doing)*(0.83), *(ii)environmental mastery*(e.g., *In general, I feel I am in charge of the situation in which I live*) (0.86), *(iii)personal growth* (*e.g., I think it is important to have new experiences that challenge how you think about yourself and the world*) (0.85), *(iv)positive relations with others* (*e.g., Most people see me as loving and affectionate*) (0.88),*(v)*purpose in life (*e.g., I enjoy making plans for the future and working to make them a reality*)(0.88), and *(vi)self- acceptance*(*e.g., When I look at the story of my life, I am pleased with how things have turned out*)(0.91). The score ranges from 1 = strongly disagree to 6 = strongly agree. The figures within the parenthesis represent the cronbach alpha values of the PWB dimensions.

3.2 Data Analysis:

The collected responses were analyzed using SPSS v.23 and AMOS v.23.At the outset of the data analysis, the descriptive statistics for the demographic variables are shown in **Table 1.** The calculated means, standard deviations, and inter-scale correlation coefficients for all the study variables are shown in **Table 2**. The correlation coefficient results offer preliminary support for a significant and positive relationship among the study variables (Garg et al., 2019).

The preliminary investigation revealed that the scales used in the present study are within the acceptable range of reliability coefficient values (that is, 0.60 and above)(Pradhan et al., 2021; Sekaran, 1992). The scales were levied to exploratory factor analysis (EFA), later confirmatory factor analysis (CFA) for testing the arrangement of factors of the scales, and stepwise regression analysis(Garg et al., 2019).

Table 2 - Means, standard deviations, and correlation coefficients for the study variables.

*Notes: DF- Deficiency Focusing; N-Necessitating; SR- Stress Resiliency; PWB- Psychological Well Being; **Correlation is significant at the 0.01 level; *Correlation is significant at the 0.05 level.*

Study Variables	Mean	S.D	SR-DF	SR-N	PWB
Mindfulness-Attention	3.65	1.77	.55**	.36**	.31**
Mindfulness-Awareness	11.09	3.25	.65**	.41**	.47**
Mindfulness-Acceptance	3.95	1.57	.48**	.50**	4.9**
SR-Deficiency Focusing	31.13	5.78	1	---	-.35*
SR-Skill Recognition	32.05	5.11	---	1	.43**
PWB	81.70	7.94	---	---	---

3.2.1 Factor structure of the study scales: Based on the CFA, a three-factor structure(*attention, Awareness, and Acceptance*) was explained by 10 items of the mindfulness scale. The analysis revealed a good model fit for the three-factor model,with the chi-square(32)=53.76 at p < 0.01, CMIN/df = 1.68, comparative fit index (CFI) = 0.83, root mean square error of approximation (RMSEA)=0.04. CFA was performed to test whether the novel factor structure of the stress resiliency scale fits the data. It was found that the items loaded negatively for the factor Necessitating and have been dropped from the analysis. Hence, two factors have been derived for further investigation as Deficiency Focusing and Skill Recognition. CFA was performed again to test whether the newly obtained two-factor model of stress resiliency scale fits the data. The analysis derived an adequate fit for the two-factor model (Malik and Garg,2017)with the fit indicators as: chi-square (45) = 171.18 at p < 0.01, CMIN/df = 3.80, CFI = 0.81, root mean square error of RMSEA = 0.09, respectively.

For the Psychological Well-being scale, CFA was performed to test whether the obtained factor structure of the PWB scale with 18 items fits the data or not. It was found that the first and second-order model demonstrated poor fit indices. The one-factor model *(unidimensional model)* derived an acceptable fit for the model with the fit indices as: chi-square (124) = 161.35 at p < 0.01, CMIN/df = 1.30, comparative fit index (CFI) = 0.91, root mean square error of approximation (RMSEA) = 0.093 respectively.

3.2.2 Convergent and Discriminant Validity: This study employed standard loadings, composite reliability (value is greater than .60), and average variance extracted (AVE) to determine the convergent validity of the study scales. The results confirmed the criteria for convergent validity, that is, factor loadings>.65(Cable & DeRue, 2002).

The study further raises the possibility of common method bias, as the data collection has a single data source. The study variables were loaded on a single factor based on Harman's single-factor approach. The modification statistics of Harman's single-factor model indicated that the fit of the single factor model was worse,as reported based on the values χ^2 (df) = 2640 (382); $\chi2/df$ =6.91; GFI=0.47, CFI=0.36, NFI=0.51, RMSEA=0.26). The results confirmed that common method bias was not a threat to this study.

3.2.3 Stepwise Regression Analysis: The index of stepwise regression analysis was executed to examine the influence of mindfulness on medical practitioners' stress resiliency and psychological well-being. The derived values of stepwise regression analysis are shown in **Table 3.** The stepwise regression equation entered all the three dimensions of mindfulness (attention, awareness, and acceptance). It was found that attention, awareness, and acceptance anticipated deficiency focusing with the computed R as: 0.65, 0.69, and 0.59(β value as 0.63, 0.55, and 0.46, significant at p< .01), respectively. The dimensions of mindfulness (attention, awareness, and

acceptance) predicted skill recognition with the calculated R as: 0.26, 0.34 and0.35 (β value as: 0.46,0.42, significant at p < .01 and 0.31 respectively, not significant at p <.01).We can interpret that attention, awareness, and acceptance are the significant predictors of deficiency focusing and skill recognition, except that acceptance, is a weak predictor of skill recognition.

Table 3: Stepwise Regression Analysis for the Prediction of Stress Resiliency of Medical Practitioners, with the Independent Variable as Mindfulness and Dependent Variable as Stress Resiliency

Variables	R	R^2	Ad. R^2	R^2 Change	F-Value	DF	Beta values	t-value
D.V: SR- Deficiency Focusing **I.V: Mindfulness**								
Attention	0.650	0.422	0.419	0.422	7.00#	1,298	0.631	2.81**
Awareness	0.692	0.486	0.481	0.486	14.31#	1,297	0.553	4.60**
Acceptance	0.591	0.384	0.379	0.384	9.53#	1,296	0.462	5.24**
D.V: SR- Skill Recognition **I.V: Mindfulness**								
Attention	0.264	0.070	0.067	0.070	22.35#	1,298	0.462	5.05**
Awareness	0.345	0.119	0.113	0.049	20.00#	1,297	0.421	4.12**
Acceptance	0.351	0.123	0.114	0.004	13.83#	1,296	0.316	1.19

*Notes: SR- Stress Resiliency; ** significant at the 0.01 level; *significant at the 0.05 level; # significant at the 0.001 level*

Table 4 represents the prediction of the PWB of medical practitioners based on stress resiliency. It has been indicated that deficiency focusing and skill recognition has predicted psychological well-being with the calculated R as: 0.15 and 0.22(β value as0.18, p> .01 and 0.22 respectively, significant at p < .01.

Table 4: Stepwise Regression Analysis for the

Prediction of PWB of Medical Practitioners, with the Independent Variable as Stress Resiliency and Dependent Variable as PWB

Variables	R	R^2	Adj. R^2	R^2 Change	F-Value	DF	Beta values	t-value
D.V: PWB **I.V: Stress Resiliency**								
SR-Deficiency Focusing	0.153	0.321	0.317	0.321	5.51#	1,298	0.180	1.83
SR-Skill Recognition	0.220	0.048	0.045	0.048	15.12#	1,297	0.220	3.88**

*Notes: SR- Stress Resiliency; PWB-Psychological Well-Being; ** significant at the 0.01 level; *significant at the 0.05 level; # significant at the0.00.*

Table 5 indicates the prediction of the well-being of practitioners. The results showed that the dimensions of mindfulness (attention, awareness, and acceptance) have significantly predicted the PWB of medical practitioners with the calculated R-value as: 0.56, 0.62, and 0.69 (β value as 0.49, 0.57and 0.58 respectively,

significant at p < .01. Thus, we can say that attention, awareness, and acceptance are the significant predictors

of PWB, where acceptance is the strongest predictor of PWB.

Table 5:Stepwise Regression Analysis for the Prediction of PWB of Medical Practitioners, with the Independent Variable as Mindfulness and Dependent Variable as PWB

VariableS	R	R²	Adj. R²	R² Change	F-Value	DF	Beta values	t-value
D.V: PWB I.V: Mindfulness								
Attention	0.561	0.374	0.365	0.374	14.91#	1,298	0.491	3.73**
Awareness	0.627	0.482	0.477	0.482	12.46#	1,297	0.572	3.10**
Acceptance	0.691	0.463	0.458	0.463	8.34#	1,296	0.584	4.10**

*Notes: PWB-Psychological Well-Being; ** significant at the 0.01 level; *significant at the 0.05 level;# significant at the 0.01 Level.*

3.2.4Mediation Analysis: Preacher & Hayes (2004)analysis was performed to understand the mediating effect of stress resiliency on the relationship between mindfulness and PWB. The mediation analysis was conducted using 5,000 bootstrap samples and a 95 percent confidence interval ranging from 0.05 to 0.17. **Table 6 and Figure 1** represent the statistical outcomes of the mediation analysis.

Table6: Results of mediation analysis

Mindfulness (Independent Variable)	*Stress resilience (path a-Effect of IV on MV)* β	*Psychological well-being (path c-Effect of IV on DV)* β	*Indirect Effect (path c-c')* B
Stress resilience (path b)	-	0.51**	---
Mindfulness	0.54**	0.30**	0.16**

*Notes: n = 300. Path a is the independent variable (mindfulness) to mediator (stress resilience) relationship; b is the mediator to the dependent variable (psychological well-being) relationship; Path c is the simple effect of the IV on the DV without the influence of the mediator; Path c-c' shows the indirect effect of the IV on the DV through the mediator, tested for significance in 5,000 bootstrap samples (tested at **p < 0.01). *As per (Preacher and Hayes's, 2004) method.)*
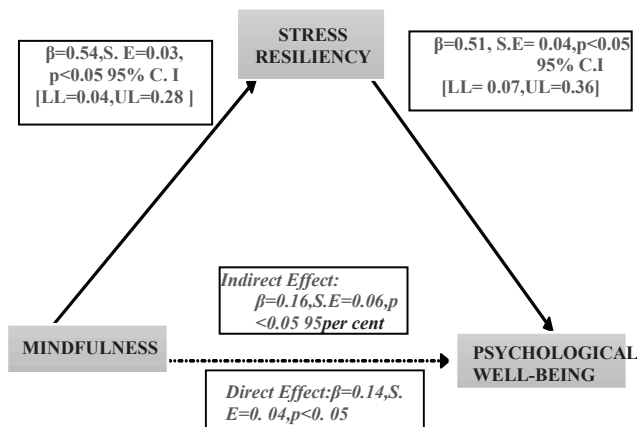

Figure 1: Path Coefficients of the model

The results were found to be significant and in line with the hypotheses. H1 stated that mindfulness has a positive association with stress resiliency ($\beta = 0.54$, $p < .01$). Stress resiliency had a positive association with PWB ($\beta = 0.51$, $p < 0.01$).Hence, supporting H2. H3 was confirmed stating that mindfulness adheres to a sound association with PWB, with the β-value of 0.30, $p < .01$). H4 stated that stress resiliency would intercede the relation between mindfulness and PWB and received fractional support since the effect of mindfulness on PWB ($\beta = 0.30$, $p < .01$) diminished with the existence of stress resiliency. Still, it continued to be significant ($\beta = 0.17$, $p < .01$).

4. Discussion

The present study investigated the influence of mindfulness on medical practitioners' stress resiliency and psychological well-being. A moderately high correlation has been observed among the study variables. The results indicate a state of *"flow"(*Csikszentmihalyi,1990), marked with enhanced cognitive plasticity, emotion modulation, and positive self-evaluations. The results also suggest that mindfulness and stress resiliency would lead to the high propensity of reduced long-term allostatic overload, avoidance of moral injuries, and curbing the tendency of expeditious judgment based on prior remedial techniques (Robinson, 2018; Brown & Ryan, 2003).

The positive psychology outlook further supports the results that mindfulness would assist medical practitioners to *"step outside"* the psychical forces that propel *"egoic functioning"* (Majstorović et al., 2008) and enhance coping with emotional and physical challenges (Duchemin et al., 2015; Westphal et al., 2015; Hölzel et al., 2013) and become resilient to stress.

The findings suggest that mindfulness would foster the well-being of practitioners and enable practitioners to gratify their psychological needs(relatedness, autonomy, and competence), facilitates self-directed functioning for shouldering high responsibilities, and accentuate medical efficacy (Eberth & Sedlmeier, 2012; Leroy et al., 2013; Weinstein & Ryan, 2011). The significant relationship between mindfulness and PWB among medical practitioners would augment public spirit, collegiality, mentorship, greater team fellowship, and abet psychological balance.

Previous researches investigated mindfulness in clinical settings with the predominant focus on treating psychological illness, remission, and reduction of clinical syndromes(chronic depression, anxiety,

personality disorder, chronic pain, and many other conditions)(Israel,2006) and rehabilitation of post-traumatic stress disorders(Mellor et al., 2016). The authors outlined the positive influence of mindfulness through *"reperceiving"*(Shapiro et al., 2005) or *"decentring"*(Fresco et al., 2007). And detaching oneself from *"distressing qualia"* and *"pulling themselves together"* to maintain self-esteem, bolsters the capacity for emotion regulation indicating eudaimonic well-being.

Stress resiliency substantially predicted psychological well-being, leading to clinician well-being and improved patient-clinician relationship (Darbeda and Etchevers, 2017). The results resonate with upward spirals of positive emotions, which increases mental flexibility and adaption to adversity (Matheson et al., 2016; Sarkar & Fletcher, 2014; Epstein & Krasner, 2013; Tugade& Fredrickson, 2004).

The results further predicted that stress resiliency mediated the relationship between mindfulness and PWB. Mindfulness would foster clear perception and insightful understanding of events, promote self-regulation(Deci &Ryan, 2008), appropriate decision-making, and eudaimonic well-being (Ryan et al., 2006). This may reflect a sense of significance, pride, and challenge underlying engagement (Jeve et al., 2015) ; associated with resilience through increased positive affect (Otto et al., 2010).

The results empirically support the proposed framework and can be considered as a *"growth model"* for a more benign assessment of stressful conditions and that practitioners must use more of this approach in coping with stressful demands; curb the tendency of decision avoidance; and promote well-being (Weinstein et al., 2009).

4.1Future Implications: The study carves a niche for the healthcare organizations to redesign systems to enhance inter and interprofessional teamwork to attenuate perceived inequity, increase gratification of relational needs, and grow a courageous demeanor. The proposed framework can be supported with the beneficial outcomes of mindfulness interventions at the organizational level, such as Mindfulness-Based Stress Reduction Program (Kabat-Zinn, 2013); Mindfulness-based Cognitive Therapy(Segal, Teasdale, and Williams, 2002); Mindfulness-Oriented Recovery Enhancement Program (Garland, 2012): Mindfulness-Based Relapse Prevention(MBRP) Program (Bowen, Chawla, and

Marlatt, 2010), and the 4-C Approach to Stress Resilience: Calm-Clarity-Choice-Change. These interventions are the systematic procedure by which attention skills can be developed, emotional modulation is regulated, and prolonged thinking is significantly reduced. These interventions play a significant role in decreasing dysfunctional cognitive processes such as judgment, reactivity, thought suppression, anxiety, and worry. The study aims to capacitate the reappraisal of the discordant thoughts and eliminate negative thoughts and emotions; increases psychological flexibility by disassociating oneself from a negative evaluation of stressful situations to the positive ones, resultantly fostering resilience and meaning in the face of adversity. Cultivate awareness and understanding of provocative, automatic, and destructive behavioral patterns. And promote calm, clarity, choice, and change to make apt decisions. (Sinha., 2020). Thus, fostering relationships and connections to interact with others and nurturing flourishing interrelationships and work-life balance (Sinha,2020).

The findings suggest that the dynamic relationship between mindfulness-stress resiliency and psychological well-being fully supports the changes for eudaimonic engagement of medical practitioners(Dane, 2011). The study certainly contributes to healthcare organizations: *First*, the study bolsters to be a precursor for the optimal functioning of practitioners through mindfulness, stress resiliency, and psychological well-being. *Second*, based on the results, it is expected that the induction of varied mindfulness training programs will facilitate the essence of volitionally responding to significant events, indulging in self-regulation, and prepare doctors to cope with the *'unavoidable'* stressors (Horsfall,2014). *Third,* the study offers scope for initiating research connoting affiliative and situational leadership built on critical judgment and decision-making, flexible behavioral adaptations, followed by reduced rumination, and improved attentional performance(Arendt et al., 2019; Baron et al., 2018; Wasylkiw et al., 2015). *Fourth,* mindfulness and stress resiliency competency should be imparted and modeled in the medical curriculum and training. These include managing one's own health needs, stress and exhaustion, recognizing and helping colleagues overcome stress, anxiety, and disapproving of bullying and harassment.

Combined with the findings, it can be stated that the proposed framework can be potentially efficacious for redefining and reimagining the jobs of medical practitioners in a personally meaningful way which would also contribute to crafting a process of implementation and integration in the medical mainstream.

4.2Limitations of the study: Despite the contributions that our research makes, it also presents some limitations which need to be mentioned clearly. *First*, the three variables have been measured in sync simultaneously. The authors believe that carefully evaluating personality traits can make the study more robust. *Second*, future studies should test the proposed model by expanding the study to a heterogeneous sample. The sample can be exposed to various medical practices or jobs, such as paramedical personnel (ambulance drivers, midwives, nurses, laboratory technicians, physiotherapists, and others). *Third,* the study can be extended to qualitative analysis based on peer-review ratings and in-depth clinical interviews. *Fourth*, the study can be extended to a sample of practitioners working in rural areas to represent a detailed mental state of the practitioners and help them build more intrinsic resources as resiliency to stress and well-being.

Acknowledgement

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Importance of Government role for 5G in Nepal

Pratima Pradhan (Ph.D)
pratima.pradhan@kecktm.edu.np
T.U., Kathmandu Engineering College, Research Unit

Abstract

Telecommunication advancement has evolved in mobile services up to the fifth generation with the coming of 5G systems. The evolving technology not only comes with one category of usage of wireless services, but includes three categories of usage which requires different strategies for implementation. The advantages of these categories of use cases have been widened with socio economic benefits globally. However, the full deployment of the three categories of use cases have had support in various ways by the good will support of the governments they are hosted in. This paper discusses the way out reach that can be taken by Nepal Government to adopt the leap frog technology road to socio economic growth of the country by adopting this technology.

Keywords

*5G, Government, Use Cases*

Introduction

5G systems had evolved from other lower generation incorporating vertical use cases of very wide diversity. Because of this, 5G can be a catalyst for digital transformation of the country like Nepal. However, studies have shown that along with the evolution adaptation of technology in many countries by Telecommunication Service Providers (TSP), the host country government has shown participation and also in many cases have supported in many ways to have the 5G testing and rollout globally. Nepal as one of the long abiding Least Developed County has crawled to gain digitization speed with help of Communication Service Providers' services all over the nation. The rollout of 3G was first done by Nepal Telecom (2007) in South Asia and now the nation sees the wide mobile coverage from mostly the 4G and 3G deployment (Purpose of 3G in Nepal: Survey, 2016) by mainly three operators. Nepal Telecommunication service providers have always followed the trend of involving latest evolved technologies suited for the nation. However, the strategy to taking up 5G projects in the TSPs next project moves would be a very challenging one due to the wide and rapid changes in the services to be provided by 5G technology. A few of these reasons are:

- Requiring business models for different use cases that can be catered by 5G
- Low ARPU that can cover the Rate of Investment
- Backhaul readiness and Edge Computing

- Wide spectrum requirement for all use cases and timely acquisition
- Budgetary aspect for Spectrum, Equipment, Upgradation, Devices, Training, Testing and Research
- Policies regarding sharing of spectrum and infrastructure
- Wide coverages
- Replacement cost of older generation equipment and supporting equipment cost
- Adaptation of Use cases and their revenue

Background on Nepal's Communication Scenario

According to Nepal Telecommunication Authority, MIS October 2021, mobile subscribers in Nepal are 40,733,423 (including 321,140 CDMA subscribers) (Nepal Telecommunications Authority, 2021) catered by NDCL (Nepal Doorsanchar Company Limited), NCELL(Ncell Axiata Limited) and STPL (Smart Telecom Pvt. Ltd.) resulting to mobile penetration of 134.75 (population 30,229,966, Source: cbs.gov.np). Mobile penetration has
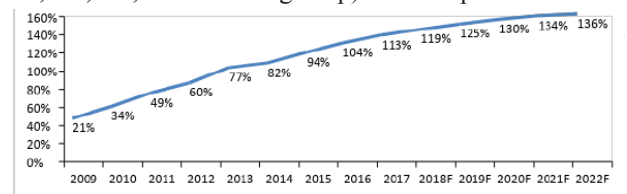

5G and Global deployment

Even after COVID-19 pandemic, 5G has continued to

grow resulting to this technology networks in 48 countries delivered by 113 operators accounting to 40% of global mobile subscriber base (GSMA, 2020). Another report of Ericsson has predicted that by the year of 2021 there would be 600 million 5G subscriptions globally inclusive of 23% of 5G handsets and 51% of IoT (Internet of Things) being the massive IoT subscriptions (Ericsson, 2021). This same report predicts that FWA (Fixed Wireless Access) will connect 800 million broadband subscriptions. By 2027, it is forecasted that 49% of mobile subscriptions would be of 5G type, accounting to 4.4 billion subscriptions all over the world with 5G uptake being faster than 4G.

Figure 2 Mobile Subscriptions by technology (billion) Source (**(Ericsson, 2021)**
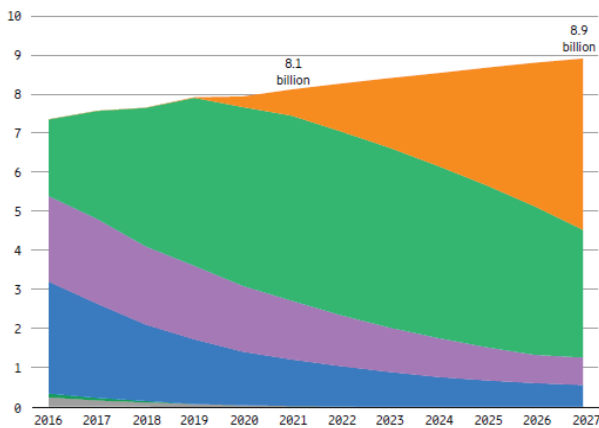
Use Cases of 5G

5G use cases grow everyday driven by innovation and 5G capability. Innovation and requirement envisaged for digital transformation has been realized by 5G capability. Higher speed of connectivity and lower latency has actuated many industry applications. Remote accessibility has widened largely with the features of the 5G technology. Advancement and technical creation of digital realization has brought about lesser digital divide globally. Although, developing and developed countries are adopting 5G in full fledged manner, the question lies as to whether Nepal, which is crawling to come out of the Least Developed Country status, can adopt this technology. In addition, this economically poor nation also serves its users with low rates of telecommunication services and tariff. The Rate of Investment of this technology based on the Average Revenue Per Unit rises a bigger hesitation in plunging with such projects.

Figure 3 Usage Scenarios for IMT for 3030 (Source: (ITU, 2015))
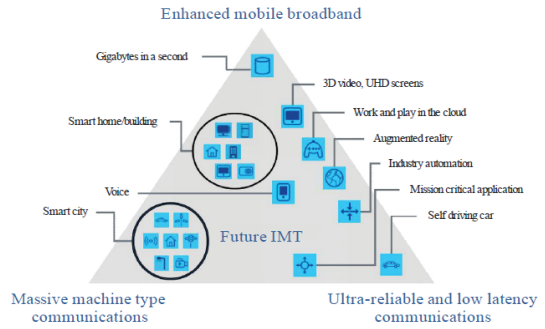
All uses cases may not be realistic and practical for Nepal due to its backward status both economically and industrial environments. On the other hand, this technology is appropriate and is an opportunity to leap frog into the digital transformation that has been envisaged in the digital framework strategy of government of Nepal (GoN, 2019). So if feasibility of 5G was to be discussed, there will be no doubt that in coming years telecommunication next evolution in Nepal would be 5G. However, this would need a lot of work in regard to preparation works of infrastructure, budget, spectrum availability and affordability, technical skill and knowledge and appropriate and suitable business models.

Socioeconomic Benefits of 5G

Pwc (PricewaterhouseCoopers) studied the economic impact of five sectors, namely, healthcare, smart utilities, consumer and media, industrial manufacturing, and financial services in order to understand the 5G impact on these sectors till 2030. This report forecasted that more than 80% of the economic potential is in healthcare application (projected to contribute US $ 530 billion to global GDP), smart utilities management (an additional US $ 330 billion), and consumer and media applications (US $ 254 billion more) and including other industries accounted to a estimated figure of US $ 1.3 trillion. This study on 5G's projected economic impact country wise, by 2030 (US $, 2019 values), shows best impact for Unites States with economic value of US $ 484 billion followed by China showing US $ 220 billion and India's prediction of US $ 42 billion (Pwc, 2021).

Government Role in Deployment of 5G

Governments of most nations have seen the socio economic benefits of the 5G deployment and are keen for the rapid 5G deployment race globally. Their role in policy making and TSP support is well shown in many deployment scenarios.

Testing and Trials

This support and assistance given by the government is depicted in many sectors right from the testing scenarios. 5G comes with the flavor of advanced features and innovation. This is depicted by the effort of the Indian Government by allowing all TSPs to trial the 5G systems in different locations of Indian. The vision for 5G in Indian Government is very clear by seeing the trial of not only equipment but also the spectrum with the experimental range in mid-band (3.2 GHz to 3.67 GHz), millimeter wave band (24.25 GHz to 28.5 GHz) and in Sub-Gigahertz band (700 GHz). TSPs are also allowed to test with their available spectrum i.e, 800 MHz, 900 MHz, 1800 MHz and 2500 MHz. The neighboring country had emphasized that testing would be isolated and not connected with the existing networks of TSPs, emphasizing the Stand Alone Mode with applications such as tele-medicine, tele-education, augmented/ virtual reality and drone-based agricultural monitoring (Ministry of Communications Government of India, 2021), In order to stay in the rollout of 5G, Shenzhen government encouraged the rollout by stating in a document that CNY10,000 will be compensated for every standalone (SA) 5G base station deployed, and telecom operators can receive up to CNY150 million (Zhou, 2019).

Spectrum

The deployment requirement for wide spectrum is a necessity with timely decisions and corrective pricing. Failure of appropriate spectrum acquisition in terms of time span and inadequacy along with pricing scenario will be a big drawback in the deployment of 5G and hence failure of investment. 5G technology brings about the spectrum optimization by deploying the best network resources for the best usage (Lombardo, 2019).

Spectrum and Infrastructure Sharing

Policy incorporating sharing of spectrum can assist to reduce spectrum cost. The spare or abundant infrastructure and spectrum sharing could bring about larger benefit and income to the telecommunication. Operators can benefit both by leasing or hiring of both passive infrastructure (e.g., physical site and power systems) and active infrastructure (e.g., antenna and transceivers) to cost-effectively achieves the performance of sites and 5G capability. This will also assist in the growth of the 5G traffic in future. Some countries' regulators have been assisting in infrastructure sharing of mobile operators because of social benefits that the society can get. The social benefit is believed to be obtained from cost cut to incur on the customer pricing and plans. To add to this, it will benefit in power energy savings which in turn reflects the economic benefit. Ericsson (2012) predicted that asset savings from infrastructure sharing can reach up to 40% and operators can save 30-40% of the network costs (GSMA Future Networks, 2019).

Security

5G is wireless and internet based applications involving even AI, AR and VR over cloud analytics and edge computing. Hence, the security related issues over the connected devices and backbone equipment is a major grave issue in 5G deployment. Hazardous conditions may be avoided by standardization of the connected devices (1060 announced 5G devices, (GSA, 2021)), thus maintaining high security and reliability. Policy regarding security and standardization of the connected equipment and devices are taken up very seriously in the government levels globally.

Government Funds for rural developments

The governments in many countries have boosted the 5G projects by funding in backbone up gradation and deployment for 5G services in rural areas. These rapid deployments supported by governments have assisted to bring down the digital divide gap. A website published that Federal Communications Commission of USA, establishes $9 Billion Fund in order to assist in 5G services in the rural sectors **(Kung, 2020)**. This funding was aimed for rural 5G deployment for telehealth, telework, remote learning, precision agriculture along with job creation.

Innovation and partnership

Another, important actions taken by some governments are their activities in innovation of public services. They have partnered with vendors and enterprises (PPP) to bring innovation for the digital era. According to a press release of UK website, £28 million was assisted by UK government sectors to trial innovative new of 5G to improve people's lives. Partnership of government and businesses are allowed to invest on various UK projects to support British industries **(DCMS & MP, 2021)** and a recent press release announced that £50 million of Government investment was for creative businesses across the UK in expectation that this financial support would drive economic growth **(DCMS, BFI, & MP, 2022)**.

Training & Research

Many countries have joint in partnership with the equipment vendors to develop local skill and creativity of applications. Researches in 5G have been also of priority factor for many government sectors. Research to develop own equipment, security, open networks, integration, innovated applications and standards concerned topics are well practiced globally. Infocomm Media Development Authority (IMDA) along with Cyber Security Agency of Singapore and the National Research Foundation support research and development in 5G Cyber Security and other areas of 5G research. This department of Singapore has announced its willingness to partner with institutes and companies to train and develop frontier 5G demanded tech skills (IMDA). Research has been well accomplished in the neighboring country of Indian Institute of Technology (IIT) in 5G with the development of the brand 5Gi which has been approved by International Telecommunications Union (ITU) (Ministry of Communications Government of India, 2021). This standard which assists in enhanced coverage assists to cater the rural-urban digital divide in 5G deployment in a cost effective manner (Tsdsi, 2022). Training is also found with the government having contracts with equipment vendors. For example, at the end of the year 2020 Indonesian government agreed with Huawei to have 100,000 Indonesians trained in digital technology (Natrajan, Ray, & Depp, 2021).

Tasks of assistance by government sector in Nepal for 5G

Likewise, due to large investment of 5G, TSP cannot stay away from the support of Government of Nepal. Government may have to realize the large investment needed and the profitability based on the low ARPU (Average Revenue Per User) of the TSPs. For this a self assessment on the budgetary aspect must be carried out before actually announcing the 5G requirement in the country. A well defined time span for corrective business models must be also supported by the government, as government is the key player in the socio economic development.

Spectrum pricing and its renewable fee must be realistic to the income scenarios of the Mobile Service Providers (MSP). Policy for sharing spectrum can assist in proper utilization and in the burden of pricing. Government's plans and it funding for developing and expanding the backbone infrastructure can be revisited for 5G preparation and its full ledged deployment. Government

must support testing of 5G for low, mid band and high frequency with appropriate spectrum availability and applications for various locations of Nepal.

Private partnership programs must be collaborated for the requirement of innovation suitable for use cases of Nepal.

5G is an unprecedented shift in the mobile technology. Hence, skill must be developed for integration, monitoring, security, analytics, cloud computation, big data and overall deployment. Government must invest its resources for skill building, integration, standardization and innovations. Since 5G can massively benefit enterprises like factories, universities, health institutes and stadiums, it would be very fruitful to have demonstrations of the 5G features so that sectors can move to adapting modernization in their operations. To accomplish this, Government of Nepal, must support testing of 5G for low, mid band and high frequency with appropriate spectrum availability and applications

Policy for sharing spectrum can assist in proper utilization and reduce the burden of pricing. Government's plans for developing and expanding the backbone infrastructure can be revisited for 5G preparation and its full fledged deployment..

Conclusion

Mobile phones have become a necessity in the lifestyles of all citizens of Nepal. MSPs have been offering wireless services since the introduction of 1st generation and evolving to the 4th generation system. It has been a trend that the next generation has always been taken up in the road map of MSP to stay in par with telecommunication development and adaptation worldwide with the vision that technology is eminent for modernization. This indication also leads to adopting the 5G in the near future for Nepal MSPs. Since, Nepal struggles to come out of Least Developed Country status, the economic status and the digital development lags behind the scenario of 5G deployed leading countries. In coming years experiencing and knowing the gee-whiz applications catered by 5G of the modern world outside Nepal, it will become the next step for adopting this technology in Nepal. Hence, the delay taken for deploying the 5G in Nepal can be optimistically taken as the time span for preparation of 5G both by government sectors and the MSPs. To overcome the hurdles for the leap frog actions of 5G deployment, government of Nepal must set up strategies to support the deployment of this technology by collaborating with stakeholders and enterprise users. This paper has

discussed some of the actions that the government can take up with an optimistic attitude that 5G opens up large opportunities to overcome backwardness in governance and digital transformation of the nation. .

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Humanity as Character Strength makes you gel with your organization: Mediating role of temperance

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

Objective *The present study examines the association between humanity, temperance, and person-organization fit.*

Background. *Humans need association with groups, and based on self-categorization theory, different levels of categorization may affect one other through different processes. We have taken the idea as the core of the study where the superordinate level of identity (humanity) is associated with a group-level self category (person-organization fit) temperance. Both Humanity and Temperance being virtues of character strength of a person, we support the core with Virtue theory which reflect on the significance of virtues in building ethics among individuals, organization, and society in general*

Design. *It is a cross-sectional study where self-reported questionnaires were used to collect data by sending e-mails to respondents to fill over their responses on a google form.*

Methods. *A sample of 185 employees working in India's manufacturing and service sector was collected through convenience sampling. Structural Equation Modeling (SEM) and Hayes' PROCESS macro was used to analyze the association among constructs*

Results. *SEM showed that Humanity was positively associated with temperance and person-organization fit, that temperance was positively associated with the person-organization fit, and that temperance mediated the positive association between humanity and person-organization fit. The results were also assured using Hayes' PROCESS macro.*

Conclusion. *The present study highlights temperance's mediating role as an underlying mechanism between humanity and person-organization fit. The theoretical and practical implications with the limitations and future scope of the current research are also discussed.*

Keywords

Humanity, Temperance, Person-organization fit, Self-Categorization theory, Virtue Theory

Introduction

Background of the Study

Humans are social animals by nature, and its human tendency to find themselves associated with others and be social. Those who are so self-sufficient that they do not need to socialize are either beasts or gods (Aristotle, 1855; Ebenstein & Ebenstein, 2002). People want themselves to be associated with different groups. A single individual can be associated with various intermingled groups at a time. (John C. Turner & Reynolds, 2012)

Earlier work has implied that individuals at times realize they lack humanity, and at those times, they might perceive stimulation to connect to others. They portray prosocial actions and attempt to rewire themselves to

society and rebuild their ethical reputation. (Yang et al., 2016)hope and life satisfaction in a sample of Chinese adults. Three hundred and twenty adults completed the Self-Compassion Scale (SCS. In the Organizational context, employees also need to be connected with others at their workplace, and that is, they feel fit to their organization. Thus, the present necessity is to emphasize the constructive ideologies that could aid employees to blend with others and have a sense of shared identity with other employees in a manner that is a good fit with the organization.

With particular reference to the organizational context, this research emphasizes humanity as connecting with others. Thus having a feeling of humanity will make one

employee feel identical to other employees rather than being competitive, in all sense. It is also essential to study the underlying mechanism between humanity & person-organization fit, and temperance has been identified as the exact mechanism. Having a sense of temperance will make an employee feel in control at the driving seat of their life.

Thus, this study expects to improve the fit of employees in organizations through humanity and having temperance to do so. Eventually, temperance's role has been examined as a mediator between humanity and person-organization fit.

Problem Statement

Humanity has been recognized to have interpersonal effects. However, its function has not been extensively studied in organizational behavior. Nevertheless, there exists a gap in reviewing humanity's impact on employees' person-organization fit. Furthermore, temperance's role must be examined in the association of humanity and person-organization fit.

Scope of the Study

The study's scope mainly focuses on the organizational context regarding employees' fit and their humanity & temperance virtue. However, the findings can be generalized in a psychological context. Findings can be used to support the promoting virtue of humanity among any individual for the sake of having temperance and fitting his/her community.

Objectives

The Objectives of the Study are:-

1. To investigate the relationship between humanity, temperance, and person-organization fit

2. To examine if temperance is a mediating between humanity and person-organization fit.

3. To test whether other controlled variables influence the constructs, i.e., humanity, temperance, and person-organization fit or the relationships among

Theoretical Framework

This study is based on the underpinning of two theories- Self-Categorization Theory and Virtue Theory

Self-Categorization Theory

Turner (1985, 1987)i.e. the nature of pscyhological group formation, its antecedents, and its effects. There are six sections: (1 proposed the Self-Categorization Theory (SCT), which recognizes that a person can act as both individual and group member and also explains how and when people would describe themselves as individual or group member

Willer et al. (1989) proposed three self-categorization levels in self-categorization theory. On the superordinate level, the self is described as a part of humanity compared to other creatures. On the intergroup level, the self is described as part of a group compared to a related outgroup). On the interpersonal level, the self is described as an exclusive individual compared to others (John C. Turner & Reynolds, 2012; Willer et al., 1989). Turner et al. (2006) propose that higher and lower order self categories interplay with one another to form another. (John C. Turner & Reynolds, 2012)

Hogg & Terry (2000) worked on the organizational context of self-categorization theory and revealed various prepositions to be worked upon based on the idea underlying the self-categorization theory. Hogg & Terry (2000) advise that identity-related constructs and processes can update our knowledge of organizational behavior. More importantly, admitting the significance of "work-related identities to people's sense of self, a social identity perspective adds to the understanding of organizational attitudes and behavior by drawing on the critical link between such identities and the person's sense of self." (Hogg & Terry, 2000)

Virtue Theory

According to Virtue Theory, the core of ethics stays in evolving positive character features as a virtue (Aristotle, 2019; Arjoon, 2000)which advocates taking the middle course between excess and deficiency, the book offers an illuminating discource on moral virtue, intellectual virtue, pleasure, friendship, happiness, and many other topics.","author":[{"dropping-particle":"","family":"Aristotle","given":"","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Complete Works of Aristotle, Volume 2","id":"ITEM-1","issued":{"date-parts":[["2019","12","31"]]},"page":"1729-1867","publisher":"Princeton University Press","title":"Nicomachean Ethics","type":"chapter"},"uris":["http://www.mendeley.com/documents/?uuid=e9e85e80-d0e3-42df-8683-6c6ac90a50e6"]},{"id":"ITEM-2","itemData":{"DOI":"10.1023/A:1006339112331","ISSN":"01674544","abstract":"This paper develops a meta-theory of business based on virtue theory which links the concept of virtues, the common good, and the

dynamic economy into a unifying and comprehensive theory of business. Traditional theories and models of business have outlived their usefulness as they are unable to adequately explain social reality. Virtue theory shows firms that pursue ethically-driven strategies can realise a greater profit potential than those firms who currently use profit-driven strategies. The theory expounds that the business of business is ethical business and that the crises that business and society face today are crises of leadership and ethics. The issues of leadership and corporate social responsibility are discussed in the context of the proposed theory.","author":[{"dropping-particle":"","family":"Arjoon","given":"Surendra","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Business Ethics","id":"ITEM-2","issue":"2","issued":{"date-parts":[["2000"]]},"page":"159-178","title":"Virtue theory as a dynamic theory of business","type":"article-journal","volume":"28"},"uris":["http://www.mendeley.com/documents/?uuid=7900deb4-6fd7-3689-b990-2fc965c11b29"]}],"mendeley":{"formattedCitation":"(Aristotle, 2019; Arjoon, 2000. The emphasis is to shape an ethical organization to grow the employees' character. The notion backed by the two theories is that humanity and temperance must be cultivated as virtues in employees' character so that the employees' values grow consistent with the values of an ethical organization. Thus our study is focused on identifying oneself as a human being by having humanity as a virtue so that one sees other employees as also human beings and then smearing temperance (self-regulation) to bring into line one's identity with self and with the organization, which in turn would foster person-organization fit

Literature Review

Humanity and Temperance

The earliest notable occurrence of humanity as a construct in modern literature is the Adlerian personality theory; its core idea was "gemeinschaftsgefu¨hl," which literal meaning is "social interest," in german language, but contextual meaning in Alder's theory is a sense of "oneness with humanity" (Adler, 1927). Bastian et al. (2013) they also dehumanize the self in response to their own harmful behavior. We examine this self-dehumanization effect across four studies. Studies 1 and 2 show that when participants are perpetrators of social ostracism, they view themselves as less human compared with when they engage in nonaversive interpersonal interactions.

Perceived immorality of their behavior mediated this effect. Studies 3 and 4 highlight the behavioral consequences of self-dehumanization. The extent to which participants saw themselves as less human after perpetrating social ostracism predicted subsequent prosocial behavior. Studies 2 to 4 also demonstrate that consequences of self-dehumanization occur independently of any effects of self-esteem or mood. The findings are discussed in relation to previous work on dehumanization and self-perception. We conclude that in the context of immoral actions (self refer that an individual's virtue of humanity relies on others' humanity. When individuals sense they lack their humanity, they might initiate to be involved with other individuals prosocially, rewiring themselves with the society and restoring their ethical repute. Hamer et al. (2019) proposed that those who sturdily classify themselves with all humanity believe themselves to be near humans across the globe, care for them, and observe all of them as part of the same group.

Peterson & Seligman (2004) defined humanity as a virtue for character strengths and said it is essential for interpersonal behavior, including tending and being friends with others. It also symbolizes human love, compassion, and being socially intelligent. Among the other six virtues of character strength, Peterson & Seligman (2004) included temperance, which they defined as the character strength that protects one against excess.

Temperance in its most simplistic forms represents controlling over enjoyable urges such as overeating, consuming alcohol, smoking, or wishing for sex (Horder, 1988). However, psychologically, temperance is inclined to self-regulation, the practiced ability to monitor and regulate one's feelings, inspiration, and actions even without any other aid (Bandura, 1977). Failure to do so leads to personal and social issues(Eisenberg et al., 2000).

Since both are virtues of character strength, humanity and temperance are related (Sanz & Fontrodona, 2019). More importantly, self-restrain (temperance) has been identified as an underlying consequence of identifying with other human beings (Bastian et al., 2013)they also dehumanize the self in response to their own harmful behavior. We examine this self-dehumanization effect across four studies. Studies 1 and 2 show that when participants are perpetrators of social ostracism, they view themselves as less human compared with when they engage in nonaversive interpersonal interactions. Perceived immorality of their behavior mediated this effect. Studies

3 and 4 highlight the behavioral consequences of self-dehumanization. The extent to which participants saw themselves as less human after perpetrating social ostracism predicted subsequent prosocial behavior. Studies 2 to 4 also demonstrate that consequences of self-dehumanization occur independently of any effects of self-esteem or mood. The findings are discussed in relation to previous work on dehumanization and self-perception. We conclude that in the context of immoral actions (self, and another essential factor Aristotle (2019) defined in the Nicomachean Ethics is that the essential quality of humanity is to lead a life with "golden mean" by picking up the course of actions between extremes, i.e., the idea behind temperance. Ultimately, having a kind, caring, and loving character would foster self-control to limit oneself from pleasable urges. Thus we formulate our first hypothesis, which states that:

H1: Humanity is positively associated with temperance

Humanity and Person-Organisation Fit

As described in the study's theoretical background, connecting humanity and person-organization fit is drawn from self-categorization theory, where there are different levels at which individuals can classify themselves, namely, interpersonal, intergroup, and superordinate level (John C. Turner & Reynolds, 2012). The higher levels can affect the lower level and vice versa (John C. Turner et al., 2006; John C. Turner & Reynolds, 2012)

Recent studies emphasized that elementary values might draw mutual opinions between individuals and organizations (Dhir & Dutta, 2020)person-job fit (PJF. Similar values such as morality advanced to link humanity and person-organization fit. (Yam et al., 2021). Moreover, a study by Ünal & Turgut (2015) had factorized the observed variables for person-organization fit developed by Cable & Judge (1997) into three dimensions, namely, "humanity fit," "responsibility & innovation fit," and "assertiveness fit." Thus, based on these arguments, we ascertain our second hypothesis, which is:

H2: Humanity is positively associated with person-organization fit

Temperance and Person-Organization fit

The person-organization fit has been defined as the perceived compatibility of an employee with the organization. (Mitchell et al., 2001). Most of the work on P-O fit is based on the attraction-selection-attrition (ASA) framework of Schneider (1987) and emphasizes

establishing congruence among the values of individuals and that of the organization (Edwards & Cable, 2009).

Literature has two significant reasons for incongruence among the values of individuals and organizations, i.e., the reasons for person-organization misfit. First is the negative emotional state of the individuals, such as tension, stress, frustration, and so (Edwards, 1996). The second important reason embedded in the literature for misfits in the person-organization values is the lack of self-control among employees to suppress their personal goals and try to align them with the organization's goals (Kehr, 2004)and that resolution of this conflict requires volitional regulation and consumes volitional strength. This suggests that implicit/explicit motive discrepancies (IED.

A practical fact is that it is expected more from the employees to shift their personal goals than the organizations to shift its goals towards employees, thus arousing self-control demands in the organizations (Schmidt & Diestel, 2015). Thus, when the individuals have more self-control (temperance), employees are more likely to fit well in their organization. To test this notion, we form our third hypothesis, which states that:

H3: Temperance is positively associated with person-organization fit

Mediating Role of Temperance among humanity and person-organization fit

Interestingly, while exerting strengths to a positive impact in organizations, the role of temperance as a strength in employees' character is inevitable (Sanz & Fontrodona, 2019). Thus because of the bigger picture we plan to examine in this study between humanity and person-organization fit, it becomes essential to study temperance as the mediating factor. Moreover, temperance has already been identified and observed as mediating variable between individual qualities and positive organizational outcomes (Duan & Ho, 2018). Thus in this study also, after taking into account the associations among mindfulness, temperance, and person-organization fit, we propose our final hypothesis, which state that:

H4: Temperance Mediates the positive association between humanity and person-organization fit.

Method

Research Design

This study was conducted as a nonexperimental field survey with a cross-sectional research design where

responses were collected from various respondents during a single period. We collected data through a self-report survey questionnaire prepared using Google form for this study. The participants were well informed of the objectives of the study. Anonymity was ensured to the respondents, and responses only for statistical purposes were also guaranteed before collecting responses. The respondents were informed that no answer was right or wrong, but capturing the participants' actual responses. They were asked to choose the response that best manifests their opinion about the observed variables on a scale of 7 items. All the questions were mandatory to be filled in the questionnaire via the google form. Thus, there was no issue of missing responses, and complete data of 182 respondents were received.

Sample of the Study

A sample size of 182 Employees from Indian manufacturing and service sector organizations is included in this study. Participants reported their responses to the items used to measure the latent constructs (which we will refer to in the next section) along with their demographic information.

Of the 182 respondents, 105 (57.7 %) were males, and 77 (42.3%) were females. The average age of respondents was 35.29 years, with an average total work experience of 11.48 years. 60.4 % (110) of respondents were married, while 38.5 (51) % were unmarried, and 1.1% (2) had another marital status. Among the 182 participants in the study, 46 (25.3%) were junior-level, 88 (48.4 %) were middle-level, and 48 (26.4%) were senior-level employees. The median salary of the employees was Rs. 7,40,000 per year (Approx. $ 9,950 considering the exchange rate at the time of the study). Also, most respondents (96, 52.7%) were postgraduate, relatively few were (50, 27.5%) Ph.D. holders and (33,18.1%) graduates, whereas only a very few (3, 1.6%) were just diploma holders. Moreover, 67.6% of respondents were working in private organizations, whereas 32.4% were working in public organizations.

Research Instruments

The constructs, Humanity, and Temperance were measured through subscales of the character strength rating form (Ruch et al., 2014). A sample item used for measuring humanity is "I have Love (capacity to love and be loved): People with a highly developed capacity to love and a secure attachment value close relations with others, in particular those in which sharing and caring are reciprocated." Furthermore, for temperance sample item is " I have Self-Regulation (self-control): People with highly developed self-regulation can regulate what they feel and do. They can control different areas of life (appetite, emotions, and so) and are very disciplined."

A subscale of Job Embeddedness (Mitchell et al., 2001) measured person-organization fit. A sample item is "I fit with my organization's culture." All the constructs were measured using a 7-point Likert Scale. The Factor loadings and description of all items are mentioned in Table1

Data Analysis

SPSS 27.0 (IBM Corp., 2020) and R-studio 1.4 (Rstudio, 2020) software, along with Hayes PROCESS macro (Hayes, 2018), were used to examine the data in the present study. First of all, the scale's reliability was tested along with its validity.

Then, the two-step method suggested by Anderson & Gerbing (1988)we provide guidance for substantive researchers on the use of structural equation modeling in practice for theory testing and development. We present a comprehensive, two-step modeling approach that employs a series of nested models and sequential chi-square difference tests. We discuss the comparative advantages of this approach over a one-step approach. Considerations in specification, assessment of fit, and respecification of measurement models using confirmatory factor analysis are reviewed. As background to the two-step approach, the distinction between exploratory and confirmatory analysis, the distinction between complementary approaches for theory testing versus predictive application, and some developments in estimation methods also are discussed.","author":[{"dropping-particle":"","family":"Anderson","given":"James C.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Gerbing","given":"David W.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Psychological Bulletin","id":"ITEM-1","issue":"3","issued":{"date-parts":[["1988","5"]]},"page":"411-423","title":"Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach","type":"article-journal","volume":"103"},"uris":["http://www.mendeley.com/documents/?uuid=c156e825-de8f-46e7-a093-6df157ff7357"]}],"mendeley":{"formattedCitation":"(Anderson & Gerbing, 1988 to analyze the mediating effect is used to test the mediation of temperance among humanity and person-organization fit. First, the measurement model was

tested to assess whether the model used with indicators measuring latent constructs is statistically significant. After the measurement model, a Structural model was tested to know the actual effects among the variables.

The fitness of the model was evaluated by using the following indices: the comparative fit index (CFI), the goodness of fit index (GFI), the root mean square error of approximation (RMSEA), and the standardized root means square residual (SRMR). Statisticians have recommended that the model's fit be considered acceptable when the p-value of the model is insignificant at 0.05 level, and the CFI and GFI values are above 0.95, and SRMR values are below 0.08 and RMSEA value below 0.07 (Hooper et al., 2008; Hu & Bentler, 1999)guidelines are presented on their use. The paper also provides reporting strategies of these indices and concludes with a discussion on the future of fit indices. © Academic Conferences Ltd.","author":[{"dropping-particle":"","family":"Hooper","given":"Daire","non-dropping-particle":"","parse-names":false,"suffix":""}, {"dropping-particle":"","family":"Coughlan","given":"Joseph","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Mullen","given":"Michael R.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Electronic Journal of Business Research Methods","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2008"]]},"page":"53-60","title":"Structural equation modelling: Guidelines for determining model fit","type":"article-journal","volume":"6"},"uris":["http://www.mendeley.com/documents/?uuid=a784a1b4-ebe8-4e66-929c-d1f31f841e16"]},{"id":"ITEM-2","itemData":{"DOI":"10.1080/10705519909540118","ISSN":"10705511","abstract":"This article examines the adequacy of the \"rules of thumb\" conventional cutoff criteria and several new alternatives for various fit indexes used to evaluate model fit in practice. Using a 2-index presentation strategy, which includes using the maximum likelihood (ML.

Sobel's (1982) Test was used to test the mediation effect. (Sobel, 1982, 1986)Berryman (1985 expect the sampling distribution and the indirect effects to be normally distributed. However, the indirect effects are hardly normally distributed while dealing with finite samples. (Preacher & Hayes, 2008). Shrout & Bolger (2002)bootstrap methods (B. Efron & R. Tibshirani.

1993 claimed that the Bootstrapping method could resolve this. Bootstrapping approach is based on the principle that the standard error estimates and confidence intervals (CIs), which are calculated based on the assumption of a normal distribution, will usually be indefinite because the indirect effect estimates usually do not follow the normal distribution. MacKinnon et al. (2004) have suggested that the bootstrap method yields the most accurate CIs for indirect effects. The given sample size is randomly resampled with replacement in the bootstrapping procedure. When the confidence interval at 95% for an indirect effect did not include zero, the indirect effect is considered to be significant (Hayes, 2018; Yang et al., 2016)NY","title":"Introduction to Mediation, Moderation, and Conditional Process Analysis, Second Edition: A Regression-Based Approach","type":"book"},"uris":["http://www.mendeley.com/documents/?uuid=606c79a5-5390-3d6c-bfa4-e6ec7de5fada"]},{"id":"ITEM-2","itemData":{"DOI":"10.1016/j.paid.2016.03.086","ISSN":"01918869","abstract":"The present study investigated the relationship between self-compassion, hope and life satisfaction in a sample of Chinese adults. Three hundred and twenty adults completed the Self-Compassion Scale (SCS. Hayes PROCESS macro (Hayes, 2018) was used to assure the results with Bootstrapping technique.

Results

Cronbach's Alpha is used to establish Internal consistency of the scales. All the constructs showed Alpha values more than 0.7 (as shown in Table 1), which were within the significance limit as suggested by Hair et al. (2010). Confirmatory Factor Analysis (CFA) of the constructs was executed while testing the measurement model, factor loading of observed variables (items) with their description is given in Table 1.

Table 1 Item Description with Factor Loadings and Internal Reliability,

Items	Description	Loadings
Humanity		**α = 0.74**
HUM1	I have love	0.722
HUM2	I have Kindness	0.736

HUM3	I have Social Intelligence	0.781
Temperance		**α = 0.74**
TEMP1	I have Forgiveness & Mercy	Dropped
TEMP2	I have Modersty & Humility	0.692
TEMP3	I have Prudence	0.733
TEMP4	I have Self-Regulation	0.745
Person-Organization Fit		**α = 0.91**
POF1	My job utilizes my skills and talents well.	0.802
POF2	I feel like I am a good match for my organization.	0.903
POF3	I feel personally valued by my organization.	0.892
POF4	I like my work schedule (e.g., flextime, shift).	0.723
POF5	I fit with my organization's culture	0.861
POF6	I like the authority and responsibility I have at my organization	0.828

Table 2 includes Cronbach's alpha values, means, standard deviations, composite reliability, intercorrelations between factors along with AVE values. The discriminant validity was checked by comparing the Average Variance Extracted (AVE) with the correlation's squares for all constructs. The AVE for each construct is provided along the diagonal in **bold**. The squares of the correlation among the constructs are given in Table 2 above the diagonal. Constructs' AVEs were more than the square of correlation among the corresponding constructs, signifying the discriminant validity as suggested by Fornell & Larcker (1981)in addition to the known problems related to sample size and power, is that it may indicate an increasing correspondence between the hypothesized model and the observed data as both the measurement properties and the relationship between constructs decline. Further, and contrary to common assertion, the risk of making a Type II error can be substantial even when the sample size is large. Moreover, the present testing methods are unable to assess a model's explanatory power. To overcome these problems, the authors develop and apply a testing system based on measures of shared variance within

the structural model, measurement model, and overall model.","author":[{"dropping-particle":"","family":"Fornell","given":"Claes","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Larcker","given":"David F.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Marketing Research","id":"ITEM-1","issue":"1","issued":{"date-parts":[["1981","2"]]},"page":"39","title":"Evaluating Structural Equation Models with Unobservable Variables and Measurement Error","type":"article-journal","volume":"18"},"uris":["http://www.mendeley.com/documents/?uuid=36c996a2-56c5-4370-be04-5beff6f7a32c"]}],"mendeley":{"formattedCitation":"(Fornell & Larcker, 1981.

The AVEs for Humanity, Temperance, and person-organization fit were more than 0.50. Also, Composite reliability for the constructs was more than 0.7. Both conditions have suggested construct's convergent validity as suggested by Fornell & Larcker (1981)in addition to the known problems related to sample size and power, is that it may indicate an increasing correspondence between the hypothesized model and the observed data as both the measurement properties and the relationship between constructs decline. Further, and contrary to common assertion, the risk of making a Type II error can be substantial even when the sample size is large. Moreover, the present testing methods are unable to assess a model's explanatory power. To overcome these problems, the authors develop and apply a testing system based on measures of shared variance within the structural model, measurement model, and overall model.

","author":[{"dropping-particle":"","family":"Fornell","given":"Claes","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Larcker","given":"David F.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Marketing Research","id":"ITEM-1","issue":"1","issued":{"date-parts":[["1981","2"]]},"page":"39","title":"Evaluating Structural Equation Models with Unobservable Variables and Measurement Error","type":"article-journal","volume":"18"},"uris":["http://www.mendeley.com/documents/?uuid=36c996a2-56c5-4370-be04-5beff6f7a32c"]}],"mendeley":{"formattedCitation":"(Fornell & Larcker, 1981

Table 2 Descriptive Statistics and Correlations

	α	CR	M	SD	1	2	3	4	5	6	7	8	9	10	11
1 Gender	-	-	0.42	0.49	-	-	-	-	-	-	-	-	-	-	-
2 Age	-	-	1.53	0.71	-0.205*	-	-	-	-	-	-	-	-	-	-
3 Marital Status	-	-	0.41	0.51	0.123	-0.400**	-	-	-	-	-	-	-	-	-
4 Job Position	-	-	1.01	0.72	-0.199**	0.636**	-0.429**	-	-	-	-	-	-	-	-
5 Education	-	-	2.06	0.72	0.222**	0.001	-0.111	-0.012	-	-	-	-	-	-	-
6 Salary	-	-	0.99	0.84	-0.281**	0.528**	-0.500**	0.511**	0.038	-	-	-	-	-	-
7 Organization Status	-	-	0.68	0.46	0.070	0.074	0.000	0.076	0.009	-0.079	-	-	-	-	-
8 Total Work Experience	-	-	0.75	0.76	-0.189**	0.806**	-0.478**	0.680**	-0.011	0.605**	0.050	-	-	-	-
9 Humanity	0.74	0.79	5.78	0.94	0.047	0.151*	-0.065	0.128	0.036	0.102	0.086	0.124	**0.558**	0.314	0.089
10 Temperance	0.74	0.78	5.50	1.01	0.008	0.240**	-0.188*	0.224**	0.084	0.209**	0.127	0.250**	0.560**	**0.524**	0.100
11 Person-Organization Fit	0.91	0.93	5.57	1.20	-0.031	0.207**	-0.109	0.147*	0.047	-0.005	0.121	0.096	0.298**	0.316**	**0.701**

Note. α= Cronbach alpha reliability; CR = Composite reliability of the measurement model; M=Mean; S=Standard Deviation. N=182. The average variance extracted (AVE) for each construct (Nos. 9, 10 & 11) is provided in **bold** along the diagonal. Values below the diagonal are inner construct correlations; values above the diagonal (i.e., AVE) are square of correlations.
* p< 0.05 (2-tailed). ** p< 0.01 (2-tailed).

Measurement Model

The single-factor model considering all items to be part of only one factor (χ^2 [54] = 559.292, N=110, p-value < 0.001, CFI = 0.936, GFI = 0.955, RMSEA = 0.227, SRMR= 0.153) does not fit the data satisfactorily as per the standards of Hooper et al. (2008) and Hu & Bentler (1999)guidelines are presented on their use. The paper also provides reporting strategies of these indices and concludes with a discussion on the future of fit indices. © Academic Conferences Ltd.","author":[{"dropping-particle":"","family":"Hooper","given":"Daire","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Coughlan","given":"Joseph","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Mullen","given":"Michael   R.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Electronic Journal of Business Research Methods","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2008"]]},"page":"53-60","title":"Structural equation modelling: Guidelines for determining model fit","type":"article-journal","volume":"6"},"uris":["http://www.mendeley.com/documents/?uuid=a784a1b4-ebe8-4e66-929c-d1f31f841e16"]},{"id":"ITEM-2","itemData":{"DOI":"10.1080/10705519909540118","ISSN":"10705511","abstract":"This article examines the adequacy of the \"rules of thumb\" conventional cutoff criteria and several new alternatives for various fit indexes used to evaluate model fit in practice. Using a 2-index presentation strategy, which includes using the maximum likelihood (ML. Moreover, The three factors model among Humanity, Temperance and person-organization fit with fit indices (χ^2 [51] = 45.867, N=182, p-value > 0.05, CFI = 1.000, GFI = 0.996, RMSEA = 0.000, SRMR= 0.042) fitted the data very well as per the established standards of Hooper et al. (2008) and Hu & Bentler (1999)guidelines are presented on their use. The paper also provides reporting strategies of these indices and concludes with a discussion on the future of fit indices. © Academic Conferences Ltd.","author":[{"dropping-particle":"","family":"Hooper","given":"Daire","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Coughlan","given":"Joseph","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Mullen-","given":"Michael   R.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Electronic Journal of Business Research Methods","id":"ITEM-1","issue":"1","issued":{"date-parts":[["2008"]]},"page":"53-60","title":"Structural equation modelling: Guidelines for determining model fit","type":"article-journal","volume":"6"},"uris":["http://www.mendeley.com/documents/?uuid=a784a1b4-ebe8-4e66-929c-d1f31f841e16"]},{"id":"ITEM-2","itemData":{"DOI":"10.1080/10705519909540118","ISSN":"10705511","abstract":"This article examines the adequacy of the \"rules of thumb\" conventional cutoff criteria and several new alternatives for various fit indexes used to evaluate model fit in practice. Using a 2-index presentation strategy, which includes using the maximum likelihood (ML. This confirms that the factorization of the obseeved variables into the three constructs is correctly done.
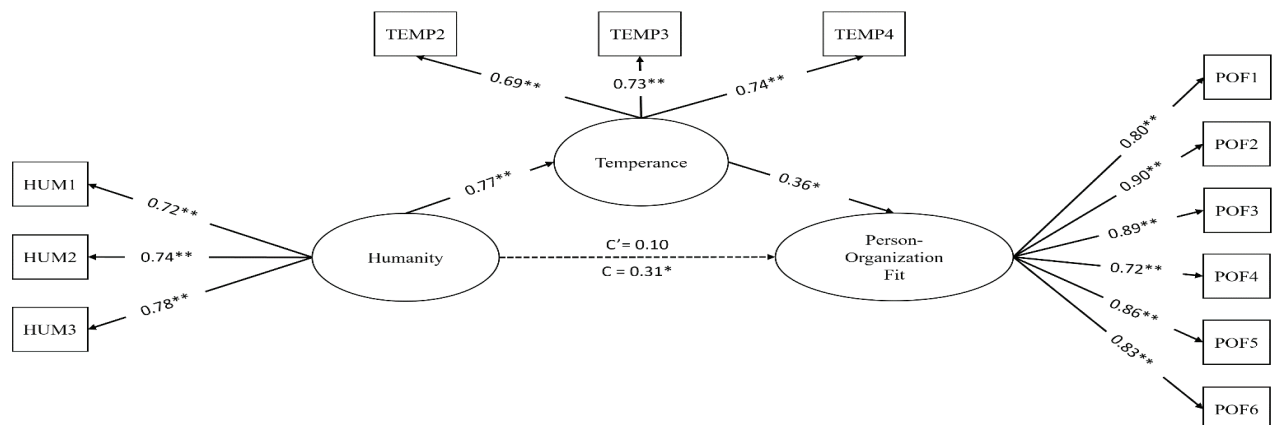
Note : Items (HUM1, HUM2, HUM3, TEMP2, TEMP3, TEMP4, POF1, POF2, POF3, POF4, POF5 and POF6 are explained in Table 1. N=110 Control Variables (Gender, Age, Marital Status, Job Position, Education, Salary, Organizational Status, Total Work Experience) are not shown for the ease of presentation, TEMP1 is dropped due to low factor loading. c'= direct effect, c=indirect effect. **p < 0.001 *p < 0.005

Figure 1 – The Structure Equation Model

Furthermore, all the standardized factor loadings for the latent variables' indicators were statistically significant (λ ranging from .692 to .903, p < 0.001), which signifies that their respective indicators well represented their respective latent factors.

Structure Model & Hypothesis Testing

The structural model with standardized path coefficients, taking humanity as a predictor, temperance as a mediator, and person-organization fit as the outcome variables (as shown in Figure 1), suggested a good fit to the data similar to the measurement model.

H1: As hypothesized, Humanity's effect on temperance was significant (β = 0.775, p < 0.001). Also, the results using Hayes Process Macro model 4 reflected that humanity is positively associated to temperance (B = 0.604, SE=0.067, p < 0.001, LLCI=0.472 and ULCI=0.735) (refer Table 3). Thus, hypothesis one was supported

H2: Humanity was positively associated with person-organization fit when accounting for the total effect (β = 0.429, p < .001). Also, the results using Hayes Process Macro model 4 reflected that humanity is positively associated to person-organization fit in total effect (B = 0.383, SE=0.091, p < 0.001, LLCI=0.203 and ULCI=0.563) (refer Table 3). Thus, supporting hypothesis two.

H3: Temperance was positively associated with person-organization fit (β = 0.363, p < 0.01). Also, the results using Hayes Process Macro model 4 reflected that temperance is positively associated to person-organization fit (B = 0.258, SE=0.101, p < 0.05, LLCI=0.060 and ULCI=0.457) (refer Table 3). Thus, hypothesis three was supported.

H4: As hypothesized, humanity has a significant indirect effect on person-organization fit through temperance (β = 0.314, p < 0.01). Also, when accounting for the temperance's mediating effect, the direct effect of humanity on the person-organization fit was not significant (β = 0.116, p >. 05), which suggests that temperance fully mediates the association among humanity and person-organization fit. The bootstrap estimation (with 5000 bootstrapped random Samples) using the Hayes Process macro Model 4 also confirms the findings by SEM. The indirect effect was significant (B = 0.121, BootSE=0.052, BootLLCI=0.0.21, and BootULCI=0.229) as there was no zero between the lower and upper limit Bootstrapped Confidence Interval. However, against the SEM's results, the direct effect was surprisingly significant by tiny margins in Hayes's PROCESS macro findings (B = 0.227,

SE=0.109, p < 0.05, LLCI=0.013 and ULCI=0.441) (refer to Table 3). Nevertheless, both the results were still congruent to finding that temperance mediates the relationship between humanity and person-organization fit. Thus hypothesis four was also supported.

Table 3 Summary of Results using Hayes PROCESS macro Model 4

Hypothesis	Estimate		95% Class interval Boot-strapped	
B	SE	Lower	Upper	
H1 Humanity → Temperance				
Total effect	0.604	0.067	0.472	0.735
H2 Humanity → Person-Organization Fit				
Total effect	0.383	0.091	0.203	0.563
H3 Temperance → Person-Organization Fit				
Total effect	0.258	0.101	0.060	0.457
H4 Humanity → Temperance → Person-Organization Fit				
Total effect	0.383	0.091	0.0203	0.563
Direct effect	0.227	0.109	0.013	0.441
	Effect	Boot SE	Boot LLCI	Boot ULCI
Indirect effect	0.156	0.066	0.027	0.288

B= unstandardized regression coefficient, SE=structural error

Confounding Variables

We also check the mediating association among humanity, temperance, and person-organization fit after considering demographic variables as confounding variables by taking them as covariates in the Hayes PROCESS macro model 4 while taking humanity as an independent variable person-organization fit as dependent variable and temperance as mediator.

There was no significant difference in the association among humanity, temperance, and person-organization fit, even after adding confounding variables in the model. Variables include Gender, Age, Marital Status, Job Position, Education, Salary, Organisation Status, and Total Work Experience.

However, interestingly, age was found to be a significant predictor of person-organization fit in the association among all three constructs. (see table 4)

Common Method Bias

The study has a chance of Common Method Bias (CMB) (Podsakoff et al., 2003) as it is a cross-sectional research design with the self-reported questionnaire. We have tried to tackle this problem by implementing both statistical and procedural methods suggested by Podsakoff et al. (2003, 2012)a comprehensive summary of the potential sources of method biases and how to control for them does not exist. Therefore, the purpose of this article is to examine the extent to which method biases influence behavioral research results, identify potential sources of method biases, discuss the cognitive processes through which method biases influence responses to measures, evaluate the many different procedural and statistical techniques that can be used to control method biases, and provide recommendations for how to select appropriate procedural and statistical remedies for different types of research settings.","author":[{"dropping-particle":"","family":"Podsakoff","given":"Philip M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"MacKenzie","given":"Scott B.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Lee","given":"Jeong Yeon","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Podsakoff","given":"Nathan P.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Journal of Applied Psychology","id":"ITEM-1","issue":"5","issued":{"date-parts":[["2003"]]},"page":"879-903","title":"Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies","type":"article-journal","volume":"88"},"uris":["http://www.mendeley.com/documents/?uuid=a597f5ec-68f7-3b18-ab4a-a43513122cc1"]},{"id":"ITEM-2","itemData":{"DOI":"10.1146/annurev-psych-120710-100452","ISSN":"0066-4308","abstract":"Despite the concern that has been expressed about potential method biases, and the pervasiveness of research settings with the potential to produce them, there is disagreement about whether they really are a problem for researchers in the behavioral sciences. Therefore, the purpose of this review is to explore the current state of knowledge about method biases. First, we explore the meaning of the terms \"method\" and \"method bias\" and then we examine whether method biases influence all measures equally. Next, we review the evidence of the effects that method biases have on individual measures and on the covariation between different constructs. Following this, we evaluate the procedural and statistical remedies that have been used to control method biases and provide recommendations for minimizing method bias. © 2012 by Annual Reviews. All rights reserved.","author":[{"dropping-particle":"","family":"Podsakoff","given":"Philip M.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"MacKenzie","given":"Scott B.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Podsakoff","given":"Nathan P.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Annual Review of Psychology","id":"ITEM-2","issue":"1","issued":{"date-parts":[["2012","1","10"]]},"page":"539-569","title":"Sources of Method Bias in Social Science Research and Recommendations on How to Control It","type":"article-journal","volume":"63"},"uris":["http://www.mendeley.com/documents/?uuid=6880bb90-8c88-3cf9-b3de-ffcbaebcb4f3"]}],"mendeley":{"formattedCitation":"(Podsakoff et al., 2003, 2012. We applied the latent method factor technique and Harman's single factor test (Harman, 1960) as a statistical method to address CMB. We inserted a common latent factor (CLF) in the structural model measured by all the three constructs' indicator items, i.e., humanity, temperance, and person-organization fit. The structural model with the CLF displayed that temperance is a significant mediator between the association of humanity and person-organization fit. It suggests the absence of any CMB. In Harman's (1960) single-factor method, we assign all the observed variables for humanity, temperance, and person-organization into a single factor by applying the factor reduction technique. We find that the single factor explained 39.886% variance, less the threshold limit of 50%. Hence, this technique also ensures the absence of common method bias. As a procedural solution, respondents were told the study's objectives before getting their responses and were assured of the anonymity of their responses.

Table 4 Mediating Coefficients after taking into account the Confounding variables

(Dependent Variable→)	Temperance			Person-Organisation Fit		
Independent Variables ↓	B		SE	B		SE
Constant	1.788	***	0.457	2.545	***	0.643
Humanity	0.565		0.067	0.216	*	0.107
Temperance	-		-	0.237	*	0.103
Gender	0.030		0.135	-0.139		0.182
Age	0.014		0.151	0.527	*	0.204
Marital Status	-0.199		0.146	-0.226		0.197
Job position	0.042		0.122	0.124		0.165
Education	0.076		0.089	0.053		0.120
Salary	0.069		0.101	-0.283		0.136
Organization Status	0.166		0.134	0.134		0.182
Total Work Experience	0.124		0.155	-0.340		0.210
R	0.603			0.434		
R Square	0.363			0.189		
F-test	11.908	***		3.974	***	

*p<0.05, **p < 0.01, ***p< 0.001, B= unstandardised path coefficients SE= Structural Error

Discussion

Through a widespread review of existing literature, it was discovered that while there are studies engrossed in addressing organizational behavior issues in line with self-categorization ideas, little work is there to discover the relationship between Humanity, temperance, and person-organization fit and to the best of our knowledge no earlier work to study this mediation relationship.

The current study empirically demonstrates how humanity upsurges the person-organization fit of employees through temperance as a moderator. As hypothesized, humanity was positively associated with temperance and person-organization fit, and temperance was positively associated with the person-organization fit. Furthermore, as hypothesized, temperance emerged as a mediator underlying the positive relationship between humanity and person-organization fit. Thus, this study signifies a relation among the constructs that impact both workplaces and individuals.

The study also checks the role of confounding variables in the relationship among the variables. The structural model did not differ even after adding different demographic variables, which indicates that the relationship between self-kindness, humanity, and self-transcendence was significant, and demographic characteristics of the sample did not affect the relationship. Interestingly, age was discovered to positively correlate and determine the person-organization fit of employees, which suggests that as employees' age increases, they tend to fit effectively in the organizations.

The study's first vital finding was the positive association between Humanity and Temperance. Having humanistic values would give one control over urges as one would identify oneself with other human beings and seek their behavior in a socially desirable way as an inspiration to control for one's surges. It is consistent with (Sanz & Fontrodona's (2019) findings, which suggested that human virtues are interrelated. The finding was also consistent with Bastian et al. (2013) they also dehumanize the self in response to their own harmful behavior. We examine this self-dehumanization effect across four studies. Studies 1 and 2 show that when participants are perpetrators of social ostracism, they view themselves as less human compared with when they engage in nonaversive interpersonal interactions. Perceived immorality of their behavior mediated this effect. Studies 3 and 4 highlight the behavioral consequences of self-dehumanization. The extent to which participants saw themselves as less human after perpetrating social ostracism predicted subsequent prosocial behavior. Studies 2 to 4 also demonstrate that consequences of self-dehumanization occur independently of any effects of self-esteem or mood. The findings are discussed in relation to previous work on dehumanization and self-perception. We conclude that in the context of immoral actions (self, which suggests humanity reflects self-restrained behavior among

individuals.

The second important finding of the study was the positive association between humanity and person-organization fit in total. This finding of positive association among humanity and person-organization fit supports previous studies regarding similar constructs' positive associated with (Yam et al., 2021). Moreover, Ünal & Turgut (2015) has already established that identification with humanity is one of fit of its kind that exists in organization fit making one with humanity virtue fit to the organization The study thus formulates a concept that those with identification to humanity and character strength align with humanity virtue would tend to identify themselves with their organization.

The study also significantly proves the positive association of temperance to person-organization fit. Thus, those who have self-control/self-restraint are expected to behave in a manner desirable organization by refraining from behaviors other than desirable.

Moreover, the study also established the mediating role of temperance in the relationship. When checked for the effects (i.e., Indirect and Direct effects) of humanity on person-organization fit, it was found that humanity has an insignificant direct effect in contrast to the significant indirect effect on person-organization fit. However, surprisingly the results were different in SEM and Hayes methods. In Hayes macro, the direct effect was also significant. Thus, there was no conclusive evidence on whether temperance fully or partially mediated humanity and person-organization fit. Though, the existence of Mediating effect is confirmed in both methods

Objectives Accomplishment

The study's first objective was to investigate the relationship between the three constructs; humanity, temperance, and person-organization fit. The objective is fulfilled, and the relations were found to be significant. The second objective was to examine temperance's mediating role, which was also significant. The third objective was to test the role of controlled variables on the relationship among the variables, which was significant only between age and person-organization fit. The present study's accomplished objective contributes to theoretical and practical implications, which we will discuss in the following section.

Theoretical Implications

The current research adds to the existing literature on humanity, temperance, and person-organization fit. The

research recognizes the predecessors and outcomes of virtue temperance by reviewing and testing its mediating role between humanity and person-organization fit.

The study adds to our existing knowledge on Self-Categorization Theory and, as also proposed by Hogg & Terry (2000), works on identity-related constructs (humanity in this study) and processes (temperance in this study) impacting organizational phenomenon (person-organization fit in this study) can extend and refine this theory. The study

refines the theory for future academicians working on self-categorization theory in the organizational context. The study also contributes to the Virtue Theory and identified humanity and temperance among employees as the virtues that would foster an ethical organization.

Practical Implications

HR Practitioners might utilize the results to encourage person-organization fit of employees and thus bring down the turnover intentions among the employees. It is necessary from an organizational perspective that employees gel well with others in the organization.

Organizations should encourage employees to exert a sense of common humanity (or even organizational citizenship behavior from a deep business perspective) to develop congruence with their working environment.

More importantly, in the chancing workplace dynamics, the employees need to have humanity for themselves, i.e., they should have kindness, love, and social intelligence, which are much required in today's dynamic world and as implication drove from the study having the feeling of humanity will promote temperance and organizational fit

Limitations and Future Scope of the study

Despite the contributions to the existing literature and practical implications, the research has some limitations that future studies can address. Firstly, the study included a sample size of 182 employees, which, however, was more than ten times the number of variables (13) and thus sufficient as per suggestions of Hair et al. (2010), though future studies can be conducted with higher sample size. Secondly, the study used self-report measures in a cross-sectional design, which may be susceptible to bias, such as social desirability (or common method bias), and lacks support for causality. However, statistically, we have assured no chances of common method bias. Still, future studies can use multiple sources to evaluate different variables and research designs such as longitudinal or

experimental to establish causality among the constructs. Moreover, the samples have been drawn from only Indian manufacturing and service sectors, limiting the study's generalisability. Future research can be conducted across different countries and cultures to validate the generalizability of the findings. Also, to generalize the findings out of the organizational context, further studies can include a sample from the general public rather than consider only the employee's perspective and check the effect of humanity and temperance on the fit of individuals in their community rather than just their organization

On the flip side of the coin, the findings can also be specified in a specific industry's context. Only particular organizations in a specific industry can be taken as the population to see if the variables play a similar role in different industrial contexts or remain the same. Future studies could examine the role of different moderators in the relationship of humanity, temperance, and person-organization fit to see when the relationship can be different in context to the presence of different variables. Also, group-level variables can be studied among the underlying relationship of the variables.

Conclusion

The current study is a communicative and substantial effort to advance the current literature with rigorous testing and empirical support to establish new associations among existing constructs, i.e., humanity's effect on person-organization fit through the mediation of temperance. The significant findings of the study demonstrated the features of the sample. Thus, in Indian organizations, employees' humanity leads to temperance (self-control/self-regulation), which ultimately helps the employees gel well in their organizations.

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Use of Information and Communication Technology to Control Corruption in Nepal

Ramesh Kumar KC
Research Scholar,
Lincoln University College, Malaysia

Abstract

This article explains the significance of use of Information and Communication Technology (ICT) to control corruption in Nepal. Corruption is considered the aggregate consequence of absence of transparency, rule of law, accountability and participation. Use of ICT is necessary to avoid the hazards of public service delivery and reducing the corruption. Information technology is being used not only to reform the public services but it is also used as a tool to reduce corruption. This article is analyzing the relation between global ICT ranking and corruption perception index which shows positive correlation between them. Study is also focused on the general perception survey about ICT and governance, suggesting that ICT can be very beneficial and powerful tool for sharing information, developing and presenting data and updating the records. Overall, ICT is considering an effective tool to control corruption in various dimensions.

Keywords

ICT, CPI, corruption, social media, information, digital divide.

Introduction:

Information and Communication Technology (ICT) indicates to the broad range of computer hardware, software, network, infrastructure and media that enable the processing, developing, storing and sharing of information and communication to both among humans and computers, locally and globally. ICT is a merger of computing and telecommunication technologies for information acquiring, retrieval, developing and dissemination. ICT is used in different fields of life like Business, management, administration, healthcare, marketing, science, education, development etc. ICT is used for multitasking, fast speed, cost effectiveness, data store and records. ICT is also used for accuracy in performance, data security, reliability, productivity and reducing working load.

Controlling corruption and achieving good governance is a complex task for which ICT is essential. Corruption has been cited as one of the most prevalent and persistent challenges in fostering economic growth and improving the quality of life. The World Bank's 2011 guide identifies corruption as "one of the single greatest obstacles to economic development and social development". It goes on to state that "through bribery, fraud and the misappropriation of economic privileges, corruption diverts resources away from those who need them most". World Bank publications have offered frameworks, strategies, and tools to challenge corruption in both the private and the public sectors. In countries large or small, market driven or otherwise, governments have fallen and prominent politicians have been removed after being accused of corruption. Current research documenting how corruption hinders economic development provides a compelling argument that efforts to challenge corruption are especially important in the developing world.

2. Objective

The objective of this study is to discuss the use of ICT in present context, to evaluate the corruption perception level and analyze the relation between use of ICT and its role to control the level of corruption in the context of Nepal.

3. Methodology

This study is mostly based on the secondary source of data obtained from various sources like library, website, records and so on. Appropriate calculation, presentation and analyze are made on the basis on general mathematical comparison tools. A small group of primary sources of data gathering and interpreting technique also used. An open-ended questionnaire had administered and gathered from 28 various fields of people asking how ICT can be

useful to control corruption, the respondent has presented in a percentage table.

4. Result and Discussion

USE OF ICTs to reduce Corruption: Some of the ways in which ICT is useful in the fight against corruption, and in particular in enhancing citizen participation in anti-corruption efforts, are:

- **Sharing information**: Technology can be used to provide a platform for sharing information on cases of corruption, which can raise awareness of these cases and may act as a deterrent.

- **Automation and digitization of government processes and services**: Technology has been used to automate government processes and reduce the face time public officials in certain positions have with the public. Automation may limit the discretion of public officials, increase transparency and make it more difficult for corrupt transactions to be affected.

- **Big data analytics**: ICT enables citizens and civil society actors to utilize big data in a way that can assist in targeted change and reforms and in the understanding of trends and patterns relevant to anti-corruption enforcement. In big data analytics data sets like financial disclosure, beneficial ownership, company data, financial intelligence data, tax authority data and procurement data could be analyzed to provide patterns and evidence of procurement fraud or other acts of corruption.

- **Technology** is being used to create transparency across organizations by increasing automation, accuracy and frequency across processes. International organizations are at the forefront of this revolution developing innovative software to detect and deter fraud and collusion. Traditionally it has been difficult to expose corruption due to large quantities of data. However, digitalism and the popularity of big data has led to new data management techniques to prevent fraud and abuse in the public sector. Fraud analytics are now able to detect patterns of suspicious transactions in areas including taxation and healthcare and with real time detection, agencies have been able to detect, stop and remediate fraud resulting in billions of potential cost savings.

- **Data Mining**: In public procurement, data mining is being used for auditing in order to monitor when governments are issuing bids and to identify red flags, patterns of collusion and false information. It is also being used to identify 'corrupt intent' in payments or transactions through data visualization. Anti-corruption software tools are being designed specifically for detecting and responding to fraud, including "intelligent mining" of data sets and administrative procedures.

- **Mobile Applications**: Mobile technology and applications are being utilized to harness data and gain faster insights. In developing countries this technology is being used to empower citizens in remote areas, making information more accessible and there is no reason why the success of this technology could not be used in the fight against corruption. In the future, there will also be features to detect the exact location of these concern transactions and activities.

ICTs use in Nepal: There is gradual expansion in the field of information and communication in Nepal. The major means of information and communication technology of Nepal are given below.

- Television
- Radio,
- Telephone
- Internet and Websites
- Computer application.
- CCTV, radio imaging,
- Social Media
- Smart phone and applications etc.

Television is the most effective and informative audio-visual media. News, entertainment, information and varieties of programs are being regularly broadcasted through various channels. The access to national broadcast of Nepal Television has 72.5 percent of the population 52 percent of the geographical reach. However, there are various private television broadcasting services including online television services in Nepal covering most of the territory of the country. Radio broadcast is another traditional means of communication which covers most of the territory in Nepal. There are more than 117 Frequency Modulation (FM) radio channels are spreading all over the country. Apart from these many online radio programs also broadcasting in Nepal.

There are more than 40 million telephones (fixed and

mobile) subscribers in Nepal. Among them mobile subscribers' rate is expanding as 140 per 100 population. Most of the population (22 million or 91%) are using the internet in Nepal. Nearly half of the population (13 million or 45%) in Nepal are using social media among them about 12 million are using Facebook and YouTube, Instagram and twitter users are 2.0, 1.9 and 0.3 million respectively. Social media is a best means to share personal, social and academic information in easy and fast mode. Smartphone is used for multiple purpose. Camera, audio recording, calculation, telephoning and so many utilities have a smart phone performs. Expansion of smartphone has made our life easy, expand digital literacy and coordinated many complexities. There is also increasing access of other ICT tools in Nepal. For professional development, easy and accurate performance and information storing these tools are being used. ICT tools are being used in various fields of life. Security personnel can use CCTV and radios, Doctors and health practice are using radio imaging equipment likewise Students are using computers, politician and entertainment field may use television and social media channels.

Corruption is an important agenda of the Governance. Corruption hindrance the pace of development. One of the indicators for modernization and development is the enough use of such ICT. However, the application of ICT in the governance sector has not been developed widely in Nepal. The main reasons for this are poor ICT infrastructure, weak capacity development of institution and weak human resources. These all ICT instrument and media can gather and disseminates information, Stores, computes, consolidates, interprets and develops the information. Social evil like corruption generates, grows and expansions in absence of ICT. To know the activities related to corruption, to check the expansion of corruption and to maintain good governance ICT tools are very useful.

Global ICT Index: International Telecommunication Union (ITU) annually publishes the ICT Development Index (IDI), which has been published annually since 2009. This is a composite index combined 11 indicators into one benchmark measure. It is used to monitor and compare developments in information and communication technology (ICT) between countries and over time. IDI is divided into three sub indicators comprising of total 11 indicators. First is Access sub index in which five infrastructure and access indicators (fixed-telephone subscriptions, mobile-cellular telephone subscriptions, international Internet bandwidth per Internet user, households with a computer, and households with Internet access) has been included. In Use sub index three intensity and usage indicators (individuals using the Internet, fixed broadband subscriptions, and mobile-broadband subscriptions) are included. In the Skill sub index three proxy indicators (mean years of schooling, gross secondary enrolment, and gross tertiary enrolment) are considered. The skills sub-index is given less weight in the computation of the IDI than of the other two sub-indices. Since 2018 IDI calculation has been changed considering 14 indicators instead of 11.

IDI is a valuable tool for benchmarking the most important indicators for measuring the information society. The IDI is a standard tool that governments, operators, development agencies, researchers and others can use to measure the digital divide and compare ICT performance within and across countries.

In 2017 IDI ranking Iceland is in the top rank having 8.98 score index, following by South Korea (8.85). Similarly, the third, fourth and fifth places are taken by Switzerland, Denmark, and the UK respectively with the scores of 8.74, 8.71 and 8.65. Among 176 countries taken for the study, whereas Eritrea is in the last 176 with the score of 0.96. In South Asian nations Maldives has the highest score of 5.25 with 85 ranks, followed by Bhutan scoring 3.68 and rank in 121. Afghanistan having score 1.95 is in last 159 rank. Nepal is in 140 global ICT rank Scoring 2.88 in 2017 which is the fifth rank among 9 SAARC countries.

Table:1 Corruption perception index (CPI) and Global ICT Development index (IDI) of SAARC countries

S N	Country	CPI (2021)			IDI (2017)		
		CPI score in 100	CPI Global rank	SAARC rank	Global ICT rank	SAARC rank	ICT score
01	Bhutan	68	25	1	121	3	3.68
02	India	40	85	2	134	4	3.03
03	Maldives	40	85	2	85	1	5.25
04	Sri Lanka	37	102	4	117	2	3.91
05	Nepal	33	117	5	140	6	2.88
06	Myanmar	28	140	6	135	5	3.00
07	Pakistan	28	140	6	148	8	2.42
08	Bangladesh	26	147	8	147	7	2.53
09	Afghanistan	16	174	9	159	9	1.95

Source: Transparency International and ITU Reports combination.

In above combined table no1 comprising of nine SAARC countries CPI rank and IDI rank is positively correlated. Bhutan, India and Maldives are top 3 ranked in CPI likewise these countries are also ranked high in IDI. The lowest rank in IDI countries Pakistan, Bangladesh and Afghanistan are also in bottom rank of CPI. This shows the country having low access in information, communication technology has the high corruption prevalence. In contrary, sound in ICT is in less corruption range.

Corruption and Corruption Measuring Indicators: Corruption is a form of dishonesty or a criminal offence which is undertaken by a person or an organization which is entrusted with a position of authority, in order to acquire illicit benefits or abuse of power for one's personal gain. The forms of corruption vary but can include the activities related to bribery, lobbying, extortion, cronyism, nepotism, parochialism, patronage, influence peddling, graft and embezzlement.

Corruption Perception Index (CPI) is to measure the abuse of entrusted power for private gain. This index each country receives a score range from 0 (extremely corrupt) to 100 (no corruption) and individual country score are developed by corruption related data. The corruption perception index (CPI) was first launched in 1995 and publishing annually by the transparency International. CPI provides data on perceptions of level of corruption within the countries and enhance understanding of levels of corruption from one country to another. In 2022 CPI report Denmark, Finland and New Zealand are in the top among 180 countries scoring 88 out of 100. The most corrupt country in 180 the rank shown South Sudan scoring only 11. In South Asian countries Bhutan stands 25th rank having 68 score out of 100, while India in 85 rank score 40 and Nepal in 117 rank scored just 33.

World Governance Indicator (WGI): Another Indicator to know the whole governance level including corruption is Worldwide Governance Indicator (WGI) which reports aggregate and individual governance indicators for all over the globe initiated by world bank. The six dimensions of WGI are;

1. Voice and accountability
2. Political stability and absence of violence
3. Government Effectiveness
4. Regulatory quality
5. Rule of Law and
6. Control of Corruption.

There may be so many ways to measure the corruption. Corruption measuring tool and technique explain the general perception and analysis. Some other methods of measuring corruption include public expenditure tracking survey,

Focus group survey, and inquiry on mostly concerned public authorities like police officers, journalists, judges, advocates etc.

Survey on Role of ICT to reduce corruption: A mini questionnaire has been administered in a group of various professionals asking how does the ICT helps to reduce the corruption in the context of Nepal. Purposive random sampling of 28 people has been selected from Academic professionals, media person, public bureaucrats, politicians and general public comprising of 6,4,6,5,7 respectively. person from each sector. The response is shown following table;

Table 2: General perception for ICT implementation and Corruption reduction

S n	How ICT helps to reduce corruption	Response Number and (%)
1	By Increasing people's awareness about corruption	2 (7.1)
2	By Providing Effective service delivery	1 (3.5)
3	By Reducing human interface (unnecessary meeting)	5 (17.8)
4	By effective and efficient service delivery	2 (7.1)
5	By Sharing information about corruption promptly	1 (3.5)
6	By Easing to report corruption case	2 (7.1)
7	By Easing to investigation and prosecution	1 (3.5)
8	By Reducing administrative process	2 (7.1)
9	By maintaining Transparency	1 (3.5)
10	All of above	11 (39.3)

Source: Survey (2022)

Maximum of the respondents (39.3%) has suggested all of above reason helps to reduce corruption. Five among 28 (17.8%) respondents has argued Reducing human interface or avoiding unnecessary meeting can help to reduce corruption. Remaining either one or two respondents has suggested ICT can help corruption by creating awareness, providing service delivery, sharing information, easing to report and prosecution and maintaining transparency.

Challenges of ICT in controlling corruption: There is a holistic need of willingness and ability to adopt ICT in governance. First the policy, program and resources should be supportive for expanded use of ICT. Later human resource and infrastructure should also be developed. There are some limitations and challenges in using ICT in Nepal, main challenges are;

- Safety, security and misuse of technology and growing cyber crime
- Reduce and displace human employment
- Limited Resources availability
- Poor capacity development (Institutional and Human resource)
- Weak Infrastructure (Electricity, Internet)
- Weak Quality of system and technology

Conclusion:

Corruption is an obstacle for development and good governance in Nepal. Corruption is associated with various aspects of governance like Policy and execution, Judiciary service, Police and governance, Land reform and management, Revenue administration, Development Administration, technical education etc. Delivery of effective and quality service is not only essential for client satisfaction but it is also necessary for controlling corruption. Effective service delivery provides client satisfaction. For effective and efficient service delivery use of modern ICT technique is crucial. ICT can reduce the corruption level associated to human interface, service delivery process and quality issue. There are several barriers in extensive use of ICT in Nepal. Use of ICT has a positive relation to reduce the level of corruption in Nepal.

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Looking through the Lens of Gender Difference: Self-esteem and Job Satisfaction of Indian BPO Employees

Mani P Sam, Deepak Babu*, Imran Ahmad Khan

Abstract

The current global pandemic will be the catalyst to the unprecedented changes in future employment sources and location of workplace. We soon experience organizations creating feasible job locations in the post COVID era. Till now the IT enabled services and business process outsourcing (ITES/ BPO) sector are at the forefront in providing employment to the less qualified, semi-skilled people cutting the gender barriers and bringing a needed change in social development of society. This sector adds their bit to the achievement of United Nations' sustainable development goal to achieve full and productive employment and decent work for the women. The type of job and job location give one the work identity which recognizes an individual. The impact of both job location and work identity can be positive or negative. Providing job with decent work is important because it is linked to the work identity, social status and it determine the psychological state of employees in terms of their self-esteem and job satisfaction.

The gender differences in self-esteem and job satisfaction among employees of Indian BPO is studied in this research work. In a mixed-effects analysis, men scored significantly higher than women on self-esteem and job satisfaction. The study also found that the women working as data entry employees in Indian BPOS actually deficient in self-esteem and job satisfaction compared to men performing the same duties. It discusses and argues about the organizational learning ability for BPOs about women workforce strategies and manpower planning based on decent work for all.

This study sought to identify the antecedents and consequences of data entry job satisfaction and assess the significant relationships to their self-esteem and job satisfaction. The gender differences in job satisfaction was studied focusing on location job related self-esteem. Findings may guide employers in creating more decent jobs for less educated and semi-skilled women in small towns and rural settings especially in the post COVID era in the developing economies.

Keywords

Gender difference, Gender equality, Job satisfaction, Self-esteem

Introduction:

The Indian (IT enabled Services/BPOs) global offshore and outsourcing services industry has grown in the last four decades and from a modest $200 million in the 1980s to about $150 billion per year in the last few years (NASSCOM, 2010; 2019). This spectacular growth generate employment in India, BPO sector constitutes a tiny fraction which is 0.7 per cent of the total workforce in India. The employment through this sector has been concentrated to the socially advantaged and economically well-off sections in urban areas only. A study by Cockburn in 1985 argues that new technology has served to reinforce the gendered division of labour; deskilling women's jobs, devaluing their position in the workforce and restricting their career prospects. A study by Androniki Panteli et. al. (1999) presents evidence that the IT industry is not gender-neutral and that it does little to promote or retain its female workforce.

Women are working in unprecedented numbers and the compensation gap between male and female pay appears to be tapering in most of the professions. According to International labour organization (ILO) women's participation in the labour force stood at 48 per cent in 2018, compared with 75 percent for men. Around 3 in 5 of the 3.5 billion people in the labour force in 2018 were men. 2 billion workers were in informal employment in 2016, accounting for 61 per cent of the world's workforce and there are more women (85 million) than men (55 Million)

in underutilized category in the labour force. India ranked 138 globally for the labour force participation and the female worker participation is only 28.7 (The Global Gender Gap Report 2018) the gaps between men and women across all of these measures are slowly getting smaller. In 2018 the WEF report showed that 68% of the overall gap is closed, a slight rise from about 65% in 2006. Much of that has to do with educational attainment and health, where gender differences have almost vanished.

All 193 member states of the United Nations agreed in September 2015 to 17 Sustainable Development Goals (SDGs) as a framework of cooperation and as guideposts for national policies to achieve sustainable development around the world. One of the key Sustainable

The existing academic studies shows that enhancing women's economic participation improves national economies, increases household productivity and living standards, enhances the wellbeing of children with positive long term impacts. In 1987 the Industrial Relations Research Association (The Bureau of National Affairs, Inc., Washington, D.C.) for the first time published a very important report entitled "Working Women: Past, Present, Future". That was the milestone which endeavor addressing women issues related employment. Many studies describe how their self-esteem and satisfaction at work.

The World Economic Forum in 2006, introduced 'the Global Gender Gap Index' as a framework for capturing the magnitude of gender-based disparities and tracking their progress over time. But there is still a vast gulf of available literature which explain how the type of job, location of workplace has a strong effect on the job and location related self-esteem and job satisfaction of female employees working in ITeS/BPOs in India.

Review of Literature

Self-esteem

The people's positive view of themselves and their job may differ based on gender and location. The sociological literature provides good reason to expect that self-conceptions differ by gender. According to Lambert's (1971) "beliefs about the roles of the sexes are threads running through the fabric of society, having multiple effects upon human institutions and themselves nourished and sustained by these institutions."

The self-esteem has been studied extensively by many social scientists and researchers in in different contexts. William James defined self-esteem in terms of competency and success in areas of life that are important to the individual (James, 1890; Mruk, 2013). Rosenberg (1965) defined self-esteem as an individual's overall sense of self-worth. Empirical evidences support the value of self-esteem. Self-esteem is generally linked with positive affect (Baumeister, Campbell, Krueger, & Vohs, 2003). Ryan (1983) noted that high self-esteem is related to traits that are associated with humility, such as empathy, grace, contentment, honesty, and courage. Mruk (2013) stressed that self-esteem functions to guide self-protection and self-expansion. Individuals with high self-esteem will seek out opportunities to grow or expand themselves and stay satisfied. In the current work we seek to establish how job location and gender are related to self-esteem. The type of job, location of job and job discretion has positive impact on performance (Cougar and Zawacki, 1980). In Morrison's view, job autonomy is also a critical success factor for women (Morrison, et.al., 1987).

Many studies suggested that females have distressingly low self-esteem and it further suggest that girls and women suffer from negative self- images. Three previous meta-analyses found that the effect size for the gender difference in self-esteem was small d = 0.15; in adolescence the difference was d = 0.33, a small to medium effect size (Kling, Hyde, Showers, & Buswell, 1999; Major, Barr, Zubek, & Babey, 1999; Twenge & Campbell, 2001). These previous meta-analyses examined gender differences in global context but not domain-specific self-esteem. Global self-esteem is "the positivity of the person's self-evaluation" (Baumeister, 1998, p.694) or "the level of global regard that one has for the self as a person" (Harter, 1993, p. 88). Domain-specific self-esteem, on the other hand, describes self-satisfaction in specific areas (e.g., appearance, academics, type of employment). Self-esteem may vary considerably from one domain to another. Thus, domain-specific self-esteem may show larger gender differences than global self-esteem (e.g., Sondhaus, Kurtz, & Strube, 2001; Tiggemann & Rothblum, 1997). The present research undertakes a comprehensive meta-analysis of gender differences in domain-specific areas of self-esteem.

Brittany Gentile and team did meta-analysis in 2009 and examines gender differences in 10 specific domains of self-esteem across 115 studies, including 428 effect sizes and 32,486 individuals.

An influential review (Baumeister, Campbell, Kruger,

& Vohs, 2003) found that global self-esteem was linked to happiness, but had few benefits for academic achievement, work performance, or healthy behaviors. In contrast, domain-specific measures of self-esteem are consistently correlated with performance within that domain, apparently in a reciprocal process in which each causes the other (Marsh & Craven, 2006).

Full-time housewives were hypothesized to have lower self-esteem than women in the labor force. (Women working as White-collar employees may have higher self-esteem) If society devalues women generally, it assigns housewives even lower regard. If the job is socially isolated, powerless, and unpaid or less paid (Berk and Berheide, 1977; Ferree, 1976).

Job satisfaction

The job satisfaction as a positive emotional state resulting from the evaluation of one's job experience (Okpara JO; Squillace M & Erondu EA, 2005). Job satisfaction is an attitude developed by an individual towards the job and job conditions. Job satisfaction can be defined as one's affective attachment to the job viewed either in its entirety (global satisfaction) or with regard to particular aspects (facet satisfaction) (Tett & Meyer, 1993). This view supported, by defining job satisfaction as one's reaction against his/her occupation or organization (Porter LW, Lawler EE, Hackman JR., 1975). There are evidences of women having lower wages, poorer job conditions, and being worse off in terms of discrimination, job content and promotion opportunities; female workers are frequently found to have equal or higher levels of job satisfaction than men (Clark, 1997; Sousa-Poza and Sousa-Poza, 2003; Kaiser, 2007, Blanchflower et al., 1993).

Most of the empirical studies probing job satisfaction based on gender recommend that women's job satisfaction is significantly higher (Long, 2005; Clark, 1997; Bokemeier and Lacy, 1987; Hull, 1999; Kaiser, 2007). The existing studies on job satisfaction and gender offers two explanations. Firstly, it is claimed that the comparatively high level of job satisfaction of female employees may be described by their relatively low expectations of promotions or other incentives (Sloane and Williams, 2000; Sousa-Poza and Sousa-Poza, 2000). Long (2005) and Clark (1997). Though better incentives and career growth opportunities may be less important for women, but they expect interesting work content and good work schedules (Bokemeier and Lacy, 1987; Clark, 1997; Babcock et al., 2003; Bender et al., 2005).

Women might be more satisfied with their jobs even when facing lower wages and having less career opportunities. We see a distinction between valence of type of job, its dimensions and job rewards. No study found which talks about job location and its effects on job satisfaction especially women job satisfaction when working in small towns.

'How satisfied are the women with their jobs especially who work for BPOs in India?' is a serious question because these women are not highly educated and tech savvy. Their job location, job identity and relative self-esteem plays very important role in improving their job satisfaction. Many researchers have tried to develop several types of job satisfaction scales to measure the level of job satisfaction or to improve the job satisfaction of employees in an organization. Greenberg and Baron (2000), states that job satisfaction is a persons' positive or negative feelings about their job.

Locke stated flexible timing, job sharing, shorter workweeks are quite valued by employees and the job activities such as pursuing hobbies (Feldmann, 1985). There are studies which prove gender is linked to commitment and job satisfaction. Clark in 1997 stated that 'unless some factors were remained constant, the job satisfaction of women was higher than men'. The gender wage differential has long been considered an important research topic (Blau and Kahn 2017; Ku and Salmon 2012). Even though gender wage differentials have decreased over time, they still exist and are the subject of many studies. Kaiser in 2007 studies 15 EU countries and found that women have greater job satisfaction than men in labour markets that are more restrictive for women. Sloane and Williams (2000), in another highly cited paper suggested that the determinants of job satisfaction for women and men differ. Paul Redmond and Seamus McGuinness (2019) found that Gender gap exists in job satisfaction because women have lower expectations than men.

Many studies confirmed that women are more satisfied than men at work (Phelan, 1994; Mueller and Wallace, 1996; Clark, 1997; Sousa-Poza and Sousa-Poza, 1999, 2002; Sloane and Williams, 2000; Ward and Sloane, 2000, 2001). At the same time women face disadvantages on the labour market with respect to employment (Azmat et al., 2006) and wages (Weinberger, 1998).

But in current study women are engaged in data entry job only and purpose of study is see how their job identity and

job location affect their self-esteem and ultimately their level of job satisfaction. It was confirmed that women have higher level of job satisfaction than men because of two important factors

Method

To collect data from the employees of a firm working in online transaction processing department, prior permission was taken from firm management to conduct study based on employee self esteem and job satisfaction. The data were collected from four different centers out of them two each are in rural and urban segment. The researcher introduced the research idea to 627 employees working in the firm during a formal event. During this event a short survey was circulated to the respondents with one inclusion question, that they were working in organization more than 2 years. The demographic analysis of the sample shows that mean age of the respondent is 27.70 (SD=8.99) with married people constitute 61.8% of the responses as 38.2% were unmarried. Among the respondents in the survey majority have completed their graduation (55.2%) followed by higher secondary (27.3%). On basis of religion majority of respondent belongs to Hindu religion 48.4% followed by Christian (29.3%).

The respondents completed a survey comprised of Macdonald and MacIntyre's 10 item job satisfaction scale. This scale is prominently used to measure a workplace job satisfaction among the employees. For measuring self-esteem revised version of Janis and field feeling of inadequacy scale was used which comprises of 26 items. All the items are based of semantic scale from 1 to 5-point scale comprises of term such as 'very often', 'fairly often', 'sometimes', 'once in a great while' or 'practically never'. To establish the reliability of the scale Cronbach alpha was calculated for self-esteem (0.804) and job satisfaction (0.811) which shows values are above the cutoff value of 0.7, so this result shows that instrument used for the study is reliable.

The convergent validity and discriminant validity were calculated based on the values of mean, standard deviation, composite reliability and average variance extract. The mean and standard deviation was calculated through finding average values of all items that comprise the construct under study. The confirmatory factor analysis loading values obtained provided AVE and CR values for each construct. According to Hair et al. (2009), the permissible limit of CR requires that all variables show satisfactorily high values (0.81). Inter-factor correlation was established to show that the constructs under study are related as per the hypothesized statements. The convergent validity of all latent variables we tested from the standardized path loading of scale items for different constructs. This showed a range of values from 0.6 to 0.91, which indicates that it is above the permissible limit of 0.5 (Hair et al., 2009). In Table 1, standardized CFA factor loadings are provided along with Cronbach alpha values. Average extract variance estimates are also greater than the permissible limit of 0.5 and the values are shown in the diagonal position in Table 1 below.

Table 1. Descriptive statistics, composite reliability, AVE and inter-factor correlation estimates

	Composite reliability	Cronbach Alpha	Mean	Std. Deviation	Self-esteem	Job satisfaction
Self-esteem	0.82	.804	3.90	0.63	**0.502**	
Job satisfaction	0.89	0.811	4.10	0.20	.424**	**0.677**

*B**oldface values** provided in diagonal position shows AVE for each construct

Analysis and Finding

In this study based on the responses of 395 employees from ITeS firm tried to test hypotheses that there is a significant difference of job satisfaction and self-esteem between female and male employees. For testing this hypothesis independent sample t test was conducted and the result are depicted in the table below. The distribution of self-esteem and job satisfaction among male and female are varied considerably within sample group. For male self-esteem was in a range of 1.734 (min) to 4.82 (max) with a mean score of 3.99(SD=0.45) and in female group self-esteem was in the range of 2.37 (min) to 4.9 (max) with a mean score of 3.89(SD=0.69). Further, in case of job satisfaction in male group range varies from 1.9 (min) to 4.7 (max) with a mean score of 3.19(SD=0.67) and female group shows a range of 1.03 (min) to 4.32 (max) with a mean score of 2.6 (SD=0.65). the result here shows that there is no significant difference between male and female respondent based on perception of self esteem and job satisfaction.

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Self_esteem	1	128	3.8906	.45150	.03991
	2	267	3.9963	.69238	.04237
Job satisfaction	1	128	2.6695	.65539	.05793
	2	267	3.1970	.67081	.04105

Furthermore, based on a priori prediction that location of the people residing has a significant influence on their self esteem and job satisfaction. Thus, a general linear model was run to find the interaction effect of location with gender on perception on job satisfaction. The table with result is provided below

Tests of Between-Subjects Effects						
Dependent Variable: jobsat						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	85.619ª	3	28.540	99.013	.000	.432
Intercept	3021.816	1	3021.816	10483.633	.000	.964
Location	60.772	1	60.772	210.838	.000	.350
Gender	16.932	1	16.932	58.741	.000	.131
Location * Gender	4.129	1	4.129	14.325	.000	.035
Error	112.702	391	.288			
Total	3815.390	395				
Corrected Total	198.321	394				
a. R Squared = .432 (Adjusted R Squared = .427)						

From the result, it is depicted that main effect of location is significant F (3, 391) = 60.7 at significance level of 5%. Further, it shows that main effect off gender is significant F (3, 391) = 16.9 at significant level of 5%. The interaction effect location and gender shows a significant effect on job satisfaction and the estimated marginal means plot shows that female(Mean=2,24, S.D= 0.061) in urban location are less job satisfaction as compared to male (Mean=2,92, S.D= 0.044) from urban location. This result is consistent with female (Mean=3.326, S.D= 0.076) in rural location is also showing higher satisfaction as compared to male (Mean=3.554, S.D= 0.050) in rural location. It is further shown in the data that female (Mean=3.326, S.D= 0.076) from rural location shows higher job satisfaction as compared to female(Mean=2,24, S.D= 0.061) in urban sector. Further, the result among male (Mean=3.554, S.D= 0.050) in rural sector is showing higher job satisfaction as compared to male (Mean=2,92, S.D= 0.044) in urban location.
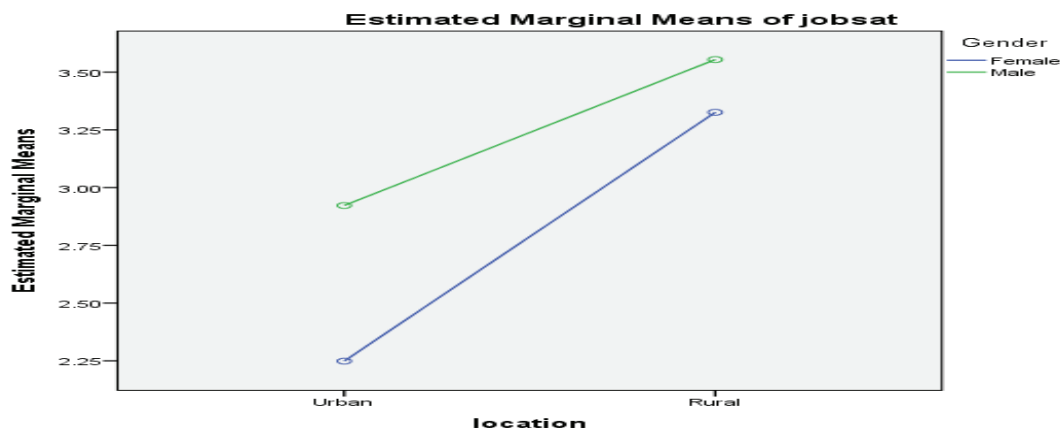

To estimate the influence of gender and location on self-esteem of the employees a general linear model was run to find the interaction effect of location with gender on perception on self-esteem. The table with result is provided below

Tests of Between-Subjects Effects

Dependent Variable: selfesteem

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	100.376ª	3	33.459	242.290	.000	.650
Intercept	5347.196	1	5347.196	38721.564	.000	.990
Gender	1.466	1	1.466	10.617	.001	.026
location	56.954	1	56.954	412.434	.000	.513
location * Gender	10.920	1	10.920	79.077	.000	.168
Error	53.995	391	.138			
Total	6354.940	395				
Corrected Total	154.370	394				
a. R Squared = .650 (Adjusted R Squared = .648)						

From the result, it is depicted that main effect of location on self-esteem is significant F (3, 391) = 56.9 at significance level of 5%. Further, it shows that main effect of gender on self-esteem is significant F (3, 391) = 1.46 at significant level of 5%. The interaction effect location and gender shows a significant effect on self-esteem and the estimated marginal means plot shows that female(Mean=3.7, S.D= 0.36) in urban location are higher self-esteem as compared to male (Mean=3.47, S.D= 0.39) from urban location. This result is not consistent with female (Mean=4.17, S.D= 0.42) in rural location is also showing lower self-esteem as compared to male (Mean=4.66, S.D= 0.31) in rural location. It is further shown in result that female (Mean=4.17, .D= 0.42) from rural location shows higher self-esteem as compared to female (Mean=3.7, S.D= 0.36) in urban sector. Further, the result among male (Mean=4.66, S.D= 0.31) in rural sector is showing higher self-esteem as compared to male (Mean=3.47, S.D= 0.39) in urban location.

Estimated Marginal Means of selfesteem
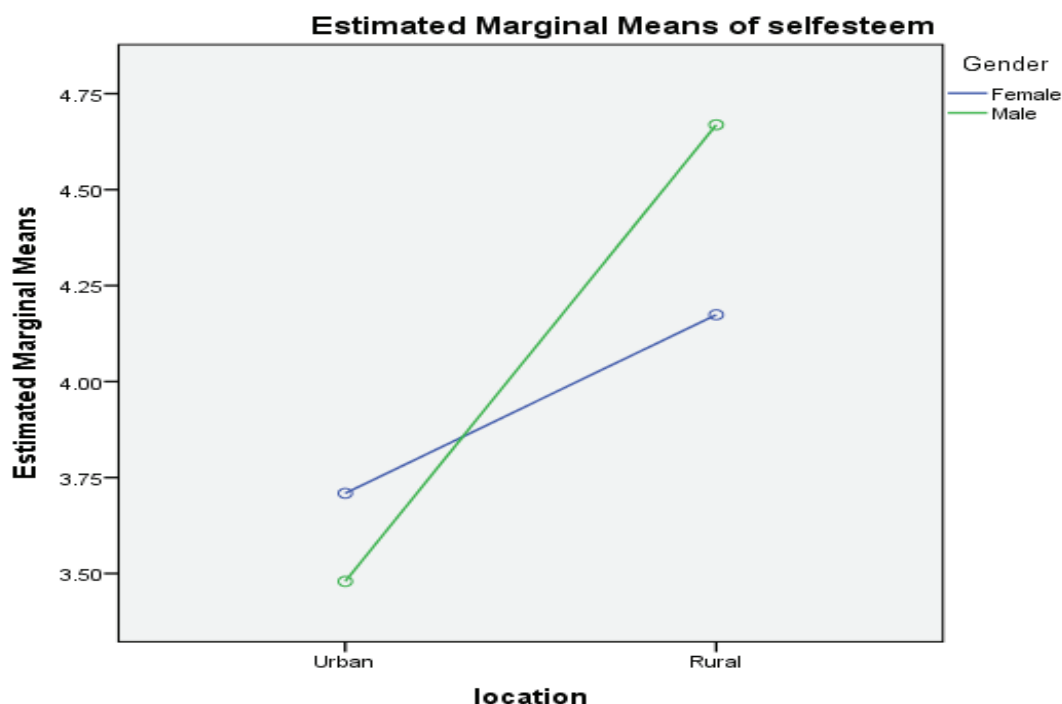
Discussion

The issues involved appears to be much deeper and involved than what meets the eye. Our study tried to link self-esteem and job satisfaction with the job location. It was also assumed that the rural locations offered women higher self-esteem and job satisfaction than the urban location. There are varieties of theories of Self-esteem, or instance global self-esteem which refers to the overall aggregated opinion of oneself at any one time, on a scale between negative and

positive (Harter, 1993, p.88 as cited in Kling et al., 1999) or domain specific self-esteem which relates to one's self-esteem in regard of a particular area, such as a white collar IT Job or defense service for a nation etc.; or trait self-esteem which described as an individual's accumulated lifelong perception of social inclusion and exclusion (Leary, Tambor, Terdal & Downs, 1995).

William James is repeatedly referred to as the creator of the self-esteem movement (Hewitt, 2005; Kling et al., 1999; Leary et al., 1995; Seligman, 1996) and his formula of self-esteem appears to be well respected, which is based on two elements, feeling good about ourselves (pretensions) and how well we actually do (success), are inextricably linked; we can feel better about ourselves by succeeding in the world but also by varying the levels of our hopes and expectations. In this study employees from small towns working for BPO as a white collar employees feel good about themselves and see them successful against the local hopes and expectations.

However, when we find that the self-esteem and job satisfaction is lower irrespective of the job location them the underlying root causes need careful study. It has major impact when "Work from Home" becomes essential and more and more rural women are drawn into the workforce. The Maslow's needs hierarchy theory (1943) is based on human needs play important role in job satisfaction. Once the basic needs satisfied, the employee will seek for self-esteem needs to feel as though they are valued and appreciated by their colleagues, organization and community. The 'Job Characteristics Model (Richard Hackman & Greg Oldham, 1980) which is based on five key job characteristics: skill variety, task identity, task significance, autonomy and feedback, influence the psychological states. In this study authors are trying to establish the relationship between job related self-esteem and job satisfaction.

Managerial Implications

COVID 19 has established that working from home is a very valid form of professional employment and it was also observed that many of the ITES and BPO employees actually moved back to their hometowns and parental homes during the pandemic. Our study conducted before the pandemic had found that the Rural Job locations had offered higher job satisfaction and self esteem to both the genders (we did not have any one classifying as the third gender and hence the study had to limit itself to male and female genders alone.

The lower self esteem and job satisfaction experienced by the female workers may reflect the influence of many factors. It may be possible that the female workers are less mobile when compared to their counterparts and hence it may not have been able for them to opt for better positions even if available at another location. The upward mobility of data entry operators is limited as the steep pyramidal structure of the setups and there may be a single supervisor for almost 30 workers. At entry level job positions the stress and feelings of homemakers may not be fully erased ,a s many of them doubled as home makers in addition to the data entry job. (one location even had a homemaker shift which started late to accommodate mothers with school going kids, and it was found that they had completed all the cooking for the day before coming to the work place.

Similar predicament was experienced by working mothers when they switched to work from home as the kids (who were also at home due to shutdown) demanded more attention and care from their mothers.

It may be true that the society need to change as mentioned in the HBR article "Gender Equity Starts in the Home "by David G. Smith and W. Brad Johnson May 04, 2020." Despite the fact that women outnumber men in the paid workforce, women still do more of the domestic work and childcare — almost twice as much as their male partners.".

There is another aspect which need to be considered. Since there were unmarried females in the survey, does the result indicate a continuing bias towards female participation in domestic work, which is leading to low self esteem and job satisfaction among the female workers? The nature of job and compensation were the same and hence this seems to be one of the possible factors which caused this differential.

The impact of such engagements on their wellbeing may be quite detrimental if the "official work" is just added to her domestic chores. There is a need for social sensitization of men as well as older women so that there is an earnest attempt to share the other chores of a woman working from home.

Organizations should start gender sensitization lessons for their employees at all levels to remove the straight jacketing of domestic work and childcare with a specific gender. De-gendering of office jobs is progressing rapidly but a faster adaptation at home front may be the urgent need.

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A study on mobile wallets from the perspective of Interpersonal Behavior Theory with Gamification as moderating variable

Shachi Desai[a] and Jayesh Aagja[b]
[a] *Ph.D Student, Institute of Management, Nirma University, Ahmedabad, India*
Email Id: shachi.desai@nirmauni.ac.in
[b] *Associate Professor, Institute of Management, Nirma University, Ahmedabad, India*
E-mail Id: jayeshaagja@nirmauni.ac.in

Abstract

With the increasing need for the digitalization, the usage of the mobile wallets has drastically increased. Research on mobile wallets has been done since a long time but mainly using TAM or UTAUT model which tends to explain the intention and usage towards the mobile wallets. In this paper we try to develop a model based on Triandis theory of Interpersonal Behavior which tends to take into consideration some important constructs like affect and attitude. Also this paper aims at considering gamification as moderating variable as from the research it has proved to influence the usage in the various fields. This is a form of conceptual paper aiming to develop basic understanding of the Interpersonal Behavior Theory and study of gamification in technological applications.

Keywords

Mobile wallets, Interpersonal Behavioral Theory, Gamification, Digitalization

Introduction

A technology providing appropriate, fast and valuable services, all through one medium is usually preferred by all customers. Mckinsey report of March 2019 stated that India is among the major growing market for its online customers, having internet subscribers in figures as 560 million in 2018, coming after China. There are 1.2 billion Indians who have subscriptions of mobile phone in 2018 and according to analysis concerning of some 17 matured emerging countries, India is one among them who is digitizing at a faster rate compared to other countries. A report developed by GSM Association (GSMA) in association with Boston Consulting Group (BCG) of 2019 said that mobile economy of India is rising rapidly which would back the Gross Domestic Product (GDP) of India. According to Statistics of India, the total number of mobile phone users in India was about 730.7 million in 2017 which has rose to 813.2 million by 2019. India is moving towards digitalization at a rapid pace that is evident by the normal mobile data holder which consumes greater than 8 GB of data on monthly basis, exceeding the well advanced countries like South Korea and China in terms of digital methods of payment. In coming five years, there would be an addition of around 500 million new users of internet due to increase in mobile-phone diffusion and weakening of data costs that would help to create opportunities for different businesses (IBEF 2019).

Literature shows that mobile payment facilities resembles a progressive and flexible technique including feature like conducting all banking services using mobiles (Abhishek & Hemchand, 2016; Schierz, et.al 2010; Shin, 2009; Thakur & Srivastava, 2014). There is substantial growth in mobile payments among the Asia-Pacific countries. The total digital payments were recorded $500 billion in 2017 and $321 billion in 2016 by using mobile phones worldwide (Capgemini, 2017).

The transactions using cellphones in India have risen to 325.2 million (38%) in 2018 in comparison to previous year which was 235.5 million transactions. Total amount transacted in mobile wallets increased to Rs. 15,202 crores from Rs. 6934 crores (119%) in 2017 (Gupta, 2018). There are various benefits from Government for the mobile payment customers like offering cashbacks, giving rewards, waiver in service tax till 15% for transactions more than INR 2000, in order to increase their usage towards digital mode of payments. The global mobile wallets market is growing steadily with mobile proximity payments expected to grow from USD $3 billion in 2013 to USD $53 billion by 2019. Mobile wallet transactions are expected to grow at a CAGR of 61.8% during 2016-2021. India has also seen a rise in mobile wallet adoption since the demonetisation measures adopted on Nov. 8, 2016.

In India, still 90% of all transactions are done in cash, even though there is growth in digital wallets and other online payment systems, as Consumers are scared regarding personal information being leaked (Hossain, Quaresma, & Rahman, 2019). Regardless of exponential development of the customers of the mobile wallets and other payment systems, the more favorable payment method in country like India is still in form of cash. According to "Nielsen Global Connected Commerce Survey", the more preferred choice of delivery in this country is India. Nearly 83% of respondent's preference was cash when compared with other online payment methods. Also, there is a prediction that the success of online payment industry is not for very long time. As the flow of cash in the society would increase, the progress of online payment systems would be stagnant because of weak diffusion of internet and absence of knowledge for using online payments (Singh, 2017). As a result there are diverse perceptions regarding the online payment methods sustainability, especially in case of mobile wallets. The literature concerning the technology acceptance, the most used model is technology acceptance model (TAM) explaining that the user's attitude for accepting new technology depends on the perceived usefulness and ease of use regarding new technology.

With this paper, we aim to understand the constructs of interpersonal behavioral theory given by Triandis (1977). This model did not receive much of the acceptance due to its complexity (J. Robinson, 2010) and inclusion of constructs such as emotions and affect (Godin, 2008). We believe that these constructs in today's world has much more worth then understanding only the functional benefits when talking about the usage of any product or technology. This theory helps in understanding the complex behaviors which are influenced by physical and social environments (Elciyar & Simsek, 2021). Also one fascinating construct, gamification is taken which plays a moderating role in understanding the actual usage of the mobile wallets. Earlier papers have shown that gamification in moderating role has an important effect towards the use of the diverse technologies (Baptista & Oliveira, 2017). Many studies on mobile wallets have been done in past using TAM, UTAUT model to understand the different factors that influence its behavioral intention and actual usage (Shin, 2009; Slade et al., 2015; Dahlberg et al., 2015). Hardly any studies are conducted using Interpersonal Behavior theory (Pare

& Elam, 1995), which thus becomes our motivation to write this paper. Second motivation is inclusion of gamification into this theory to understand its role in the actual behavior towards the mobile wallets. With this paper, we would be in position to answer how constructs like emotions, affect have a role to play in technology domain particularly in the behavior towards the mobile wallets and how gamification would be moderating the behavior.

Approach to reach to this idea

Initially it started by exploring the literature done in the area of mobile wallets. The key terms mobile wallets and gamification were used to explore what all work has been done in this domain. After going through the literature it was known that, the study of mobile wallets is limited to only TAM and UTAUT models. This two technology adoption theories have dominated the whole study of mobile wallets. But there was one other theory in the domain of technology adoption which was Theory of Interpersonal Behavior which was not fully explored and was only limited to very few studies. As of now, very few or almost no one has explored this theory for studying the adoption of mobile wallets. Initially the main focus was on the studying mobile wallets in relation with the concept of gamification factor. The data of the searches made for this paper is shown in below table 1:

Table 1

Search Terms	Science Direct	Emerald	EBSCO
Mobile Wallets (Total)	198	143	785
Mobile Wallets (Articles)	134	99	31
Adoption of Mobile Wallets	100	93	17
Theory of Interpersonal Behavior (TIB)	174	53	15
Theory of Interpersonal Behavior + Mobile Wallets	0	0	0
Mobile Wallets + Gamification + TIB	0	0	0

The above table shows the search terms used in this article from three search engines: Science Direct, Emerald and Ebsco. Initially the filter (from 2015-2020) was used, but due to less number of articles found, this filter was removed. Hence from the above

table, it triggered that studying this concept of adoption of mobile wallets in the domain of gamification by using theory of interpersonal behavior carries value and adds to the knowledge in the existing domain.

This paper highlights the scope of studying the mobile wallets adoption with a theory different from TAM and UTAUT with new emerging concept like gamification. It can give an idea to researchers to further explore this and related topics more with empirical conclusions. It is an attempt to use the theory of interpersonal behavior in order to understand its nature in terms of technology adoption.

Literature Review and Theoretical Framework

Mobile Wallets:

Reserve Bank of India calls mobile wallets as prepaid instruments (PPI). Mobile wallets are generally of three kinds in India, like closed PPI, semi-closed PPI and open PPI. Closed PPI wallets are distributed by companies for purchasing products & services only from that particular company. Closed wallets disallow money drawing or recovery. The second type, Semi-closed PPI is used for purchasing goods and services from suppliers having an agreement with the issuer for accepting payments. Finally open PPI wallets are used to purchase products and services, withdrawing money from ATM, and also for transferring funds. The administrations must together be propelled with a bank. Talking about India, the Government has likewise presented a digital wallet named as "Bharat Interface for Money (BHIM)" to request its people for using digital payments.

Mobile payments are used since a long time which led to increase in its existence (Dahlberg, et.al 2008). In a way mobile wallet is believed to be the advanced version of the mobile payments which replaces the conventional wallets. Thus a wallet that has "lost the physical form and taken the electronic form is termed as the mobile wallet". As mobile technology have been evolved in rapid way, the base of users using mobile phones are increasing and thus a growth is observed in the usage of the mobile wallets (Au & Kauffman, 2007). Initially mobile wallets were introduced to provide the services of mobile recharge but later on they provide a wide array of services which covers mostly all the things that involves the financial transactions. Thus the main aim of the mobile wallets is to carry out the cashless transactions but along with that it has different applications which can include the membership cards, loyalty cards and others. It can also function to store an individual's personal information such as credentials of credit cards, security PIN of various cards, various booking details and other things which are password protected. In one of the paper by Yang (2005) it was stated that mobile wallets have become fundamental concept in Asia. But then according to Jupiter Research in 2008, the problem identified was that the customers are afraid of an "unknown medium" which states that they are not comfortable with the concept of mobile payment and thus not even agree to try using the mobile payment services. Also the greatest barrier in the way of mobile wallets is customer apathy (Viehland & Leong, 2007). With the various benefits stated above of the mobile wallets, there are also worries about the privacy and identity robberies.

As per Rowland and Shrauger (2013), the largest market for mobile users is India. Out of 400 million subscribers of mobile phones, only four to five percent of Indians uses cellphones for their financial needs and 10 percent are actively uses mobile payment services. The Indian urban middle class uses internet services of cellphones, but the same hesitate to use mobile payment services. The person who is considered to be the most tech savvy customer is also not seen to adopt money transfer services using mobile phones easily (Unnikrishnan and Jagannathan, 2017). Despite of having high benefits for mobile payments like more convenience, loyalty and cash benefits (Rowland and Shrauger, 2013) it has tough competition with other instruments like cash and bank based payments (Nejad et.al, 2016). Social platform is also provided in mobile wallets for their users to interact with their friends and banks with greater ease. They have been designed in such a way as to enhance their consumers' experience (Dahlberg et al., 2013). Hence consumers' perception is considered very important to understand the requirement of mobile wallets and its importance.

Various papers have discussed mobile wallets with the help of TAM and UTAUT models, their advantages and the barriers in the usage of the mobile wallets. Very few papers have discussed mobile wallet with any other model except the ones mentioned above. We try to look at the mobile wallets using the Theory of Interpersonal Behavior to get a different perspective as this model involves constructs like emotions and attitude and to see the role of gamification as moderating variable.

Theory of Interpersonal Behavior (TIB)

Social psychologist Triandis (1977) developed an integrated model of interpersonal behavior taking into consideration the roles of emotions and social factors for identifying the behavioral intention of using the information systems. Triandis (1977) found that any behavior is subject to complex and complicated concept as in any interpersonal contact an individual recognizes the right to be determined by a person's behavior in that specific situation. This kind of behavior is evident by the degree to which a person dislikes or likes the behavior, also by how others pressurize them to do certain things and the related significances perceived with the help of the individualized behavior with the degree to which an individual values these significances. The theory claims that it can overcome the limitations of "theory of planned behavior" (TPB) (Sung et.al, 2019, Russell et.al, 2017). The main limitation of TPB is that it does not take into account the emotions when a particular behavior is been performed (Moody & Siponen, 2013). TPB generally states that there is consciously an individual control on the social behavior, whereas TIB asserts that with an increase in the degree of habit there is decrease in the degree of conscious attention required to perform certain kind of behavior (Bamberg & Schmidt, 2003). This is the reason that Triandis in this theory claim that in addition to facilitating conditions (which comprises of perceived behavioral control and intention); habits should also be considered in predicting the behavior (Sung et.al, 2019). Also it is stated that when compared on social ground influence, TIB is believed to be more influential than TPB proposing various sources that include personal norms (showing the responsibility of doing right things) which are beyond some social norms (Amin et.al, 2016). Now the question is why this model is not used much, in answer to that is various scholars have stated that this model is very difficult and considered not to be comprehensive (Bergeron et.al, 1995; G. Godin, 2008; Robinson, 2010). Literature suggests that the researchers have not preferred using TIB as they prefer models which are less complicated (i.e. parsimonious models) (G. Godin, 2008). But taking into consideration that TIB, it accounts for the effect of facilitating conditions and habits, and this theory might show usefulness in the context of studying the digital world like mobile wallets and gamification. Table 2 shows the various studies that have been done using this theory in Information system (IS) either alone or in combination with some other theory which depicts that this theory has been useful in explaining the behavior (Abdulrahman et.al, 2018).

Table 2: Studies done on Interpersonal Behavior Theory

Author & Year	Type of context	Constructs taken for the study
Bergeron et al. (1995)	Executive IS	Social factors, facilitating conditions, affect, habits consequences and behavior
Pare and Elam (1995)	Use of computer in personal way	Enjoyment, beliefs, social norms, habits, anxiety, facilitating conditions for department and for the organization, perceived usefulness and use of personal computers.
Cheung (2000)	Use of internet for personal reason	Facilitating conditions, current usage, consequences of long and short term, affect, complexity and social factors.
Gagnon et al. (2003)	Physicians using telemedicine adoption	Facilitating conditions, affect, social norms perceived, roles, habits, intention, normative belief, self-identity, consequences and behavior.

George (2003)	Executive IS	Affect, social norms, facilitating conditions, habits, consequences and behavior.
Woon and Pee (2004)	Use of internet for personal reason	Job satisfaction, affect, consequences perceived, facilitating conditions, social factors, habits, intention, and abuse behavior by the internet.
Ikart and Ditsa (2004)	Executive IS	Perceived ease of use, facilitating conditions, usage attitude, perceived usefulness, habits and actual usage
Gagnon, Sanchez, and Pons (2006)	Assessing Health Technology	Normative beliefs, social factors, facilitating conditions, attitude, habits, intention and behavior.
Ikart (2007)	Executive IS	Habits, attitude, perceived ease of use, facilitating conditions, perceived usefulness, social norms and actual usage.
Pee et al. 2008	Use of internet for personal reason	Facilitating conditions, consequences, affect, habits, social factors intention and behavior.
Robinson (2010)	Making use of software privacy	Social factors, intention, consequences, habit, facilitating conditions, affect and behavior.
Moody and Siponen (2013)	Use of internet for personal reason	Self-concept, Facilitating conditions, benefits, roles, social factors, penalties, habits, concepts, attitude, intention and behavior.
Betts et al. (2014)	Use of internet for personal reason	Cyber-loafing, informational justice, habits, procedural justice, interpersonal and distributive justice, habits and behavior.

Nadhrah and Michell (2014)	Systems of Healthcare Information	Ease of use, personal value, consequences, behavioral control, social factors, affect, professional norm, affect, behavioral control, impact value, behavior.
Amin (2016)	Use of internet for personal reason	Facilitating conditions, internet behavior, social factors, affect and satisfaction regarding religion.

Source: Abdulrahman et.al, 2018

The interpersonal behavioral theory explains the construct social influence by using constructs like norms, roles and self-concept. TRA and TPB take into consideration only the influence of social norms under the social factors and neglecting the terms like role and self-concept. Unlike the above two stated theories, TIB asserts that social factors has sources like roles, self-concept and norms. Thus Triandis definition of social factors is "an individual's assessment of the reference group's culture and the specific interpersonal agreements the individual has made with others in specific social situation". For this study we take social norms and self-concept into consideration and not roles as it is not suitable for the present study. The initial important source of social factor is the existence of social norms that are the unwritten rules mentioned within particular reference group (Ajzen, 1985). Social norms developed within a reference group are used to make one's actions succumb towards a particular behavior by applying the pressure and required motivation (Madden et.al, 1992). Hence when one is part of such a social group, they tend to follow the group's behavior in order to remain accepted by the society. In this TIB, it is stated that these social norms should be considered with other social factors and not separately and so it is proposed that joint effects of all social factors would mediate the relationship between each source and behavioral intention towards the mobile wallets, ultimately leading to actual behavior.

P1: Social norms regarding the usage of mobile wallets would be positively related to the social factors influencing the behavioral intention towards the use of mobile wallets.

It is often shown that individuals evaluate their own selves based on the advices and the feedback given by others (Passos and Caetano, 2005; Robinson and Weldon, 1993). So Triandis believed that one's self-concept pertaining to the behavior in a way influences the social factors leading to the intention of using a technology. For example, if an individual feels that he should reduce the pollution in the city, he would experience pressure and motivation from the close ones to get involved in a behavior that would support his self-concept and thus would use electric vehicle or cycles in order to reduce the pollution.

P2: Self-concept regarding the usage of mobile wallets would be positively related to the social factors influencing the behavioral intention towards the use of mobile wallets.

These sources mentioned above (social norms and self-concept) would increase the need to adapt the recognized group norms where an individual is usually probable to adhere to this rules. Thus social factors include social norms and self-concept which would be leading to behavioral intention to use mobile wallets.

P3: Social Factors regarding the use of mobile wallets would be positively related to the behavioral intention towards using the mobile wallets.

TIB proposes that attitudes are made up of individual beliefs in addition to their evaluations (Triandis, 1977). Beliefs are defined as "internally held information that one holds to be true" (Fishbein and Ajzen, 1975; Triandis, 1977) and evaluations are defined as "internal calculation of the individual that determines how relevant the belief is when forming an attitude in a given circumstance (Triandis, 1977). Though individuals may have several different beliefs regarding some object, the level of the belief may vary depending on the specific situation, so only those beliefs would be considered significant which would be calculated as suitable for the given attitude formation towards some particular object. Hence Triandis

(1977) stated that "attitude is formed by an interaction of relevant beliefs and their evaluations". Also many studies have supported the role of attitudes for influencing the behavioral intentions (Fishbein & Ajzen, 1975; Bamberg & Schmidt, 2003; Henle & Blanchard, 2008).

P4: Attitude regarding the use of mobile wallets would be positively related to the behavioral intention towards using the mobile wallets.

Triandis proposed that one could not be in a position to make decisions by depending only on their cognitive knowledge but also by depending on their emotional state. So affect can be considered as an input for taking the decisions. Hence, affect is defined as "as emotional response to a particular situation that is based on instinctive and unconscious processes in mind" (Moody & Siponen, 2013). So we try to conceptualize the construct affect as an emotional state when one makes the intention of using the mobile wallets for various activities to overcome several issues related to technology adoption. Also studies reveal that emotional states influence the behavioral intentions of individuals (Petty & Wegener, 1998; Pee et.al, 2008).

P5: Affect regarding the mobile wallets would be positively related to behavioral intention towards using the mobile wallets.

TIB has given the definition of intention as sensible procedure to perform a certain kind of behavior. It shows the amount of efforts that one would willingly invest for engaging in particular behavior, thus including a probability of connecting the individuals to perform particular kind of activities. The connection among intention & actual behavior is hypothesized in similar fashion for TIB and TPB.

P6: Behavioral Intention regarding the use of mobile wallets would be positively related to the actual behavior of using the mobile wallets.

Facilitating conditions have been defined in TIB as "factors in individual's environment that make a behavior easy to perform". Even if an individual has an intention to use the mobile wallets but lacks the facilities like good internet, network traffics, experience of using the mobile wallets, this would lead to avoidance in the behavior of using the mobile wallets. Facilitating conditions has situational dimensions (e.g. good internet, less network traffic) and internal dimensions (e.g. self-efficacy, skills). So facilitating conditions would be important to study in the moderating role between the behavioral intention of using the mobile wallets and the actual behavior.

P7: Facilitating conditions would positively moderate the relationship between the behavioral intention of using the mobile wallets and the actual behavior.

Habit in TIB denotes to "situation-behavior sequences that are or have become automatic in response to specific cues in the environment". When one has developed the habit to use mobile wallets, it actually requires minimum amount of effort to use the mobile wallets and hence an individual would enjoy using it. Studies have shown long back that intention to engage in behavior and the habits to perform behavior are significant indicators of the actual behaviors (Triandis, 1977; Sheppard, 1988; Aarts et.al, 1998; Malle, 1999; Gagnon et.al, 2003).

P8: Habit of using the mobile wallets would positively moderate the relationship between the intention of using the mobile wallets and the actual behavior.

Gamification

The term 'Gameification' was used for the first time in blog post (Brett Terill, 2008). He defined it as "captivating the game mechanics and then applying them to other web properties in order to increase the engagement". Later in 2010, the term became more widespread by the term as 'Gamification'. Then in 2014, gamification is defined as using the elements of the design characteristics of games in the context of non-games (Deterding et.al, 2011). The main aim of gamification is to inculcate the experiences which are very useful in the gaming and to increase the engagement along with the motivation through these experiences (Hamarietal, 2014). Gamification has two aspects at heart, first is for user's delight and entertainment all gamification uses are designed and second the gamification uses are designed for exterior significances which includes the individual behaviours and institutional activities (Huotari & Hamari, 2017).

This concept of gamification was inspired from the idea that people like to have fun in their lives. This concept can also be viewed in favour of making attempt for converting utilitarian services to something more hedonic (Hamari, 2013). The main focus of applying gamification is inherent to its nature which pursues that, for enhancing the specific important task with the help of the game involvements, without the actual involvement of that important task (Huotari & Hamari, 2017; Liu et.al, 2017). User's enjoyment, satisfaction and efficiency can improve to greater extend if gamification delivers its promises. For generating a wide variety of innovations or enriched uses related to business, the concept of gamification

can be applied which can help in envisioning and describing the complicated functions by engaging the consumers as participants by means of curiosity, working in teams, competition and so on (Boinodiris, 2012). Gamification consists of reward badges, action points and leader board in order to gain cash prizes, discounts which in terms increases the service engagement for giving positive feedbacks and strengthening loyalty which in turn tends to rise the financial contribution (Burke, 2012; Teng and Chen, 2014; Rodrigues et al., 2013).

At present gamification is been widely used as a tool for businesses to stay updated with the digital consumers who are using the internet for approximately more than two hours daily or having around 70-80 times check on smartphone (Zhu & Chen, 2015). Some brands use gamification in their stores, for instance, Starbucks gives the rewards to the customers to generate the brand loyalty among the customers. Gamification is widely used in the context of learning, either from the perspective of education (Dichev & Dicheva, 2017) or work (Lombriser et.al, 2016). Also the term gamification has been used in some informal context where is no presence of some formal work or education (Sailer et.al, 2017a). It is noted that for learning, gamification is not referred to something that is concerned with some sort of serious game rather it is process of designing the components of game for changing the present learning procedures (Landers et.al, 2018). Literature reveals that various authors have tried to explore the relation among learning and gamification, developing conceptual models using mainly "gamified learning theory" (Landers 2014). The theory is majorly concerned with the four elements which involve game characteristics, instructional content, behaviors and attitudes and finally learning outcomes. Hence it is claimed from this theory that gamification affects the behaviors and attitudes which are concerned with the learning process, and so for this study gamification is proposed to play a moderating role between the behavioral intention of using the mobile wallets and the actual behavior for the use of mobile wallets. Also based on research of Huotari & Hamari (2016), the two main outcomes of gamification for some product use are support for the product usage and gratifying experience.

Research has been conducted using gamification technique in mobile banking services (Baptista & Oliveira, 2016). It stated that mostly the mobile banking services at that point of time were not made to be full of fun or amusement, it just had the utilitarian value of transactions and all financial related services (Kim and Han, 2011). They used this gamification technique in the mobile banking services and found that it has substantial contribution as it produces the enjoyment, evoking positive emotions, strengthening social relations, feeling of accomplishment and satisfaction. It was also found that after using these gaming techniques in mobile banking services, the consumers found these services to be filled with excitement, interest, enjoyable and in a way increasing engagement and thus satisfaction (Financialbrand.com, 2014). The results showed that the performance improved and hence helped in generating higher profits for the banks (Graham, 2014; Baptista & Oliveira, 2016). Hence it is considered that the gamification is an effort to develop more hedonic services from the utilitarian services (Hamari, 2013).

P9: Gamification would positively moderate the relation between behavioral intention and actual behavior towards using mobile wallets.
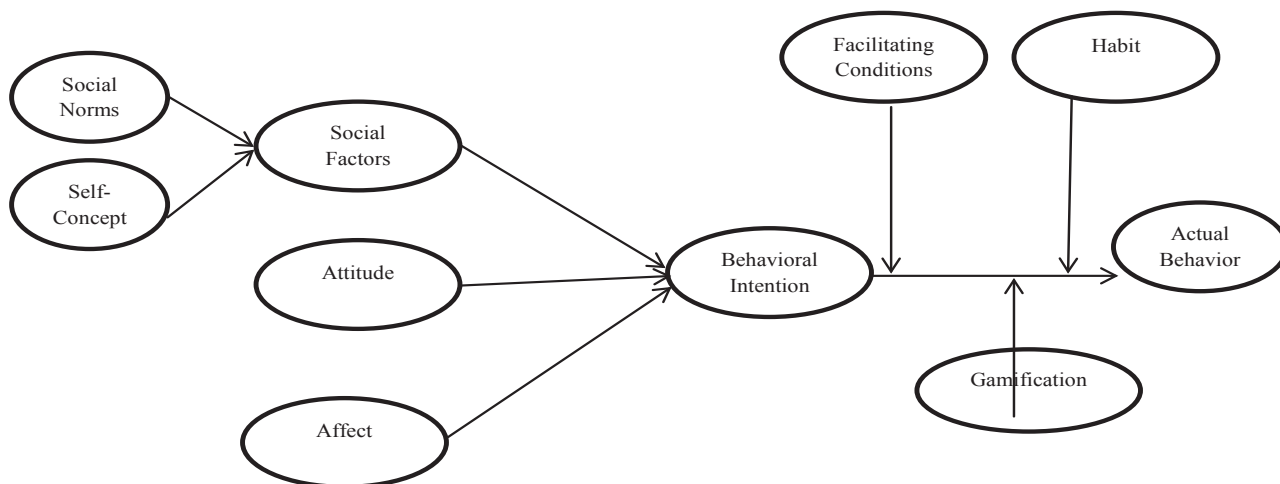

Figure 1: Conceptual Model

Discussion

Mobile wallet is believed to be transforming the culture of the consumers (Steinbach, 2016). Forbes article in December 2016 stated that "A Cashless Future is the Real Goal of India's Demonetization Move". Before this India was a cash centric country which accounts around mostly 95% of all the cash transactions. But today, m-wallet is considered not only to be one of the most simple and easy method for transaction but can also provide various discounts and cash backs. The major benefit of using mobile wallet is that no password is required like in debit or credit cards. The main objective for this study is based on what consumer thinks and feels about the mobile wallet and to find the factors that are influencing the behavior towards the mobile wallets. Compelling with this objective, our major indicator of consumer acceptance is the actual behavior towards the use of mobile wallet. The above study shows the conceptual model which uses the construct of interpersonal behavior theory in addition to gamification factor as moderating variable. A significant contribution of this study is that it attempts to find the influence of three factors (social factors, attitude and affect) which are considered to be important in consumer behavior study. As almost no research is based on this theory for mobile wallets, it becomes second important contribution of the study. This framework points at the constructs like social factor, attitude & affect which are important antecedents for consumer behavior which has been proved several times in the literature. Attitude and Affect are new to the field of mobile wallets and hence through this study we aim at incorporating them in the model to give a new direction to find the actual behavior towards the use of the mobile wallets through understanding the behavioral intention of the users. Also one other important factor is taken in this model as moderating factor which is gamification. The concept of gamification is established just few years back which has contributed significantly in the field of the consumer behavior. The role of gamification in consumer behavior field has been used extensively and also in mobile payment services to some extent but very few studies has contributed towards the gamification factor and the mobile wallets. The studies on gamification showed that it tends to increase the engagement of the users in the services and in a way increases the usage of the service, here it is mobile wallet. With these framework, we provide the below implications for theory and practice.

Implications for Theory and Practice

This study contains the implications for both researchers as well as the industrialists. This paper presents a model with constructs such as attitude, affect and social factors, considered as important antecedents for consumer behavior which needs to be tested empirically. Previous studies have neglected such constructs in the study of mobile wallet; hence through this model one can get an opportunity to find the impact of these factors on the actual behavior for using the mobile wallets. This study provides important theoretical contributions by integrating the constructs of theory of interpersonal behavior and gamification factor as moderating factor. Also from the theoretical implication perspective, this study explores the influence of the affect, in a way the impact of emotion on the behavior for using the mobile wallet.

When talking about practical implications, this study can be insightful only when empirically this model is tested. It would help to know the companies what they can do to get the users engaged into mobile wallets. Also one important factor that we have taken here in the moderating role is the gamification factor, so companies can also understand that gamification helps in engaging its users and hence can develop some gaming techniques in order to either increase the usage or to make new users start using the mobile wallets. As mobile wallets have several challenges like privacy, security and trust, it becomes essential for the companies to develop some hard core techniques which can attract the consumers towards using the mobile wallets. Also the companies can learn the behavior of the consumers making it easy for them to know what and how would the consumer use the mobile wallets. Hence through this study, companies would learn about the behavior of the users which can prove to be the most important factor for consideration.

Limitations and Future Directions

The first major limitation of the study is that it is conceptual and hence needs empirical evidence. Also constructs like social factors, attitude and affect are difficult to measure. There are various aspects of these constructs but we would be considering only as the mentioned in operational definition. As literature has already talked about the perceived risk, trust, privacy and security issues and various others factors which would restrict one from using the mobile wallets; we have not taken this into the consideration. Till now TAM and UTAUT has been used extensively for the study of mobile wallets, so this

model would face some adoption issues. Also above it has been stated that this model is quite complex and difficult to understand, hence this can come out to be a major limitation. So further research can be focused on simplifying this model as to provide companies with better understanding about what influences the consumer usage towards the mobile wallets. This study should be backed with further research showing the empirical evidence. Also we have not taken the role of age and gender in moderating factor which can be taken further. We have also limited the concept of gamification to just using gaming techniques into non games context, but in future studies can be conducted taking various aspects of this gamification like playfulness, self-esteem and so on and also gamification can be used as antecedent instead of moderating factor.

Conclusion

Due to various advancements in the field of digital services, the growth of mobile wallets is tremendous. Thus it has been stated that mobile wallets are becoming the conventional mode for the online payment services (Rathore, 2016). With this paper we try to develop a model which helps in linking the important aspects of consumer behavior which are attitude and emotions (affect) with the usage of mobile wallets. Many studies have been conducted on the usage of mobile wallets but not many studies have indicated these aspects of consumer behavior and hence also ignored this theory of interpersonal behavior of the information systems. Hence this paper provides a framework that would work in the direction of consumer behavior for the technology acceptance as an initial contribution.

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Accountability on Guest Perceptions of Hotel Employee for Sustainable Tourism

Shree Prasad Bhattarai
hreeina.895@gmail.com
Ph.D. Candidates from Lincoln University College, Malaysia
Sateesh Kumar Ojha
Regional Director of Research, Lincoln University College, Malaysia
Tel: +977-9851085019, Email: drsateesh@lincoln.edu.my

Abstract

Tourism is found one of the leading industries in the world either in a developed country or in developing countries to under developing countries like Nepal. However, we can find various technologies, and different mediums of service delivery systems but only humans are the major sources to handle all the operational factors or grievances that come around guest dealing. Nevertheless, a person who works in hotels should be accountable for their services. As we all know that tourism means to travel and travelers need a home away from home thus to maintain all these environments Hotel industries are growing day by day. The great challenge nowadays is to find accountable human resources who can perform their jobs as per guest perceptions.

Keywords

Guest complaint and service recovery, guest perceptions, and sustainability of tourism

Background of the study

This research is aimed to evaluate how the accountability of staff is necessary to fulfill the guest perceptions however, this could be studied through guests' complaints and service recovery. Examination of the key theory and analysis of a survey at guest complaints and service recovery of Nepalese star hotel of province 5. Hospitality business in the current world is in the third position in the world economy however, there is a great challenge to provide very personalized service. The commercialization of the product or goods is tangible and is easy to identify the problems or faults, but in terms of service, which is largely intangible, it is all about the experience so once the guest experience is last; it is difficult to change resulting challenges. Crick et al, (2011). Among the hospitality business, the hotel business is very crucial because it is all about staying "home away from home" however guest wants it to feel like home therefore their satisfaction is very important Heyer (2008). Likewise, if guests are satisfied only then hotel business can be sustainable.

The economic situation and increasing demand for luxury and quality service are adding more challenges to sustain the hospitality business. Loannides and Debbage (1998) argue that there is virtually nothing the hotel industry can do to accelerate a financial recovery but if hotels can provide quality service at a fair price then they may be able to shift to sales maximization which helps to reduce the pain of the economic situation. Babakus et. al. (2009) argues that, with the increasing use of experience and other performing art concepts in the service industry the reaction of employees, working in these environments has come under the spotlight. Therefore, Berry et al. (1988) agree with the major challenge to sustain the hospitality industry is either to provide quality service or lower the price on existing facilities and services.

Statement of the problems

Hotel industry rival for customer satisfaction and satisfaction depends upon the experience judged under their perceptions on each service or facility of consumers thus, to maintain the satisfaction level perceived values should be higher than the expected value. These all circumstances are being surveyed by analyzing services provided to people and by people. However, it is the action between human to human i.e. service receiver and service provider or guest and host. Therefore, service providers should be accountable for guest perceptions if any staffs fail to provide authentic service as per perception or is unable to satisfy their needs people will not entertain to visit again, and finally hotel organization may lose their faith in services. for the reasons, accountability on the guest perception of hotel employees for sustainable tourism is realized for study.

Objectives of the study

Only the infrastructural development in hospitality industries is being noticed as saying tourism development is in progress but the practical development in tourism will be if that hospitality industry sustains about the guest expectation and satisfaction which can be said as a guest complaint and proper adjustment of those complain i.e. service recovery. Thus accountability on the guest perception of hotel employees for sustainable tourism is realized for study. following are the main objectives of this research.
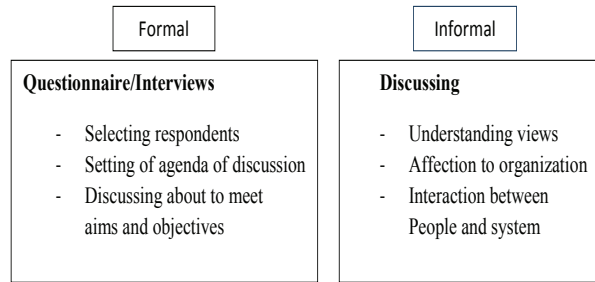
• To analyze the expectation and perception of hotel guests

• To explore the underlying factors that influence guest satisfaction.

Research Methodology

The purpose of this chapter is to explain the most appropriate research methods used for this study, however, there are two methods (i.e. Primary and Secondary research methods) of study for describing guest complaints and service recovery of a hotel. Birks and Amphora (2006) To achieve a good understanding of research, the researcher uses both primary and secondary data analysis to examine the major guest complaint and service recoveries from the manager's perspective evaluation and In-House guests of the Hotel.

Case study

The area of research of guest complaints and their recovery strategies was chosen as the researcher is a hospitality student. In addition, the motto of the hospitality industry is to provide quality service to meet the satisfaction level of the guest/customer. However, according to Leedy & Ormrod (2005), cited in Connaway & Powell, (2010) a case study is an intensive analysis of an individual unit i.e. of a person, group, or event, and is relevant to the researcher's interest and involvement working in with the same organization and so helped decides on the topic. Furthermore, guest complaints and service recovery are two parts of the same coin because whenever a guest complaint arises there should be some improvement to reduce the complaint. Likewise, the higher the number of guest complaints the lower the satisfaction, which symbolizes a bad impression to the guest, reduces the goodwill and reputation of the hotel.

Formal	Informal
Questionnaire/Interviews - Selecting respondents - Setting of agenda of discussion - Discussing about to meet aims and objectives	**Discussing** - Understanding views - Affection to organization - Interaction between People and system

Researcher's category of research Source: (Smith and Bolton 1998)

Informal: This topic has been selected as the researcher is associated with the organization which makes it easy to find the information and analyze it from different perspectives. It is like brainstorming of the subject to understand the views of subordinates, whether they are enthusiastic about work or just the purpose of earning. This helps to find the psychology of employees how they become involved in reducing guest complaints.

Formal: An informal examination, helps with analyzing the suitability and how effectively applies to the research. Likewise selecting respondents for this research who will act on findings and set the agenda of a topic. A questionnaire is then prepared to investigate the internal and external strategy about the guest complaints and service recovery. This research makes it easy to find the qualitative and quantitative aspects to meet the aims and objectives.

Secondary Research

As per the concern of the study, the fundamental sources of information and data to support an analysis of the topic is secondary research, it is important to overview the pieces of information which are collected by an individual or agency for an investigation and study and which are not involved in the original study or research according to Saunders et al (2009). Secondary data analysis helps to create a map of research but is unable to provide present information, thus it is called qualitative analysis. This method is used because many of the journal articles had useful quotations and opinions of others that seemed relevant to research, Saunders et al (2003) mention journals are essential as literature sources, and in using this method a range of contrasting arguments will be found. There are also some potential problems with secondary research, such as they can be restricted, or may not match the current research objectives. In addition, secondary data may not be currently relevant and so primary aims to obtain more updated data to support the

aims and objective may be essential.

Literature Review

Literature related to the subject of the guest complaints and service recovery of Nepalese star hotels A case study of a hotel is to find the root cause of guest complaints and find the diplomatic solution to eradicate those complaints. This research is mainly focused on what is guests complaint and how to manage the service or makea strategy for recovery. Service problems are slow service, staff inefficient, unfriendly, unhelpful, variety of food limited, knowledge of food and beverages, billing incorrect, etc. thus to minimize guest complaint managers should use recovery strategy like apologized to the guest, explanation of the problem, immediate action, provide compensation, redirect the compliant. Thus this issue has been a concern to research according to Chang et al. (2002) Chu and Choi (2000) and Miller et al. (2000) considered consumer satisfaction in a hotel has been a mismatch between expectation and perception of quality. Truly Professional relationship between the guest and hospitality business should be exceptionally complaining which basically are acceptable like technological errors or act by god nevertheless will meet guest expectation negative. Besides managers in the game of being very close and hiding the real problems of the industry also tempt for poor quality service thus all of these queries lead to research.

Complaint issues that a guest does not like or it are not acceptable Zeithaml, V.A. and Bitner, MJ. (2003) however, it can also be said as dis-satisfaction of service as per their value Looy B.V, Gemmel P and Dierdonck R.V (2003) thus higher the satisfaction lesser will be the complaint and vice versa similarly hotel goodwill is retained by the intangible product like service thus service which should be satisfactory.

The main objectives of the research are to analyze the hotel guest expectation and perception of hotel service and variable evaluating the service quality. In a hotel, most of the complaint comes from all major four departments like the front office, Housekeeping, Food production, or Kitchen and Food and Beverage department. Thus to control the guest complaint and to maintain its goodwill service recovery is needed which means providing quality service so this research is a concern to contrast guest complaint and service recovery. '' Service recovery involves those actions designed to resolve problems, alter negative attitudes of dissatisfied customers and to

ultimately retain these customers'' Miller et al. (2000)

According to Susskind (2005), Communication between guests and service providers is an essential part of service. Throughout a service experience, information is exchanged about services offered and received. Depending on the timing and severity of a given service failure guests will evaluate several factors when selecting the medium for lodging a complaint. Service failure is predictable in the service or hotel industry, previous research shows that service failure is encountered during serving or process and in the outcome. Consequently, Hoffman and Kelley (2000) service staff must have enough knowledge of understanding guest's complaint behavior, complaint intentions and also recognize the factors that may affect guest's tendency to complain.

Guest complain versus service recovery

This argument is further strengthened by research showing that guest who complains are more likely to repurchase, even when their complaint is not handled satisfactorily then guest never and ever trust that hotel which reduces the reputation of the organization because they may explain their experience to their friend and relative Kosar and Raseta (2003). It is through the provision of good customer-staff communication that the hotel can determine the views of guests and recover from a failing situation successfully.

The basic fulfillment of this research will be carried out by the SERVQUAL or GAP model for service quality. Also, make more clarification on various issues related to service quality or perceived value of guests will be carried out by Meta-analytic framework for complaint behavior (Organizational response- justice perception - post complaint satisfaction - customer behavioral intentions)

Customer Experience

Providing a positive experience to the guest is the main motto of the hotel, but it is unsure that constant factors like standard service, price, and facilities would provide the same level of satisfaction to the different guests. Therefore the experience of service quality depends on the nature of the guests.

Staff Knowledge and Skill

Another factor that affects service quality and guest satisfaction is staff knowledge and skills. In hospitality, it is very important not only to put your knowledge into practice but also to have common sense and personal skills to deal with a guest.

Co-ordination and Motivation

Service performance is one of the major factors to add satisfaction value to the guest experience. The performance of staff depends on the management policy, working environment and co-ordination between staffs. If it is not proper, communication or coordination between staff-staff, staff-managers, Managers-Managers then there is high chance to be misunderstanding which directly affects the performance of staff and create problems or complain.

Guest complaint behavior

Everybody who performs a service always wants to rectify the weakness and strengthen the strong aspects, in addition to this managers do not want to deal with the overall experience of the customers in the restaurant however waiter/ess are responsible, as previously described that complaint depends upon the nature of guest. Sometimes guest makes the benefit of cost analysis and take action about complaints for example if the cost of the complaint and time spent for it provides more benefits for them, then they would take action if not remain silent and would not take action Heung, and Lam (2003).

Service Recovery Elements

Service recovery is not just fixing the problems but it is also just making sure it won't happen again. A process for effective service recovery is a key component of a guest service culture and winning guest service strategy. Customer service training must be done regularly to make it effective and drive guest service culture. Providing quality service to guests means, satisfying their physical and emotional needs and exploring ways how to compensate the guest for their trouble.

The SERVQUAL or GAP model for service quality

Many contemporary theories consider service quality from the viewpoints of both provider and receiver or guest. Similarly, Zeithaml and Bitner's (2003) SERVIQUAL model of service quality claims that the consumer evaluates the quality of a service experience as the outcome of the difference (gap) between expected and perceived service. Consequently, it was also not safe from criticism because it is too burdensome for general use but also used to measure service quality.

The basic characteristic of the Ramsaran-Fowdar (2007) gap model is to identify a quality of both between the guest and service provider which is directly related to guests' perceptions and expectations. The SERVQUAL

model of service qualities identifies five gaps that cause service failure and is given below:

Table: 2.1

Title: GAP Model of service quality
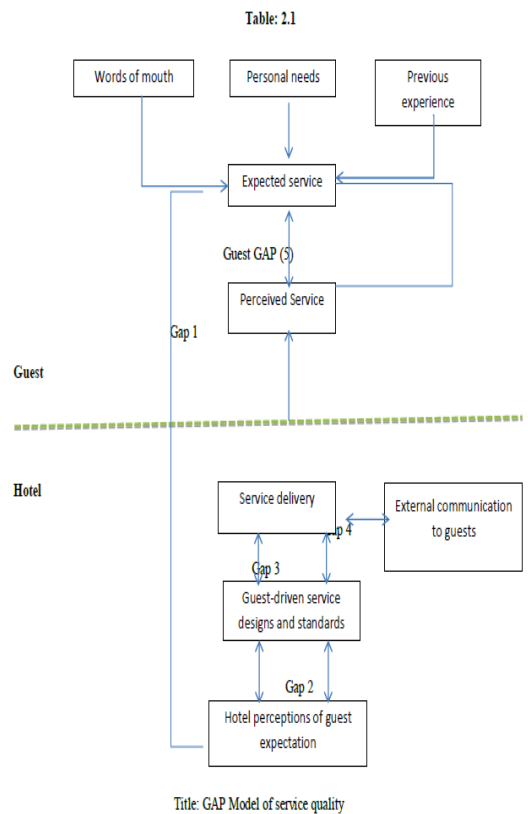
Source: - Parasuraman, A., Zeithaml, VA., Berry L.L (1985)

Gap 1: This is a hotel or management perception of guests and expected service: A Manager's perception of guest expectation may be different from guest's actual needs and desires leading to the suggestion that management perceives the quality expectations inaccurately Parasuraman, Zeithaml, and Berry (1990).

Gap 2. This is the hotel's perception of guest expectation and quality specification gap highlighting the difference between management's perception of customer expectations and the translation of that perception into service quality specifications and design Lesley and Corner, (2003).

Gap 3. This is the service delivery gap: it is referred to as the service performance gap and denotes that quality specifications are not met by the performance in the service production and delivery process.

Gap 4. This is a communication gap: this gap indicates the promises given by market communication activities and services delivered to guests.

Gap 5. This gap is the perceived service quality gap: however, this gap results according to Zeithaml and Bitner, (2003) between expected service and perceived service. Therefore, Zeithaml explains gap 5 as an equation i.e. where service quality (Q) can be measured by subtracting the guest perception score (P) from the guest's expectation score (E). This can be denoted as an equation: Q= P-E (Zeithaml et al. 1990)

A theoretical framework for guest complaint and service recovery

A theoretical framework is a collection of interrelated concepts, like a theory. In other words, a theoretical framework guides research, determining what things the researcher uses to measure and what statistical relationship is looking for. The researcher uses a SERVQUAL or GAP model Parasuraman and Berry,(1985) and Meta-Analytical Framework (Gelbrich and Holger, 2011 p 95) to strengthen understanding of the topic. Similarly, the researcher categorizes the topic on Major Guest complaint issues based on manager and Guest perception to find the Gap. On the other, hand Major Service recovery strategies based on Meta-Analytical Framework or justice theory helps managers to judge each issue for recovery if there is any complaint. Therefore, the researcher co-links those two models (i.e. SERVQUAL or GAP model and Meta-Analytical Framework) for identifying gaps. If there is P>E then there is a positive Gap which means there is no complaint but if it is found to be P<E there is a negative Gap which means guests are dissatisfied or there is a complaint on service Zeithaml and Bitner, (2003). Based on these concepts researcher has developed a theoretical framework and also designed a questionnaire for the survey.

Table:- 2.2

Source: - Author
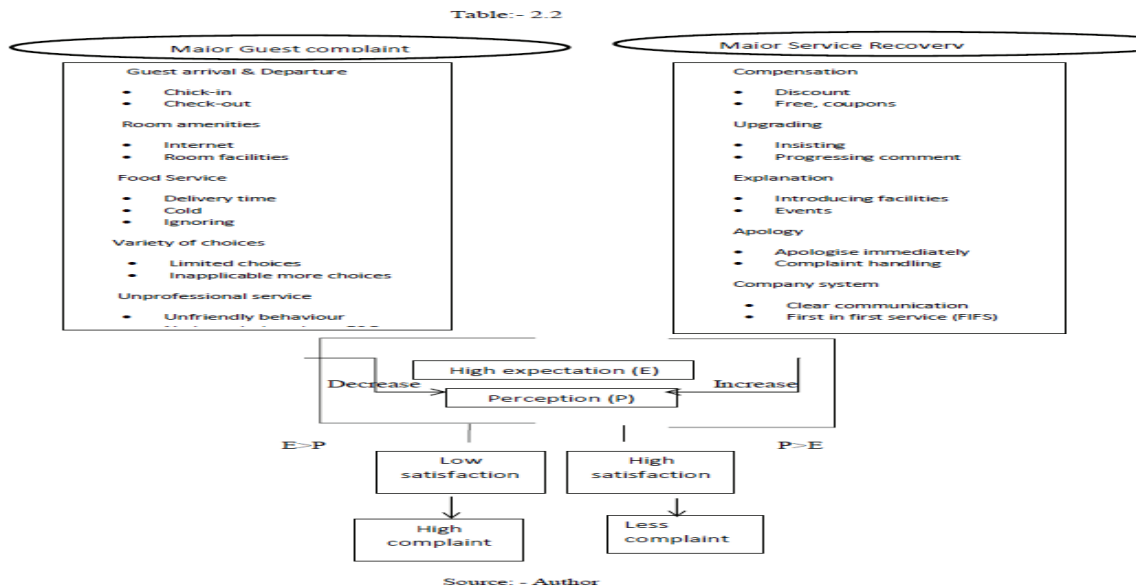
The above framework explains the relationship between guest complaint-service recovery-service quality-satisfaction and loyalty. (Karande, et al. 2007) also believes, quality customer service is the major principle of the hospitality industry. However, to maintain the service quality, hotels must be capable of providing high satisfaction. Nevertheless, all departments are equally responsible for maintaining professional and personalized or quality service. Some of the major reasons for service failure or guest complaints are taking a long time to check-in and check-out, differences in dealing with facilities or plans, no internet, and unsuitable room and amenities. Likewise, problems are caused by serving cold food, delays in service, ignorance of guest desires, lack of variety in choices of food and beverages, and lack of knowledge of products and services. (Singh et al., 2007) argues that sometimes the error caused by the system and error on technology also create complaints, for example, while reservation and registration, payment, discounts, and fixing rates in the computer may show high problems.

However, there are two aspects to the study: the first one being the prospective guests and the second one being of management strategy. This research is focused on relating the management strategy of service recovery procedure to the guest complaint issues through their experience of their stay. The different models and theories used in this research are used to identify overall complaints of the hotel either from the operational department which directly plays a role in complaints (i.e. kitchen, Bar and restaurant, housekeeping, and front office) and administration department which indirectly plays a

role in the complaints (i.e. sales, marketing, and human resources). Thus, it is easy to find what kind of guest complaints are arises and how management or managers are taking responsibility to solve those complaints, also measures the extent to which hotels are capable of solving complaints.

Conclusion

Hospitality is solely a customer-centric industry and all depends on satisfaction. As discussed in an earlier chapter reminds that the experience contributes to creating value and gaining a service recovery in hotels the researcher includes the following conclusion from the research. Lastly, the following points will be the major discussion to conclude the research.

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Nepal Customs: Facilitating Trade through ICT Adoption

Suman Dahal
Research Scholar,
Lincoln University College

Abstract

Use of ICTs for Trade Facilitation is becoming an essential tool for contemporary world. As being a landlocked least-developed South-Asian country, Nepal has been suffering from huge trade deficit incurring high trade-transaction costs. This paper studies the progress on adoption of ICT in Nepalese trade process. To facilitate the trade by reducing the cost and time, Nepal customs has been implementing Information and Communication Technology (ICT) since 1998. In the beginning, it has started ASYCUDA system in Customs and consecutively, ASYCUDA World and now implementing National Single Window system. All the reforms are taking place in the plan way with setting periodic Customs Reform and Modernization Plan (CRMSAP). At present, Nepal Customs is being an efficient administration by the use of ICT. Almost 100 percent trade transaction happens through ASYCUDA system. From last year 2021, Nepal is initiating Nepal National Single Window system that makes a single ICT portal for all the stakeholders that orients the process towards paperless, faceless and cashless customs clearance system. This paper makes a contribution in trade arena to facilitate the trade in developing countries by the implementing new information technologies.

Introduction

Customs plays significant role to collect and protect revenue, facilitates trade and safeguards society in normal situation. The role of Customs is regarded as crucial at the time of pandemic and natural disaster.

Objective

The objective of this article is to evaluate performance of Nepalese custom through the adoption of ICT

Methods and Materials

Method adopted is to analyse the performance of custom performance based on secondary data published by Nepalese Government.

Result and discussion

Nepal is landlocked south-Asian country surrounded by India and China. It has open borders with India. Nepal's trade regime is liberalized to a great extent. It is now one of Presently, trade accounts for 54 percent of GDP. Nepal is a least developed country with per capita income US$ 830 per annum. Nepal has around USD 30000 Million GDP annually and USD 12000 Millions trade flows annually. It means, around 54% of trade portion is in GDP. Nepalese economy is heavily dependent in trade. USD 3000 Millions is government annual revenue in 2019.

to maintain smooth flow of essential commodities. Nepal Customs also has been actively performing its role to ensure smooth flow of export and import of goods after the COVID-19 outbreak.

Trade competitiveness has been weak primarily because of high transaction costs. According to a recent World Bank study on Nepal's trade and competitiveness, Nepal's foreign trade transaction costs as a landlocked country are relatively high and have been deterrent to domestic economic growth. Nepal has been suffering trade deficit for years with heavy increase in import. Major importing items are petroleum products, vehicles, iron billets, readymade garments, rice etc. whereas major exporting items are refined soyabean oil, woolen carpet, synthetic yarn, cardamom, felt, pashmina etc.

Nepal Customs

Customs plays significant role to collect and protect revenue, facilitates trade and safeguards society in normal situation. The role of Customs is regarded as crucial at the time of pandemic and natural disaster to maintain smooth flow of essential commodities. Nepal Customs also has been actively performing its role to ensure smooth flow of export and import of goods after the COVID-19 outbreak.

Nepal Customs has 40 establishments across the country, which constitute one head quarter at Kathmandu, one

Post Clearance Audit Office, one International Airport Customs and 37 border Customs. There are 26 border crossing points towards India and 6 points toward China. Nepal Customs contributes around 42% of the total tax revenue. It handled 986 thousands customs declaration form during FY 2019/20. Nepal Customs adopted several WCO standards and WTO TFA measures to align it with the international standards. UN ASYCUDA World is the key Customs Automation system, which covers almost all the main Customs offices.

Nepal Customs has been ranked 60th out of 190 economies in The Trading Across the Border of Doing Business Report, 2020. Nepal Customs was placed at 60th position scoring 2.29 out of 5 in the Logistic Performance Index, 2019.

Trade facilitation is the simplification and harmonization of international trade procedures, including activities such as practices, and formalities involved in collecting, presenting, communicating and processing data required for the movement of goods in international trade (WTO/ UNCTAD, 2001). It reduces the transaction cost as well as complexity of international trade induced by documentation, procedure and regulations and hence expands trade resulting in both economic growth and development.

Trade facilitation is the process of addressing "invisible" barriers to trade. It is a means of improving the efficiency of international trade and economic development. Issues such as quantitative restrictions or high tariffs are visible trade barriers. While these have to be dismantled, there exists a series of other barriers, which may be administrative or procedural and are trade restrictive. For example, in a study of documentation requirements for importing or exporting a consignment in India, Nepal and Pakistan, ESCAP pointed out that the number of document types required can vary from 15 in Pakistan to 29 in India and 83 in Nepal. Cumbersome documentation requirements do not facilitate rapid and low cost business transactions. Indeed, a recent study carried out by the OECD finds that transaction costs contribute between 2 and 15 percent of trade transaction values, and that trade facilitation measures could result in savings between 2 and 3 percent of the total value of trade. In some instances, 100 documents and 20 different organizations are involved in conducting international transactions. Savings from more efficient data processing could be as high as US$ 100 billion.

Customs operation is most important indicator to secure and safe trade flows which is putting pressure to the government to make efficient customs. Customs procedures are one of the main components of trade facilitation. Various customs-related policies and institutional reforms have been carried out for trade-facilitation. On April 23, 2004, Nepal became the 147th member of the WTO and its first Least Developed Country (LDC) member to enter through the regular accession process.

Risk-based selectivity module (green, yellow and red channel) has been implemented. Moreover, Trade Facilitation Committee as well as Client Service Centre has been formed at DOC and Customs Offices. Following Nepal's ratification of the TFA in January 2017, Nepal acceded to the RKC in February 2017, and the parliament has ratified the RKC. This shows Nepal's commitment in implementing modern and effective Customs procedures adapted to the international trade environment and its efforts towards trade facilitation.

Nepal has been practicing various customs-related TF initiatives such as Periodic Customs Reform and Modernization Strategy and Action Plan (CRMSAP), use of ICT (ASYCUDA WORLD), Customs Risk Management, Construction of Integrated Customs Points (ICP) and Inland Container Depots (ICD), National Single window System, Advance Ruling and many others. Following Nepal's ratification of the WTO Trade Facilitation Agreement (TFA) in January 2017, Nepal acceded to the Revised Kyoto Convention (RKC) in February 2017, and the Nepalese parliament has ratified the RKC. These trade facilitation efforts show Nepal's commitment to implementation of modern and effective customs reform programs tailored for the international trade environment.

The Government through Department of Customs (DOC) has been introducing Customs Reform and Modernization Strategies and Action Plan (CRMSAP) since 2003. Implementation of the 5th CRMSAP started in 2017 and completed in 2021 and from 2021, 6th CRMSAP has started to implement. The 6th CRMSAP envisions essential reform strategies, including, expedited legitimate trade facilitation, enhanced customs automation & data management, streamlined coordinated border management, organizational restructuring to support risk-based clearance, among others. E-Customs master plan has been implemented.

Adoption of Information and Communication Technology (ICT)

Web-based ASYCUDA world system has been implemented all most all major customs offices, covering about 98% of total trade. The ASYCUDA++ was operating in the stand-alone servers installed in each Customs office and had a limitation to provide online services. The ASYCUDAWorld was developed and pilot implemented in Mechi Customs from 26 January 2016 which was gradually rolled out to all the main Customs offices. The ASYCUDAWorld has now become instrumental to move Nepal Customs towards the paperless Customs clearance environment.

In general, Customs Agents make the lodgment of goods declaration online to the Nepal Customs Automated System (ASYCUDA world), get it registered in the system, print out the declaration. After signing the printed declaration, the Customs Agent submits the declaration along with true or certified copies of invoice, packing list, mode of payment certificate and other associated documents to Customs. The Customs officer once received the singed declaration, retrieve the declaration from the system and assess the declaration. The System itself routes the declaration in Green Lane (to be cleared without physical examination of goods and related documents), Yellow Lane (to be cleared by examining only related documents) and Red Lane (to be cleared by physical examining entire goods and related documents). The system also designates the customs officer for yellow and red lane declaration. Once the designated officer completes his task, the system transmits the declaration to the Bank operating in the Customs Terminal. Once, the Bank receives the payments from the Customs Agent, it issues the receipt. Along with the receipt, Customs Agent gets the signature of the clearing officer on the Customs declaration and issue the "Exit Note", which allows Customs Agent to take the delivery of cargo from the Customs.

Customs has introduced the Valuation Module in ASYCUDAWorld, which allows the traders to load the value declaration in detail electronically and approval is given by the Customs officials online in the system. This has transformed the need to submit the value declaration before the Customs declaration is lodged and has facilitated Customs to generate an accurate valuation database to fully comply with the WTO Valuation Agreement.

In the earlier environment, each cargo-carrying vehicle entering the Customs area had to be recorded in the register manually. After the introduction of the Gate Entry system in the ASYCUDAWorld, the entry record is entered into the system which is interfaced with the terminal operators. This also have been a key determinant to provide paperless clearance in the future.

In the earlier environment, all declarations were selected for physical verification. Customs introduced the Selectively Module in 2010, which now segregates the Customs declaration in Green Lane (without any checks), Yellow Lane (documentary check), and Red Lane (physical verification). The recent data shows that the share of the red declaration is around 55 percent, which Customs Reform and Modernization Plan aims to reduce to 20 percent by 2026. The selectivity module is configured to assign the inspectors and officers for the physical verification or documentary checking automatically. The ASYCUDAWorld is configured in a way that the selectivity is triggered once the cargo enters and is recorded in the Gate Entry System. This is a big step towards paperless clearance, and as the red lane declaration reduces to 20 percent, the 80 percent cargo can be cleared through yellow and green lane using the risk management systems.

At the earlier stage, the Customs officials were entrusted to collect the duty and taxes and issue the manuscript revenue receipt. A long queue to pay duties and taxes and get the receipt was the normal situation in major Customs offices. Customs introduced a process in 2011 which allowed the Bank operating in the Customs offices to use the ASYCUA terminal and allowed to receive the payment and issue the receipt. This has changed the mindset that duties and taxes collection is not the core area of Customs and it paved the way for e-payment. Department of Customs has commenced the simplified e-payment modality on a pilot basis from 16th December 2021 in the Dryport Customs Office, Sirsiya. In the simplified e-payment module, the Customs agent will have to send four details (declaration number, year, customs code, and Export or Import) to the traders, and the traders can transfer the duty and taxes online to the existing Customs Fund in the Bank located in the Customs offices. The duties and taxes will be deposited in the government treasury the next morning. The ideal e-payment module would require to pay directly to the government treasury in real-time, and this would be the reality once the simplified module will be fully operational in all the Customs offices. However, the

existing simplified e-payment module would adequately serve an environment to move to the paperless Customs clearance.

At the end, the Customs inspector issue the exit note based on the load in the cargo vehicles. With the signed Customs Declaration and the exit note, the cargo vehicle is recorded in the system at the exit gate. The terminal operator system interacts with the ASYCUDAWorld system to check if the goods are cleared by Customs. The possibility of using the Exit Note instead of Declaration opens the avenue for Customs clearance with reduced documentation and paperless Customs clearance.

Nepal Customs has introduced the Nepal National Single Window in January 2021, which will allow traders to send the License, Permit, Certificate, and other documents (LPCO) in the ASYCUDAWorld online when the cargo is processed in the ASYCUDAWorld.

Implementation of Nepal National Single Window (NNSW)

Single window system is an IT based automation system which shares information seamlessly. This is paper-free trade system which creates common platform to share information among the stakeholders hence it is an important tool for trade facilitation in the contemporary world. All the stakeholders can submit their information and documents needed to import and export through a single-entry point with the help of a single computer application.

In recent decade, various countries in the world are adopting different types of model for their single window system. Singapore, Malaysia, South Korea, Thailand, Japan and many other has already implementing and India, Pakistan, Bangaladesh, Maldives and many has been developing as per their needs. Nepal has started to implement Nepal Single Window System from last year. Generally, there are two types of operation model, one is public and other is public-private partnership in which customs plays as a main operational body and other public entity and third-party service providers conducts the system.

The basic features of National Single Windows are Single Entry mean one-stop shop and Single Submission. Not only submitting the document, it also exercises the electronic payment of duties and other charges. It provides paper free Environment with standardized document and data that helps for Sharing of information. To mitigate the customs procedure risk, it operates centralised risk management system that helps to coordinate among the agencies and stakeholders. Not only that, it helps for Analysis the trade through providing electronic data-base.

Nepal has initiated this project with the help of the world bank in 2013 but has not been significant progress till 2020. From last year 2021, it has started to implement from the agencies related to Ministry of Agriculture. Nepal National Single window system will be connected with total forty government and non-government agencies in different steps. In the first step, In addition to Department of Customs, Commerce department, Industry department, Inland revenue department, different banks and other twenty agencies will be connected. In later steps, the staff functions agencies such as other ministries and departments will be connected.

The vision of the national single widow system is to facilitate the trade and enhance the supply chain through making fast and easy customs procedures. To achieve the vision, this system has set the different goals. It aims to enhance the institutional capacity of trade related agencies and reduce the transaction costs to make public welfare by reducing the price of commodity in Nepalese market and also promotion of Nepalese products through making competitive. Nepal National Single Window System envisions fully paper-free customs procedures and administration. It reduces the time and cost of trade. Recently on the occasion of International Customs day, Nepal Customs started online payment system under the national single window system.

Conclusion

Nepal is a least-developed landlocked country sharing its borders with India and China. Nepalese economy is heavily depending on import revenue and its trade costs is considering high comparing with others. Nepal has been suffering from huge trade deficit. To make trade efficient, Nepal customs has been implementing its trade facilitation measures to mitigate the time and cost which results the seamless flow trade. Nepal customs has been developing its capacity adopting the continuous periodic strategic reform plan and currently implementing its sixth version 2021-2026. At present, Nepal customs is implementing ASYCUDA WORLD system (ICT system) for customs clearance and from last year, it has been starting another ICT system, Nepal National Single Window System which provides all the stakeholders a single ICT platform to proceed the trade. Now the Customs has reached a position to move to the paperless, faceless and cahsless Customs clearance system.

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A Systematic Literature Review on Design Thinking:
A Comparison of Software Design and Product Design

Sung Kun Kim and Eugene D. Kim
[b] *School of Business, Chung-Ang University 10pt, italic*
Seoul, KOREA
School of Design, Pratt Institute 10pt, italic
New York, USA

Abstract

Important but complex problems always require a new approach. Design is that kind of problem. 'Design thinking' is a new methodology which helps designers to solve complex problems in a creative and innovative way.

The design thinking has drawn explosive attention from scholars as well as practical experts. Its application field is not limited to products, but has expanded to areas such as computer systems, services and social innovation. Both the increased interest and the widened applicability have triggered many studies in various fields. As a matter of fact, there are many actual research results.

Despite the quantitative expansion of such papers, it is reported that it is still a challenge to get the design thinking model into the organization. This may mean that we have a lot more to learn from these studies. Especially, by comparing across different designing domains, we may not only learn from each other's differences in design issues or design processes and but also derive common principles from mutual commonalities.

In this regard, we picked the two designing areas that have been most dealt with: software design and product design. After doing a systematic literature analysis on design thinking in these two domains, this paper attempts to assess the collective evidence in these two design thinking domains and identify differences or similarities.

Keywords

Design Thinking, Software Design, Product Design, Systematic Literature Review

Effects of Information system Use on Supplier collaboration success in New Product Development

Thiam Moustapha and Namjae Cho*

*Hanyang University *correspondence, njcho@hanyang.ac.kr*

Abstract

This paper aims to investigate how companies' collaboration success in New Product Development (NPD) context. The study was conducted on projects made in nine countries and among the six most innovative sectors according to FORBES. The analysis showed that the main dimensions of Information systems retrieved from IT LEVERAGING FUNCTIONALITIES namely Project Resource Management System (PRMS), Knowledge Management System (KMS) and Collaborative Work System (CWS) have disparate impacts on the collaboration. The paper also demonstrated the importance of non-technical aspects by exhibiting its mediating effects. However Collaborative Work System (CWS) and the relational dimension complexity raised interesting debates on their impact to collaboration performance. The results participate in raising awareness about the multidimensional nature that encompasses the use of IT in new product development. Through the results of this paper, partners will recognize that an effective use of IT depends on the existence and sustainability of a symbiosis between technical and human features.

Introduction

In this new era influenced by a plethora of technological changes, the organizations are more than ever required to reorient or restructure the way they operate. From this merge the trend in NPD is towards more integration of external resources to the company (Schiele, 2010) since only few companies have the capacity and resources to develop all the components of their final product (Yeniyurt et al., 2014). Therefore, organizations are moving out of their boundaries to seek collaborations to reach innovation which can be an extremely complex process.

Many researchers have suggested different IT functionalities in a NPD context. However, the majority fits in proprietary technology (Mata et al., 1995), market analysis (Bharadwaj et al., 1999) or human resources (Powell and Dent-Micallef, 1997 & Bharadwaj 2000), which are identified not belonging to a collaborative context (Pavlou and El Sawy, 2006). Recent studies (Barczak et al., 2008; Kroh et al., 2018 & Reid et al., 2016) suggest that three major collaborative activities are needed in the context of NPD collaboration: task coordination, information and knowledge management; and interaction and communication activities between actors. With this viewpoint, Pavlou and El Sawy (2006) suggested a functional typology of collaborative IT usage conceptualized as ***IT LEVERAGING CAPABILITIES*** with three types of functionalities: project and process

management (PRM) functionalities, knowledge management functionalities (KM), and cooperative work functionalities (CW). It aims to capture the effectiveness by which NPD work units' leverage IT functionalities to perform IT-related activities.

Studies mostly demonstrated the effect of IT leveraging competence functionalities on project performance and other NPD outcomes (Banker et al., 2006, Vaccaro and al, 2010; Marion et al., 2016 & Mauerhoefer et al., 2017; Barczak et al., 2007; Kroh et al., 2018 & Heim et al, 2012). However, some studies did not specify the NPD context of the study that distinguish intra and inter-organizational collaboration. That is to say, researchers investigated IT effects in NPD projects, but few have explicitly distinguished the specific contribution within the framework of the Customer-Supplier collaboration. Therefore, this present research need to be situated in the context of Customer-Supplier collaboration. Also it is important to mention that the scope of this research gravitates on the "Customer side" (The entity that integrates the supplier within the product development process).

Some authors have suggested that use of IT is not only linked to resources and technical aspects (Gallivan et al., 2005). The socio-technical nature of the use of IT has been highlighted in certain studies (Bostrom et al., 2009 & Xu et al., 2017). Thus, ITs are sometimes considered as a

whole in which technology, actors and the social structure surrounding their use interact (Lyytinen and Newman, 2008). Therefore, the companies should combine IT tools with other non-IT resources (Marion et al., 2014). Among studies that have dealt with customer-supplier relationships, we retain the conceptualization of social capital by Nahapiet and Ghoshal (1998) that have been implemented in other NPD studies (McGrath and Sparks, 2005; Matthews and Marzec, 2012 & Gelderman et al., 2016). In their article, they proposed three dimensions that constitute social capital: a cognitive dimension centered on the creation of a common understanding between the actors, a structural dimension concerned by the configuration of the links between actors, and a relational dimension which deals with "personal" relationships between actors.

Therefore, taking into account the Customer-supplier scope perspective, the diverse effects of IT usage and the probable organizational relationship influence; a question was raised on how the usage of information systems on new product development promote the success of a customer-supplier collaboration?

- Research question1: Which dimensions of IT usage are important to study the role of Information System in collaborative product development in NPD?

- Research question 2: Does the organizational relationship amplifies the IT effects?

Thus this study aims to measure the effects of the IT usage through its diverse components such as PRMS, KMS, CWS, and also to investigate the role of an organizational background in a context of collaborative NPD. To conduct such research, it is necessary to deeply look into the literature to perfectly grasp the diverse notions related to this study.

Literature Review and hypothesis development

2.1 **Organizational relationship effects on collaborative performance**

In their study Liao and Welsh (2005) argued that cognitive dimension encourages the will to engage in dialogue, improves the efficiency of joint actions and cooperative behavior, and facilitates development of collective ideas. Through language and shared objectives, cognitive dimension also offers inter-organizational actors the possibility of developing common perspectives. Reuer and al (2002) mentioned that the presence of structural links between the actors facilitates mutual adjustment

in the monitoring of the project, and this through the development of inter-organizational routines and procedures (Reuer et al., 2002). In their research, Perrone and al (2003) found that a lack of relationship increases the uncertainty around collaboration and forces the actors to contain their resources. Conversely, when two parties trust each other, they develop more willingness to share their resources without worrying about their vulnerability. In this sense, trust is recognized as being the lubricant necessary for both partners to face unexpected events, and therefore to better manage the progress of NPD projects. Moreover, Akgün and al. (2005) demonstrated that trust was positively related to the coordination of NPD teams.

Given the theoretical evidences, we developed the following hypothesis:

H1a: Cognitive dimension has a significant effect on collaboration performance

H1b: Structural dimension has a significant effect on collaboration performance

H1c: Relational dimension has a significant effect on collaboration performance

2.2 IT usage effects on collaborative performance

Easley and al. (2003) proved that the use of a specific IT with mainly CWS and PRMS functionalities, had a positive effect on quality and performance targeting MBA (Master of Business and Administration) students. More specific to NPD, Banker and al. (2006) conducted a survey of managers and executives in companies highly oriented towards NPD. They were able to demonstrate that IT, allowing document exchange and organization (mainly KMS functionalities), had a significantly positive impact on the extent of collaboration between internal NPD project teams. Likewise, using data from an international study in 9 countries and 3 industries, Peng and al. (2014) have shown that IT oriented project management (PRMS functionalities), communication tools (e-mail, instant messaging, video-conferencing) and specialized collaborative work tools (collaborative platform and simulation) (CWS functionalities), could improve generic collaboration in NPD, including cross-functional collaboration, with suppliers. In a study performed in Brazil, Vaccaro and al (2010) found the importance of considering Knowledge based process in automobile development projects. An analysis of 113 automobile units showed the impact of KM on innovation activities through the improvement of knowledge based processes.

In addition, through an international survey of NPD actors (Marion et al., 2014), and a similar survey of project managers heavily involved in NPD in companies located in Australia (Reid et al., 2016), authors demonstrated that the frequency of use of certain ITs was positively associated with the intensity of collaboration. In these studies, they were various ITs ranging from "traditional" ICTs (e-mail, shared databases, project management tool), to "recent" ITs (wiki, cloud sharing, collaborative innovation tools) (Marion et al., 2014), or so-called "collaborative" IT (corporate social network, videoconference) (Reid et al., 2016).

In view of the different statistical studies carried out in different contexts, we formulate the following hypotheses:

H2a: PRMS dimension has a significant effect on collaboration performance

H2b: KWS dimension has a significant effect on collaboration performance

H2c: CWS dimension has a significant effect on collaboration performance

Ultimately this paper investigate whether the organizational relationship has an impact on the collaboration performance through IT usage as suggested by Kawakami (2015). Therefore we formulate the following hypotheses:

H3: Organizational relationship amplifies IT usage effect

Nonetheless it is important to clarify the notion of collaboration performance in this paper. Recent studies put focus on co-creation value (Ndubisi et al., 2019; Jin and Hong, 2007). In this sense, the success of customer-supplier collaboration in NPD will be characterized in this paper by the quality of collaboration. This might appear as an essential point to measure the direct effect of IT functionalities (PRMS, KMS, CWS) as well as the organizational relationship.

3. Research Methodology

3.1 Sampling Procedure

The target is professionals who have been collaborating with supplier teams through IT. Like the majority of research that cannot identify the entire target population, we adopt a sample approach, which consists of a fraction of the population (Fowler, 2014) which is those having experience in collaborative NPD in a customer role. Also to be in line with the present research, the targeted sectors was the "most innovative sectors" according to

Forbes 2020 such as Healthcare equipment and services, Telecommunication, Automobile, Household and personal products, Technology hardware and equipment and Software and services. Taking into account the timeframe of the thesis and the inaccessibility of open database or NPD associations (PDMA, COSMOS), we chose a survey methodology by conceiving a questionnaire to gather sufficient data to analyze.

3.2 Questionnaire Elaboration and Measurement and collection

The questionnaire for this research have been elaborated on the basis of the literature that enabled us to conceptualize the model (Pavlou and El Sawy, 2006; Peng et al., 2014; Mauerhoefer, 2017; Kawakami et al., 2015 & Um and Kim, 2018). The unit of analysis of the survey is the Customer-supplier collaboration NPD project. Respondents were asked to focus on any project in which they were involved and which was carried out in collaboration with a supplier.

The questionnaire was implemented using Google form to ensure online accessibility. Modifications were made to the questionnaire. These modifications mainly concerned the clarity of the questions, theoretical misunderstandings and the vocabulary used (e.g. organizational relationship instead of Social capital) as suggested by our supervisor. Given the international scope of the study, the modified questionnaire was then translated into Korean language with a help of a Korean fellow student. Following this translation, the questionnaire was rechecked by our supervisor to ensure that there were no notable differences between the meanings carried by the two versions, English and Korean.

In the survey, for each indicator (Table 1), respondents rated based on a 5 point Likert scale (1 = Not agree at all, to 5 = strongly agree). We note that the number of times information is exchanged between partners or frequency of communication is a measure of IT usage. For the sake of the analysis the metrics have been coded also on Likert scale standards. Previous studies suggest that this way of measuring IT usage by users is well correlated with their actual use (Barczak et al., 2007; Marion et al., 2014).

The method adopted was online data collection. The questionnaire was mostly administrated over Linkedin and Facebook Project management groups, products innovation forums as well as our network. Membership in these social platform makes them eligible for selection in our sample (Fowler, 2014) because these social platforms

are intended to be diversified (geographic locations, sectors), and therefore to be fairly representative of the study target. This would allow a better generalizability of the results (Groves et al., 2009). Also with no guarantee that these members were actually able to collaborate with suppliers through IT, we took care during the collection of data, to specify and recall the purpose and the requirements to participate in this survey in our posts. Therefore, actors not concerned will be neither be motivated nor interested in responding to our survey (Fowler, 2014).

4. Results and discussion

4.1 Model fit

Following the collection of 85 projects forms, it is now a matter of ensuring the unidimensionality, reliability, convergent validity and discriminant validity of these constructs. Following the recommendations of Anderson and Gerbing (1988), this step is necessary before starting the analysis of the links between the variables.

According to Hair and al, (2010) the value of CMIN/Df should be less than 3. The value of absolute fit indices such as Goodness of Fit Index (GFI) is sample sensitive but it should not be less than 0.8 (Baumgatner and Homburg, 1996; Maulana, and Rufaida, 2014). The value of incremental fit index such as Comparative Fit Index (CFI) and Tucker Lewis Index (NFI) should be greater than 0.7 (Hair and al; 2010). The value of Root Mean Square of Approximation (RMSEA) ranging from 0.to 0.05 reflects model good fit but values of RMSEA ranging from 0.5 to 0.08 reflects an acceptable fit of the measurement model (Lievens and Anseel, 2004; Gallaghar and al, 2008). Therefore after item deletion, the fit indices criteria (Table 1) recommended by Hair and al (2010) was successfully reached.

Table 1: Fit indices

	Model fit
CMIN/Df	1.353
GFI	.801
CFI	.850
TLI	.826
RMSEA	.076

4.2 Construct Validity and reliability

The convergent validity of the constructs was measured using Average Variance Expected (AVE). The AVE values are satisfactory (AVE> 0.50) for the majority of constructs, with the slight exception of constructs relating to Structural and CWS (respectively 0.494 and 0.485) (Table 2). According to Fornell and Larcker (1981), if the value of the AVE is less than 0.50, and the reliability of the construct is considered satisfactory, the convergent validity is considered to be accepted. There all the constructs ensure convergent validity.

Table 2: Construct validity and Reliability

Constructs	Cronbach's alpha	CR	AVE
COG	.713	.715	.511
STR	.832	.841	.494
REL	.814	.826	.615
CWS	.744	.784	.485
KMS	.859	.859	.593
PRMS	.817	.821	.538
PERF	.828	.830	.558

4.3 Discriminant Validity

The Discriminant validity is calculated to check whether every construct is different from each other. The computation was done by using constructs inter correlations with the square root of their AVE's. The results (Table 3) demonstrate sufficient discriminant validity between all pairs of constructs as the AVE's square root of constructs is greater than their inter correlation counterparts.

Table 3: Discriminant Validity

	COG	STR	REL	CWS	KMS	PRMS	PERF
COG	.741						
STR	.714	.766					
REL	.333	.453	.784				
CWS	.192	.130	.012	.696			
KMS	.399	.543	-.024	.514	.697		
PRMS	.364	.492	.538	.354	.708	.834	
PERF	.416	.546	.043	.114	.514	.207	.747

4.4 Hypothesis testing

Through SEM, Table 4 shows that the collaborative performance was significantly predicted by cognitive and structural dimension (respectively β=0.551, β=0.462, p-value<0.05). Therefore hypothesis H1a and H1b stating that the cognitive and structural dimensions have

significant impact on collaborative performance are accepted. However the relational dimension failed to significantly predict collaboration performance (β=0.267,

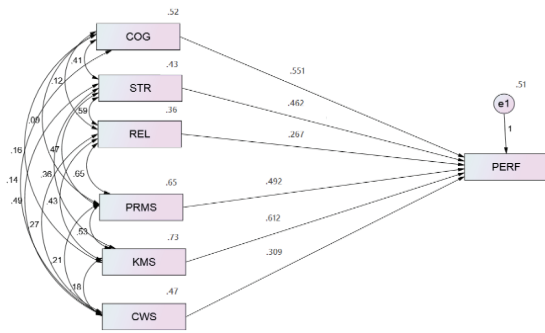**Figure 1: Structural equation model (SEM)**

Table 4: Results of Structural Equation Model

	Estimate	S.E	C.R.	P
PERF <--- COG	.551	.135	4.526	***
PERF <--- REL	.267	.114	1.573	.116
PERF <--- STR	.462	.151	3.281	.001
PERF <--- KMS	.612	.134	4.961	***
PERF <--- PRMS	.492	.145	3.633	***
PERF <--- CWS	.309	.194	1.772	.076

Regarding IT usage effect, KMS and PRMS had positive and significant relationship with collaboration performance (respectively β=0.612, β=0.492, p-value<0.05). Thus the Hypothesis H2a and H2b stating that KMS and PRMS have a significant relation with collaborative performance are accepted. The effect of CWS on collaboration performance is nearly significant yet being positive (β=0.309, p-value =0.076 >0.05). Therefor the hypothesis H2c is rejected.

To test the hypothesis stating whether the organizational relationship amplifies the IT usage effect on collaboration performance, a moderating effect analysis was run on SPSS. We computed the organizational relationship, IT Usage and collaborative performance constructs by computing their respective indicators. The results in Table 5 shows a model significance (P<0.05) which reflects the significant predictive power (β=0.345) when organizational relationship was added to the model to support IT usage IT usage.

Table 5: Results of Moderating effect analysis

Model		Standardized Coefficients	t	Sig.	Model Sig.
1	(Constant)		8.421	.000	
	ITUSAGE	.266	2.205	.030	0.20
	ITUSAGE_ ORGREL	.345	2.862	.005	

Dependent Variable: PERF, Predictors: (Constant), ITUSAGE_ORGREL, ITUSAGE

To analyze in a detailed way which elements are influenced by the organizational relationship, we decomposed and incorporated the main IT dimensions (PRMS, KMS, CWS) into the model. The results in Table 11 shows a model significance (P<0.05). PRMS and KMS had positive and significant effect through the effect of organizational relationship (Respectively β=0.398, β=0.598, p-value<0.05). However through organizational relationship CWS does not significantly affect collaboration performance (P=0.118>0.05). Therefore the hypothesis stating that the organizational relationship amplifies the IT usage effect on collaboration performance is partially accepted.

Model		Standardized Coefficients	t	Sig.	Model sig.
1	(Constant)		3.652	.000	
	PRMS	.419	2.041	.045	
	KMS	.465	2.364	.020	
	CWS	.252	1.836	.073	
	PRMS_ ORGREL	.398	3.007	.004	.047
	KMS_ ORGREL	.598	4.622	.000	
	CWS_ ORGREL	.189	1.592	.118	

Dependent Variable: PERF , Predictors: (Constant), KMS_ORGREL, KMS, CWS, PRMS, CWS_ORGREL, PRMS_ORGREL

Table 6: Results of Moderating effect analysis 2

5. Discussion

5.1 Organizational relationship effect on collaborative performance

As expected our results showed that the Cognitive dimension and the structural dimension had positive and

significant effect to collaborative performance. The fact of defining common objectives and shared languages seems to be crucial for the collaboration. These are in line with Liao and Welsh (2005) findings who argued that cognitive dimension encourages the will to engage in dialogue, improves the efficiency of joint actions and cooperative behavior, and facilitates development of collective ideas. Through shared language, cognitive dimension also offers inter-organizational actors the possibility of developing common perspectives. A study of Argyres (1999) highlighted the importance of common terminology in Stealth bomber development process. Thanks to the implementation of "technical grammar" for communication standards, the companies promoted coordination, reduced risks and allowed more flexible work process. In this sense well defined collaborative procedure not only facilitates collaboration but also creates a dialogue by which information and solutions are discovered (Kogut and Zander, 1996).

Surprisingly the effect of relational dimension and collaborative performance was found not significant. This seems to be a paradox since most of empirical studies that investigated the relational construct through trust and other constructs (Perrone et al., 2003; Akgün et al., 2005) had found significance. However our results are in line with Cappiello (2020) that found it had no significant correlation with the perception that firms had increased their innovativeness and competitiveness through a relationship construct conceptualized as "Trustworthiness". This can be explained by the fact that firms feel more secured when strong contractual commitment or safeguard are defining the relationship rather than developing "personal relationship". In fact although being an insurance for "worst case scenarios", it limits the role for collaborative outcomes (Bstieler and Hemmert, 2015), especially if it is not long term (Barrane 2020)

Also, throughout projects the level of relationship is not meant to be the same. In fact supplier involvement are not static and project's level of importance can move from one to another as business environment changes over the years. This has been demonstrated by Barrane 2020 stating that project importance level may change according to their degree of power, legitimacy and urgency.

5.2 IT Usage effect on collaborative performance

Our results have demonstrated the capability to sustain collaboration project performance through the dimensions of PRMS, KMS. The IT leveraging capabilities assumed to capture the effectiveness of IT related activities. As expected the PRMS and the KMS dimension had positive and significant effect to collaborative performance. This reflect that the effective usage of IT tools related to project planification and project control monitoring and project Information System represent an important support for actors daily tasks.

It is important to note that the findings validates past researches (Kawakami et al., 2015; Enrique et al., 2018; Ayala and al., 2020 & Vaccaro 2010). While some studies have grouped and considered the use of IT as a unique construct (Mauerhoefer et al., 2017 & Reid et al., 2016), they argued the IT usage contribute with a similar intensity to the quality of the collaboration. However it was found in this research that the functionalities contributed disparately to collaborative performance. In fact it has been noticed in the results that among the IT functionalities, the KMS followed by the PRMS explain better the relationship with collaboration performance. Similarly Ayala and al. (2020) explained that the KMS dimension of IT-leveraging capability is a necessary condition for building and sharing a common understanding of the needs and risks of the project between the two teams; defining it as a "key dimension of product creation". They also mentioned that KMS is an inimitable capability since it combines specific knowledge coming from both partners well known as tacit knowledge.

Nonetheless, CWS has been found to be nearly significant yet having positive effect on collaborative performance. Some prior researches showed similarities highlighting lack of significance for collaborative work constructs (Marion et al., 2014; Parida et al., 2016, Talas 2020). The reason might be that the IT tools used to collaborate virtually are usually highly sophisticated. Teams that are mostly operating in a traditional way could be somehow reluctant to use them. By taking a look at our sample 23% of the projects history(questionnaire) analyzed represent Senegal, which has some efforts to make when it comes to virtual collaborative work(Mzomo, 2020). In fact most developing countries may face great virtual work challenges especially when interacting with global teams in a NPD setting (Edward 2001).

Another interesting fact is that the impact of CWS could be significant when supported by KMS functionalities. From the fact that CWS functionality alone do not really affect collaboration performance, an interaction test

was performed by computing the KMS and CWS in a distinct model. The results showed KMS reinforce the CWS effects by achieving significant indexes. Therefore CWS needs to be supported by KMS, which provides a structured base of knowledge, and both are reinforced in a cycle of socialization of knowledge between partners. Similarly in his study Ayala and al. (2020) suggested the KMS and CWS dimensions of IT leveraging capability are mutually sustained in a cycle in which CWS supports customer-supplier knowledge transformation, while it is nurtured by the creation of a common knowledge base through the KMS dimension. Also Kogut and Zander (1996) have explained in their study that the value of a firm reside in the support of social knowledge (tacit knowledge) to coordination and communication.

5.3 Organizational relationship amplifies the IT usage effect

Our result has shown that the social capital represented in this research as the organizational relationship partially amplifies the IT usage effect on collaboration performance. In fact its positive and significant association with PRMS and KMS on collaboration has been demonstrated. This findings goes in line with Kawakami (2015) who argued in a NPD context the human dimension is an important asset to take into account when collaboration is involved. Besides, it has been specially noticed in our results for KMS since this type of functionality takes human dimensions into account and brings together experts and knowledge holders, leading mainly to the development of tacit knowledge (Giudice et al., 2016). Actors are more able to know each other and prioritize exchange in this scenario. Social interaction within teams enables communication, coordination, and learning since the rules of coordination and the process of learning are not only physical but also mental (Kogut and Zander, 1996). However, no significance was found with the CWS. One possible explanation could lie in the novelty and recent use of IT that support such functionalities. As mentioned by Marion and al. (2014), this could explain the reluctance of such IT which is not yet mature, since the actors are not yet familiar with their use. In addition, as suggested by Parida and al. (2016), even when small or medium-sized companies acquire IT with highly developed functionalities, the level of their use is low since the partners prefer to use informal communication channels rather than these advanced solutions. To recall, in our case the social capital lays more into "bureaucratic" type of process rather than informality.

6. Conclusion and Implications

The present research aimed to analyze the effects of IT usage on collaboration performance in a NPD context. The study was conducted on projects made in 9 countries among the most innovative sectors. This research give a broader perspective by confirming the studies who put special attention on IT usage. In fact it has been shown that the main dimensions of IT namely PRMS, KMS and CWS have disparate impacts on the collaboration. The research also investigated the importance of incorporating the organizational relationship in NPD process which enables mainly the development of tacit knowledge. It suggest a partial effect taking into account the absence of significance of CWS. It is important to note the importance of the KMS dimension which not only has been considered as a key dimension throughout the literature but also as a support to CWS.

Our results participates in raising awareness about the multidimensional nature that encompasses the use of IT. Indeed, through the results of this research, partners will recognize that an effective use of IT depends on the existence and sustainability of a symbiosis between technical, human and organizational aspects, among others. These aspects of IT use need to be aligned in order to contribute to effective IT use. By demonstrating the positive effect of organizational relationship on the effective use of IT (PRM and KM), our study emphasizes the importance of non-technical aspects in the effective use of IT. These results suggest that, rather than blaming the technical capacities inherent in ITs, it would be just as interesting to assess the non-technical aspects surrounding the use of IT.

One of the limitations of this research is that it could not fully capture the opposing views of the customer and the supplier within a single case study. Analyzing both points of view would highlight any contradictions and divergences, and enrich the exploration of the phenomenon by having opinions from both parties.

Another limitation is the size of the sample. Although it allowed to measure and test the model following recognized simulation assumptions, we doubt of the generalizability of the results. A larger sample could not only lead to better results but also a reconsideration of elements or concepts that have been interpreted.

Also it would be interesting to enrich our conceptual model by investigating more social elements that would promote the effective use of IT in a collaborative context in NPD.

This would allow a more extensive understanding and the development of a holistic model. The social capital conceptualized as the organizational relationship in this research lies more into formal aspect of relationship and do not allow a common definition agreement of certain aspects such as trust. An investigation of more flexible and informal elements related to social relationship in the context of NPD would perhaps allow to fully grasp the IT usage.

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The effect of website design on purchase intention with the mediation of perceived irritation and customer satisfaction in online shopping mall

Yan Zhang[a] and Seong Wook Chae[b]
[a] Department of E-commerce, JiuJiang University,
551 Qianjin Dong Lu, Lianxi District, JiuJiang, Jiangxi, China
Tel: +86-135-0792-7453, E-mail: zhyanlion1982dog@gmail.com
[b] Department of Digital Business, Hoseo University
12, Hoseodae-gil, Dongnam-gu, Cheonan 31066, Republic of Korea
Tel: +82-41-560-8276 Fax: +82-41-560-8308, E-mail: seongwookchae@gmail.com

Abstract

With the development of Internet technology, more and more merchants and consumers begin to sell and purchase products in online websites. In prior research papers have make many aspects research and surveys on the shopping in online. This study mainly analyzes how the website design influences on consumers' purchase intention. In the prior research, researchers had researched the relationship between the website design and the perceived irritation, but there are few researches about how the perceive irritation influence the purchase intention and the effect of the perceived irritation on the customer satisfaction. The results show that the perceived irritation have the significant influence on the satisfaction but did not have the strong influence on the purchase intention directly, but it had the indirect influence on the purchase intention through the customer satisfaction as the mediating variable.

Keywords

website design, purchase intention, customer satisfaction, perceived irritation

Introduction

As a relatively new medium for business, e-shopping has changed the way consumers purchase products and services. E-shopping has empowered consumers with widespread selections, plenty of product information, and no temporal and spatial limitations (Weng Marc Lim, 2015; Wen, Prybutok, & Xu, 2011), and many consumers now purchase products and/or services from e-shopping sites instead of going to a physical store (Weng Marc Lim, 2015). As we know, electronic commerce generally refers to the sale and purchase of products and services on the Internet; consumer purchasing decisions mainly depend on individual evaluations of the value of products or services. Shih (2004) indicated that with the increase in Internet users, the number of clicks on the web sites of Internet vendors has risen considerably.

Doll and Torkzadeh (1988) defined satisfaction as the condition of taking an affective attitude toward a given system. Websites are not always as successful or as usable as they could be. Because although record levels of activity underscore sales opportunities, 96% of all visits to a website do not end with product purchases (Lo & Gong, 2005; McDowell, Wilson, & Kile Jr, 2016). Thus,

a greater degree of satisfaction toward an information system implies a higher degree of willingness to use it. However, an ill-structured page layout could cause visitor irritation and frustration because the visitors are unable to navigate the site, to find products, or to buy online, and thus leads to a negative impact on perceived benevolence and perceived competence (Gao & Wu, 2010). Cho and Park (2001) have found in their study that customer satisfaction in e-commerce is related to the quality of website design (McDowell et al., 2016). So, the quality of website design is very important for any online store to attract customers.

While website design characteristics affect numerous cognitive and motivational aspects of online shopping behavior (Dennis, Merrilees, Manganari, Siomkos, & Vrechopoulos, 2009; Mithas, Ramasubbu, Krishnan, & Fornell, 2006; J. D. Wells, Valacich, & Hess, 2011; W. D. Wells & Chen, 1999), the majority of past studies have consistently focused on examining customers' positive perceptions and beliefs. However, consumers' negative perception of website design will discourage people from shopping online (Huang, 2008). Azeem (2012) and Hasan (2016) indicated that to enhance consumers'

online shopping behavior, it is crucial for businesses to have a better understanding of factors that arouse negative emotions and reactions among customers which could ultimately impede online shopping behavior.

We explore the negative impact of consumers' purchase intention, namely perceived irritation. In order to better intervention the negative consequences associated with perceived irritation, we discussed the relative factors with perceived irritation such as website design and customer satisfaction. Hence, our aim is to study the impact of perceived irritation on the purchase intention and customer satisfaction within the context of website design. Accordingly. The research questions are as follows:

How does website design impact perceived irritation?

How does perceived irritation affect purchase intention?

To answer these questions, we situate perceived irritation within the framework from (Hasan, 2016), investigating how perceived irritation in online shopping environment, influences consumers purchase intentions.

Literature review

Website design

If a company is not well- known or requires credit card as the primary method of payment, managers should prioritize usability in website design. For this goal, companies should take into account aspects in terms of anticipation, consistency, reversibility, legibility, efficiency, visibility, adequacy of information or provision of feedback (Cyr & Head, 2013).

Surfers are attracted to websites with distinct identity (Rosen & Purinton, 2004). Therefore, a well-designed website can make it convenient and appropriate for users to obtain their preferred information. The web screen and interface of a website are similar to the physical, social and aesthetic elements of a traditional store and need to be well designed to fulfill consumer expectations. (Eroglu, Machleit, & Davis, 2001; Rosen & Purinton, 2004). Previous studies suggest that the impact of website design on online shopping is as important to consumers as the effects of good service and low prices in traditional retailing (Koufaris, 2002). Website design plays even a greater role in online purchasing than the service provided to customers in traditional stores. In online shopping, consumers manifested the experience and evaluate the quality of service by the site's interface design, before they make purchases (Koufaris, 2002).

Perceived irritation

Irritation involves both emotional and cognitive strain. Irritation which includes both cognitive and emotional dimensions describes a state of mental impairment caused by goal discrepancies (Mohr, Müller, Rigotti, Aycan, & Tschan, 2006). The perceived irritation includes the technological irritation and the social irritation. For the mobile platform, technological irritation refers to the feeling of being irritated due to the interface of mobile SNSs. And interruptions are associated with a higher level of irritation (Baethge & Rigotti, 2013). Social irritation refers to feeling irritated because of social relationships (Park, Jung, & Cho, 2018).

Customer satisfaction

Satisfaction, according to Oliver (1980), is the "consumer's fulfilment response", and he further defined satisfaction as "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with a consumer's prior feelings about the consumer experience". Anderson and Srinivasan (2003) proposed that "satisfaction may be best understood as an ongoing evaluation of the surprise inherent in a product acquisition and/or consumption experience." Satisfaction is one of the significant consumer outcomes in business-to-consumer online environments(Cheung & Lee, 2005; Evanschitzky, Iyer, Hesse, & Ahlert, 2004; Hsu, Chang, & Chen, 2012). Numerous studies have shown that satisfaction plays an important role in improving repurchase intention(Kim, 2012), and improves company market share and profitability (Hsu et al., 2012; Reichheld & Schefter, 2000). Thus, customer satisfaction is not a new concept and a great many research efforts have been made to understand its antecedents and consequences.

Hypotheses development

Effects of website design on perceived irritation

Although there are few studies have examined consumer irritation with respect to online shopping (Gao & Koufaris, 2006). According to Aaker and Bruzzone (1985), consumers will have a feeling of irritation when they have a unfavorable experience and interaction with the environment in the process of shopping. For online shoppers, the interface of the website is just as an "online storefront", through which users can interact and form a first impression of the virtual store or vendor (McKnight, Choudhury, & Kacmar, 2002). J. D. Wells et al. (2011) pointed that the site's interface design has substantial effects on perceptions of irritation. For instance, websites

that are informative, visually appealing, easy to navigate and use are less likely to instigate feelings of irritation among users (Gao & Wu, 2010). In contrast, a messy and poorly-designed website will make it impossible for users to browse the site, find products, or complete purchase tasks, which will cause negative emotions and may lead to users' irritation (Azeem, 2012; Gao & Wu, 2010; W. D. Wells & Chen, 1999). Finally, Konrad (2002) finds that web sites with pop-up banners can distract shoppers from browsing activity on these sites, thus causing e-shoppers' irritation, Hasan (2016) find that the high-quality website design would reduce the perceived irritation among online consumers. Thus, we give the hypotheses below:

H1: Website design have the negative effect on perceived irritation.

Effects of website design on customer Satisfaction

In evaluating website satisfaction of online browsers, Lindgaard and Dudek (2003) found that high satisfaction with a B2C website is yielded from high-appeal websites, whether the websites is high-usability or low-usability. And Satisfaction with e-stores, like satisfaction with traditional stores, is not derived solely from product but also from the convenience and the site design. Bai, Law, and Wen (2008) found that website quality has a direct and positive impact on the consumer's satisfaction further on purchase intentions in the Chinese context. While the influence of website quality on purchase intentions exists, consumers' satisfaction does significantly mediate this effect. Additionally, the previous study found that as a mediate variable, through the satisfaction with website functionality and usability features, website's quality has a significant influence on consumers' purchase intentions (Adi & Agushybana, 2013). Thus. we give the hypothesis below:

H2: Website design have the positive effect on customer satisfaction.

Effects of perceived irritation on customer satisfaction

Many studies have shown that perceived irritation had negative effects on online consumers' attitude, satisfaction, word of mouth, intention to return, perceived ease of use, and purchasing behavior (Hausman & Siekpe, 2009; Huang, 2008; Jere & Davis, 2011; Thota et al., 2012). As irritation is also one of the types of emotional responses to stress, it reduces users' satisfaction (Van Dolen, Lemmink, Mattsson, & Rhoen, 2001). Prior research has identified that satisfaction is effected by the smaller screens (Ozok, Benson, Chakraborty, & Norcio, 2008). Maier, Laumer,

Eckhardt, and Weitzel (2012) found that social overload measured by irritation can reduce satisfaction. So we give the hypothesis below:

H3：Perceived irritation have the negative effect on customer satisfaction.

Effects of perceived irritation on purchase intention

In prior researches, there are many studies about the positive effect that the high-quality website design on the consumers' purchase intention, but few studies have often overlooked negative factors, such as irritation (Stafford, 2003). Though Hausman and Siekpe (2009) indicates that human factors had no impact on perceived irritation, Martins, Costa, Oliveira, Gonçalves, and Branco (2019) indicates that perceived irritation of smartphone advertisements has negatively impact on perceived advertising value and flow experience. Martins et al. (2019) indicates that irritation negatively associates with ATWA toward the purchase intention. Eighmey and McCord (1998) define irritation as the degree of confusion and annoyance that surfers perceive the web. In the context of e-commerce, criticisms of advertising and marketing schemes, tend to focus on the annoyance and irritation they cause(Peters, Amato, & Hollenbeck, 2007). Ducoffe (1996) notes that the irritating features online often exploit human anxiety, distract e-shoppers' attentions, dilute human experiences, and lead to unfavorable attitudes. In addition, Huang (2008) indicates that e-shoppers who experience irritation when shopping online also encounter difficulties when using the website. So, we give the hypothesis that:

H4：Perceived irritation have the negative effect on purchase intention.

Effects of customer satisfaction on purchase intention

Traditionally, satisfaction that defined as an affective condition that results from a global evaluation of all the aspects that make up a relationship, is stated as a crucial antecedent of re-purchase and re-usage intentions of a product or service (e.g. Anderson & Srinivasan, 2003; Oliver, 1980). Westbrook (1981) indicates that satisfaction is an emotional status that happens in response to an evaluation of customer-agent mutual interaction experiences. Online purchase intention is the strength of a consumer's intentions to perform a specified purchasing behavior via Internet. Purchase intent is a key loyalty dimension, and it is therefore likely that satisfaction with a website will increase the possibility of purchase. Online customers who have received satisfactory

services are likely to reveal positive behavioral intention (Belanche, Casaló, & Guinalíu, 2012; Zeithaml, Berry, & Parasuraman, 1996), leading to increased online purchase intention. Bai et al. (2008) showed that customer satisfaction with website has a positive impact on purchase intentions. Based on the foregoing discussion, the hypothesis is made as following:

H5:   Customer satisfaction have the positive effect on purchase intention.

Method and data analysis

Method and subjects

The survey method was adopted. We designed a questionnaire on an online survey website (http://www. wjx.cn) to recruit participants. We shared the link of the questionnaire on the most popular social media APP WeChat in China. This questionnaire consisted of 19 self-reporting items in four constructs. All items were designed to be measured using a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. The measurement items were adopted from previous studies, and minor changes were made to these items to enhance reliability and validity.

Website design (WD) was measured by items adapted from Shergill and Chen (2005), Perceived irritation (PI) was measured by items adapted from Weng Marc Lim and Ting (2012), Customer satisfaction (CS) was measured by items adapted from Chang and Chen (2009), Purchase intention (PI) was measured by items adapted from Hausman and Siekpe (2009).

Regarding samples, we got 288 responses back, but 21 of them were eliminated due to obvious inconsistencies or erroneous answers, resulting in an 92.7% validity rate. Of the 267 respondents, 55.8% were female and 44.2% were male, and more than 50% were employees in enterprises and institutions.

Measurement model

The partial least squares (PLS) approach was adopted to test reliability, validity, and the proposed hypotheses. Data was analyzed using SmartPLS3(Benighted: SmartPLS. Retrieved from http://www.smartpls.com). PLS is a component-based structural equation modeling (SEM) approach, which focuses on prediction and has less rigorous sample size and residual distribution requirements. As a SEM, the PLS approach allows researchers to analyze the measurement model parameters and structural path coefficients simultaneously.

This study used confirmative factor analysis to examine the reliability and validity of the measurement. PLS analysis was performed to obtain the parameter estimates for the structural equation model. The convergent validity was examined by item loading, CR, and AVE. The loading of each item was greater than 0.5. Composite reliabilities (CR) are greater than 0.70 threshold, indicating good reliability and internal consistency in all cases (X. Lin, Featherman, & Sarker, 2017). The AVE values should be greater than the accepted level of 0.5 (W. Chin, 1998; Ko, 2018). he AVE values ranged from 0.53 to 0.78, greater than the accepted level of 0.5 (W. Chin, 1998). The result suggests that the convergent validity requirement was met.

Discriminant validity is evaluated by testing if the matrix with an equal-diagonal element (square root of AVE) hold the value maximization (Fornell & Larcker, 1981; X. Lin et al., 2017) suggested that discriminant validity can be accessed by examining if the AVE square root is greater than each latent variable's correlations.

Structural model

The structural model was assessed to test the relationship between the endogenous and exogenous variables, the path coefficients were obtained by applying a boot-strapping routine (Esposito Vinzi, Chin, Henseler, & Wang, 2010), A PLS bootstrapping technique was used as suggested by W. Chin (1998). The results show that website design for perceived irritation (β=-0.151, p<0.01), explaining 2.90% of the variance ($R^2 = 0.029$). And website design for customer satisfaction ($\beta = 0.656$, p < 0.001), explaining 45.0% of the variance ($R^2 = 0.452$). Meanwhile, the result showed that the perceived irritation for the customer satisfaction (β=-0.080. p<0.01). The results also show that customer satisfaction for purchase intention ($\beta = 0.703$, p < 0.001), explaining 51.0% of the variance ($R^2 = 0.509$). Finally, perceived irritation for purchase intention ($\beta = -0.048$, p >0.5). In addition, this study calculated the mediation effect. The indirect effect of website design on the purchase intention through customer satisfaction ($\beta = 0.461$, p <0.001) is significant. The indirect effect of the perceived irritation on the purchase intention through customer satisfaction ($\beta = -0.056$, p<0.05) is significant.

Website design was negatively associated with the perceived irritation and positively associated with customer satisfaction. Hence, both the hypotheses H1 and H2 was supported. Perceived irritation was negatively associated with customer satisfaction, indicating support

for hypothesis H3. Also, customer satisfaction was found to be positively associated with purchase intention, so hypothesis H5 was supported, however, perceived irritation had no association with the purchase intention, so hypotheses H4 was not supported.

Discussion

This work was motivated by a desire to understand how website design impact perceived irritation and how perceived irritation impact purchase intention and customer satisfaction. Rooted in the framework from Hasan (2016), we built a theory model of perceived irritation. Our research demonstrate that website design has a significant positive impact on customer satisfaction, while customer satisfaction has a significant positive impact on purchase intention. First, consistent with our hypotheses, indicating that high-quality website design can improve customer satisfaction and customer satisfaction can improve customers' purchase intention, which indicated that the quality of the website design has a significant influence on consumer purchase intention. Meanwhile, website design has negative significant influence on perceived irritation, indicating that high-quality website design can reduce the customers' perceived irritation, indicating that when the consumers browse or purchase online, their emotion can be influenced by the quality of the website design, a good website design can bring a positive result for the vendor online. Whereas perceived irritation did not have significant effect on purchase intentions, indicating that the pure customers' perceived irritation cannot change the customer's purchase intention and purchase behavior directly, which maybe because the consumers consider the performance of the products and so on in addition to the emotions. but perceived irritation has a significant negative impact on customer satisfaction, and customer satisfaction has the negative impact on the customer's purchase intention, indicating that the positive emotions can bring positive behavior intention. However, negative emotional illness may not have a direct and significant impact on consumers' purchase intentions, but it can indirectly affect consumers' purchase intentions through degree of customer satisfaction. The priori research indicated that customers experience dissatisfaction with perceived irritation and poor website design, and dissatisfying incidents have negative effect on future positive behaviors (Meuter, Ostrom, Roundtree, & Bitner, 2000). Our research shows that the customers' purchase intention is not only influenced by positive factors such

as customer satisfaction, but also influenced by negative emotions such as perceived irritation. According to relevant marketing theories, negative emotions sometimes have a greater impact than positive emotions. Therefore, our study supplied the theory support for the future research in online shopping mall.

Conclusion

In this study, we examine effect of the perceived irritation on the satisfaction and purchase intention about the website design in the online shopping mall. our results reveal that the perceived irritation have the negative influence on the satisfaction and purchase intention indirectly, but not have the direct influence on the purchase intention. This study contributes to the foundation for future studies on the negative effect on the purchase intention such as perceived irritation. By building on this study, merchants online and offline can pay more attention on the negative influence which can influence the consumers' purchase intention directly and indirectly.

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Attitude to Work from Home During the COVID-19 Pandemics: Work Life Balance, Work Productivity and Workloads

**Yolande Yunhsiou Yang[a], Chih-Chien Wang[b] and, Kuan-Chin Wu[a]**
[a] Department of Business Administration
National Taipei University, New Taipei City 23741, Taiwan
Tel: +886-2-8674-1111 ext 66570, E-mail: yolande@mail.ntpu.edu.tw
[b] Graduate Institute of Information Management
National Taipei University, New Taipei City 23741, Taiwan
Tel: +886-2-8674-1111 ext 66673, E-mail: wangson@mail.ntpu.edu.tw

Due to the Covid-19 pandemic, some countries or cities had been lockdown so that people had to work from home. Some companies asked employee to work from home to avoid or reduce virus spread. However, with the popularity of vaccines and the approve of new anti-viral medicine, people are desire to back to normal life. However, when companies ask employees to back to office, employees have different responses to the back to office decision. Some employees prefer to keep working from home, while the others hope to back to office immediately and stopping work from home. The reasons behind employees' attitude to work from home may come from their work loads, their work productivity, and work life balance during work from home period. Since Covid-19 pandemic keep on and new Omicron variant virus spread quickly. To work from home or not is now a dilemma for companies. Understanding employees' attitude is important for managers to evaluate their work from home policy. This research aims to explore the factor influencing uses' work-life balance and performance when working from home due to the pandemic, and their effect on the intention to keep working from home in the future. We develop an online questionnaire survey. 316 subjects who have experiences working from home voluntary join the study. SmartPLS 3.0 is used to analyze the data and result shows that working environment is positively related to performance and work-life balance. In addition, workload is negatively related to work-life balance. Work performance, work-life balance, and flexibility in working hours are all positively related to the intention to keep working from home. The research results can help managers to make their work from home decision during pandemic period.

Keywords
Work from Home (WFH), WFH Environment, Work Life Balance, Productivity, Workloads, COVID-19 Pandemics
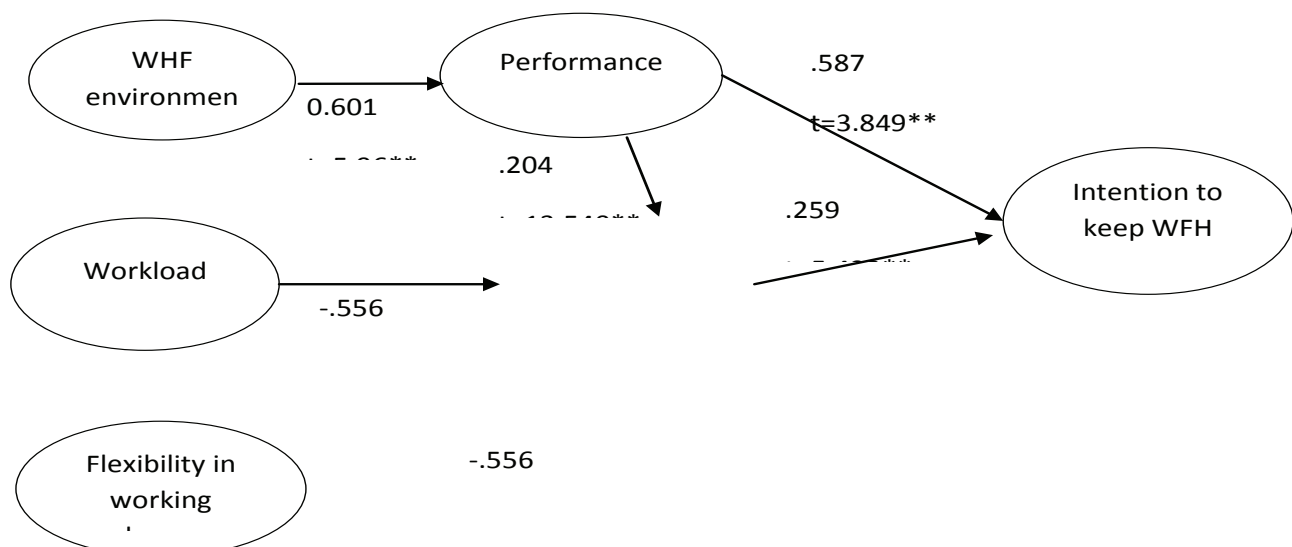
Metaverse as the Future of Work: Are Asian Employees Ready?

Yanki Hartijasti
Faculty of Economics and Business Universitas Indonesia, Jakarta 10430, Indonesia
E-mail: yanki.hartijasti@ui.ac.id; yankihartijasti@yahoo.com

Abstract

The Covid-19 pandemic has changed traditional office working in favor of a combination of physical and virtual worlds (or hybrid). Hybrid working has been claimed to increase employee satisfaction and boost productivity because it improves employees' work-life balance. However, some managers still struggle to maintain visibility over team productivity and complain that when working from home, they are unable to read body language and communicate effectively with their employees. The risk of disengagement will increase if there is a prolonged absence of in-person interaction, because this interaction is very crucial for the employees to stay motivated during this tough time of Covid-19 pandemic.

There is a discourse among the big tech companies that metaverse can be a game-changer for the dilemma of hybrid work system. It will blend the multiple elements of technology, including virtual reality, augmented reality, and physical reality where employees "live" and "work" in digital reality. Although they can work from anywhere and not from the office, their work can still be monitored in real time. However, this is just a preliminary claim.

Therefore, the objective of this paper is to prove that the majority of Asian employees will need at least 5 more years to be able to move into the metaverse. Although metaverse is an attractive working world amid a pandemic, it is not as easy as turning the palm of the hand. Currently most organizations in Asia are still struggling in getting used to hybrid working systems, let alone working in the metaverse.

One of the reasons for arguing that Asian employees are not ready to work in the metaverse is that maintaining employee engagement in the digital age is far more complicated and challenging, especially in time of pandemic. When managers are far away, it is very difficult to make sure if employees are actually working or not. If they don't fully understand what is expected by the managers, they prefer to keep quite rather than asking for clarification. This is in line with the definition of working in Asia which is when they are in close vicinity to the managers.

Another reason is that it will be hard for Asian employees to work from home because many of them have not sufficient facilities to work properly, such as internet connection and compatible laptop. They prefer to work in the office, even though they must commute a long way to the office. This is also in relation to Asian employees as being collectivist who prefer to work in a group rather than working alone at home.

These challenges do not mean that organizations in Asia can't possibly work in the metaverse in the near future. When employees are accustomed to hybrid work system, the transformation to the metaverse can be carried out. The most critical thing for a successful digital transformation workplace should be organized by leaders who are visibly engaged and committed to the transformation, as well as willing to encourage and motivate employees to participate in molding a successful and suitable future of work.

Keywords

Asian employees, collectivist culture, hybrid working, metaverse, pandemic

The Conceptualization of Marketing Practice:
Theory and Scale Development

Oliver H M Yau, Ph.D.

Honorary and Distinguished Professor

Lee Shau Kee School of Business and Administration

Hong Kong Metropolitan University

Eric Cheng, Ph.D.

University of South Australia

Bernard Lee, Ph.D. & D.B.A. *

Chinese University of Hong Kong, Shenzhen

*Address for correspondence

Chinese University of Hong Kong, Shenzhen

Tel: 852-6336 7766

Email: bernardlee2007@gmail.com

Abstract

Purposes

The purposes of this paper are two-fold. First, to conceptualize marketing practices, and second, to develop a reliable and valid scale for marketing practices.

Methodology

After conducting some focus group discussions and expert opinions, we interviewed 427 respondents for the development sample (186) and the validation sample (268) using a multi-stage stratified sampling method.

Finding

Through a comprehensive literature review, we have identified consumers' key considerations towards marketing practices (MP) by a thorough and systematic literature review. Subsequently, we developed marketing practices as a multidimensional concept represented by VALER (Value, Authenticity, Legitimation, Experiences, and Relationship). Finally, we successfully examined the reliability and validity of the scale for MP using the procedures suggested by Churchill (1979) and Yau (2007). Results showed that the scale for MP is robustly reliable and valid.

Research Limitations

The study reported in this paper may be limited by its restriction to Hong Kong respondents. The sample size is

Implications

Originality/Value of the Paper

This study introduces a new scale for marketing practice in the marketing literature

The consumer perspective of marketing practices is significantly under-researched, and as a result, this paper adds value to the existing literature by conceptualizing MP and encouraging research in MP by developing a scale for MP

KeyWords

Marketing practices, consumer behaviors, marketing activities, Marketing theory, scale development

The Conceptualization of Marketing Practices: Theory and Scale Development

1. Introduction

The concept of marketing practices has raised the interest of researchers in recent years (Ahmetoglu, Furnham & Fagan, 2014; Arditi, Polat & Makinde, 2008; Austin, Plouffe & Peters, 2005; Brown et al., 2005; Carter & Curry, 2010; Coviello & Brodie, 2000; Coviello et al., 2003; Coviello et al., 2002; Coviello, Brodie & Munro, 1997; Crutsinger, Knight & Kim, 2010; Dibb, Simões & Wensley, 2014; Heath & Heath, 2008; Hooley, Lynch & Shepherd, 1990; McPherson, 2007; Palmer & Wilson, 2009; Phillips & Hallman, 2013; Sheth, 2011). However, the discussions were mainly concentrated on two perspectives: 1) The theoretical differences between marketing and marketing activities from the marketers' point of view, and 2) The detrimental role of marketing malpractices in the marketplace. The term "marketing practices" has been used casually without strictly and conceptually defined in the extant literature. Not capturing the full diversity of marketing practices leads to a situation where marketing practices are difficult to measure when treated as a construct. Hence, this paper aims to re-specify the marketing practices domain and conceptualize it from existing literature on marketing into dimensions to develop into a measurement scale for marketing practices. We organize this article in the following sequence. The first part provides an overview of research in marketing practices from both the marketers' and consumers' perspectives. Next, we develop a measurement model of marketing practices, consisting of five dimensions (VALER), resulting from the literature review on marketing practices. Third, we conducted both qualitative and quantitative research to assess the reliability and validity of the scale. Finally, we provide directions for future studies at the end of this article.

Figure 1. Perspectives of Marketing Practices

2. Two Perspectives of Marketing Practices

2.1 Marketing Practices from Marketers' Perspectives

Scholars who pursue an understanding of marketing practices from marketers' perspective seem to have delineated the concept by looking into three different marketing views: 1) Theoretical, 2) Functional, and 3) Marketing Activity.

1. Theoretical View of Marketing: Marketing is a philosophical approach to doing business (Hooley, Lynch & Shepherd, 1990, p.7). Empirical findings from academic studies also support the idea that marketing is a "guiding philosophy" (Hooley, Lynch & Shepherd, 1990, p.12), implying that marketing's central ideas can guide the development of marketing practices. Many scholars have investigated marketing practices by using different marketing theories, and these studies have led to the development of various concepts or characteristics of marketing practices (Coviello & Brodie, 2000; Coviello et al., 2002; Coviello, Brodie & Munro, 1997; Palmer & Wilson, 2009; Sheth, 2011). Sheth (2011, p.166) contends that marketing practices are contextual-based and contingent upon markets and situations. He proposes that when entering an emerging market, marketers should rethink the applicability of marketing theories in traditional and highly developed markets.

   Similarly, based on marketing theories, other academics propose to classify marketing practices into four archetypes: 1) transactional marketing; 2) database marketing; 3) interaction marketing; and 4) networking marketing, by taking both the exchange theory and relationship marketing theory into consideration at the same time (Coviello & Brodie, 2000; Coviello et al., 2002; Coviello, Brodie & Munro, 1997). Although their studies suggest that the above practices represent the concept of marketing practices, they have the weakness of low reliability for some sub-dimensions. Palmer and Wilson (2009) later conducted a qualitative study to enhance the conceptualization of marketing practices proposed by Coviello et al.

2. Functional View of Marketing Literature suggests that, as marketers consider, marketing is a function responsible for identifying and meeting customer needs for an organization (Hooley, Lynch & Shepherd, 1990, p.12). Other scholars also echoed

the idea that "marketing is best viewed as the function that manages the connection between the organization and the customers" (Moorman & Rust 1999, p.195). Therefore, marketing seen as a function seems pervasive in marketing academia.

Furthermore, various aspects of the marketing function, such as sales support, promotion, and customer needs identification and matching, are identified in marketing studies as functions (Dibb, Simões & Wensley, 2014, p.384). These aspects form different groups depending on the organization of the marketing function.

3. Marketing Activity View   Actual marketing activities have served to study marketing practices. We call such an approach the marketing activity view approach. The American Marketing Association (AMA), explicitly defining marketing in 2013, supported that marketing practices are a set of specific marketing activities.

Two concepts of marketing practices have been suggested based on the activity view of marketing. The first refers to marketing practices as specific marketing activities. In contrast, the second concept relates to marketing practices as generalized categories of marketing activities derived from specific marketing activities.

2.2 Deficiencies in Studies from Marketers' Perspective

From the marketers' perspective, marketing practices have three approaches, as discussed above. They are from the 1) theoretical view of marketing, 2) functional view of marketing, and 3) marketing activity view. However, all of them seem to suffer from some deficiencies, as discussed below. Although these studies could better understand the nature of marketing practices and enable marketers to choose or design marketing practices, an essential piece of information is missing. That is whether those marketing practices are welcome or approved by consumers.

In the following subsection, we look into those studies of marketing practices from the consumers' perspective and identify their deficiencies.

Marketing Practices from Consumers' Perspectives Many scholars (Carter & Curry, 2010; Crutsinger, Knight & Kim, 2010; Heath & Heath, 2008; Phillips & Hallman, 2013) have looked into the concept of marketing practices

from consumers' perspectives. We divide their studies into 1) individual marketing activity and 2) a bundle of marketing activities.

1. Individual Marketing Activity   Individual marketing activity refers to single marketing activity in different aspects such as pricing (Ahmetoglu, Furnham & Fagan, 2014; Campbell, 1999; Campbell & Percival Carter, 2014; Carter & Curry, 2010), product (Phillips & Hallman 2013), promotion (Chatterjee, 2007; Lichtenstein, Netemeyer & Burton, 1990; Lyberger & McCarthy, 2001) and channel (Nguyen & Klaus, 2013). Ahmetoglu, Furnham, and Fagan (2014) studied six pricing tactics and found that consumers perceived some better than others. Carter and Curry (2010, p.771) also considered the pricing practice and investigated the transparent pricing effect on consumers' perceived value. They suggest that "consumers gain value from incremental information communicated via transparent pricing to the extent that they express a willingness to buy the more expensive of two identical items." Phillips and Hallman (2013) conducted a study of consumers' risk perception of new products using the case of genetically modified food in 2013. They contend that consumers would "perceive a series of risks and benefits of consumption and use those perceptions to form product judgment." As such, firms should pay attention to consumers' risk perceptions associated with a firm's marketing practices to "create more effective marketing strategies that better resonate with consumers" (Phillips & Hallman, 2013, p.746).

2. A Bundle of Marketing Activities
Academics also study marketing practices by looking into consumers' general perceptions about marketing or a bundle of marketing activities. Heath & Heath (2008) did a qualitative study by conducting in-depth interviews with 29 respondents to understand consumers' attitudes towards marketing and campaigns. Their findings indicated that a negative attitude towards marketing is prevalent, "especially on the distrust of advertising and promotion" (Heath & Heath, 2008, p.1035). They highlighted that "most negative impressions seem to stem from marketing campaigns or consumption experiences where the participants felt deceived because of hidden or incomplete information" (Heath & Heath, 2008, p.1034).

2.4 Deficiencies in Studies from Consumers' Perspectives

Even though the above studies evaluated marketing practices from the consumers' perspective, the following three defects in these studies were spotted:

- Specific in a single area,
- exploratory in nature, and
- Focusing on malpractices.

1. Specific in Single Areas   Many scholars (Carter & Curry, 2010; Crutsinger, Knight & Kim, 2010; Heath & Heath, 2008; Phillips & Hallman, 2013) focus on specific marketing activities, industries, or products to evaluate consumers' responses. These studies could enable scholars or marketers to understand specific marketing concerns. For example, Ahmetoglu, Furnham & Fagan (2014) depict how consumers perceive precisely the six pricing tactics (dripped pricing, reference pricing, free offer, bait pricing, bundle pricing, and time limit offer). Therefore they provide insights into each specific type of pricing practice. However, it does not offer any ideas about how consumers perceive a firm's marketing practices as a whole. Thus, the lack of totality in marketing practices' perception of those concepts derived from these studies is limited.

2. Exploratory in nature In marketing literature, there is only a single study investigating marketing practices as a whole. Unfortunately, it is exploratory. Heath and Heath (2008) did qualitative research on consumers' attitudes towards marketing and its campaigns as a whole. Their findings indicate that a negative attitude towards marketing is prevalent, "especially on the distrust of advertising and promotion" (Heath & Heath, 2008, p.1035).

3. Focusing on Malpractices   Similarly, we found only one study in marketing literature that evaluated marketing malpractices as a whole. Austin, Poufs, and Peters' survey (2005) focused on consumer resistance toward questionable marketing practices. They defined and conceptualized "anti-commercial consumer rebellion" (ACR) as consumers' open and avowed resistance to institutionalized marketing practices. They finally developed a scale to measure these questionable practices (Austin, Plouffe & Peters, 2005, p.62). The ACR concept describes possible resistant responses from consumers. They identified four dimensions for the concept of ACR as follows:

- ➢ Artifice – a belief that marketing practices are questionable, misleading, or deceptive;
- ➢ Avoidance – ways that consumers react to problematic marketing practices such as avoid to buy, do not purchase or even boycotting the product;
- ➢ Cynicism – feel cynical, skeptical, and suspicious about marketing; and
- ➢ Manipulation – perceive that marketers manipulate and take advantage of consumers differently.

Even though the study evaluated marketing practices from consumers' perspectives, the scholars based their research only on problematic marketing practices. Unfortunately, we did not include the neutral and positive sides of marketing practices.

3.   A Model of Marketing Practices (VALER)

From the above section, marketing practices are considered a generic name for marketing activities (Abou-Youssef et al., 2012; Arditi, Polat & Makinde, 2008; Barry & Weinstein, 2009; Brooksbank, Garland & Taylor, 2008; Christensen, Cook & Hall, 2005; Crawford, Deale & Merritt, 2013; Crutsinger, Knight & Kim, 2010). As such, we conceptualize marketing practices as consumer perceptions towards marketing activities as a whole. Following an extensive review of how consumers perceive different marketing activities, we delineate the construct of marketing practices into five dimensions: 1) Value; 2) Authenticity; 3) Legitimation; 4) Experience; and 5) Relationship. Table 1 summarises the meaning of each dimension of marketing practices as perceived by consumers.

Table 1. Five Dimensions of Marketing Practices ("VALER")

Value	Authenticity	Legitimation	Experiences	Relationship
Overall Utility (Zeithal, 1988) Value perception is based on a comprehensive evaluation of utility from what is received and what is given	**Unadulterated Truth** (Ahmetoglu et al., 2014; Heath & Heath, 2008; Warne, 1962) Sufficient and complete information to consumers; no hiding, misleading, deceptive, or questionable practices	**Congruence with Society** (Suchman, 1995) Acceptable by society as a whole.	**Feel Good** (Brainjuicer-Labs, 2014) A sense of feeling good in consumers	**Bonding** (Sin, 2005) Work hard to develop a long-term relationship with consumers
Fairness (Lowe & Barness, 2012, p. 630) A perception of being fairly treated	**Sincerity** (Austin, Plouffe & Peters, 2005) A manifestation of real intention or underlying motivation of marketing practices	**Reasonableness** (Yau, 2005) Being reasonable and showing apathy	**Likeliness** (Kim, Jeen-Su & Bhargava, 1998; Stuart, Shimp & Engle, 1987) An emotional pleasure felt by consumers	**Communication** (Sin, 2005) Frank and prompt two-way communication between consumers and marketers.
Affordability (Zeithaml, 1988, p. 15) Pricing is acceptable to the majority.	**Consistency** (Goffee & Jones, p. 89) Congruence between marketers' promises and practices	**Legality** (Yau, 2005) Complying with legal requirements	**Pleasure** (Alba & Williams, 2013) A sense of happiness experienced by consumers	**Empathy** (Sin, 2005; Yau, 2005, 2007) Put consumers' situations in marketers' shoes and proactively do consumers favor without being asked
Value add (Chang and Dibb, 2012) Adding more value	**Genuineness** (Beattie, 2014) True to what is told	**Socially Desirable** (Wilson & Stokes, 2004) Socially appropriate and desirable		

3.1   Value

The first dimension of marketing practices is valued as perceived by consumers. We delineate this concept of perceived value into four sub-concepts:

- Overall Utility;
- Affordability;
- Value-add; and
- Fairness.

In social exchange, we obtain overall utility by summing up a product's utility on two grounds. The sum of two perceived utilities of the perception of what is given and what is received. Zeithaml (1988, p.14) called the overall utility "consumers' perceived value." He proposes that what is received by consumers in a broad sense seems to include "the many different things consumers 'value' (place importance on) in a purchase transaction." Hence, it could consist of other factors such as "…shopping experience, interpersonal contact…" on top of the product or service in question (Lichtenstein, Netemeyer & Burton, 1990, p.55). What is given by consumers would include other factors such as "time, energy and effort" on top of money paid for the purchase (Zeithaml, 1988, p.14)

Affordability refers to the total "give" that consumers are able or willing to afford in return for the total "receive" during an exchange (Zeithaml, 1988, p.15). A product might have more excellent overall utility by comparing the "give" and "receive."

However, the consumer might finally choose another product having smaller overall utility simply because consumers cannot afford the total "give." Along with this thought, Chang and Dibb (2012, p.256) extend the notion of customer-perceived value and propose that "customer-perceived value is the customer's overall assessment of what is received and what is given (sacrifice). Customers make this judgment by considering the combination of product quality, service quality, price affordability, and shopping experience…." Therefore, affordability seems to play a role in the customer's perceived value.

Fairness refers to consumers' perceptions of being treated fairly in marketing practices. For example, marketers have been practicing target marketing, leading to more favorable offers to target groups. As a result, non-target groups end up paying more to receive the same quality or receive less utility even if they pay the same price (Lo, Lynch & Staelin 2007, p.128). Today, consumers are well aware of various types of differential treatments, and they show growing concern if mistreated.

3.2 Authenticity

Literature suggests that authenticity has two meanings as perceived by consumers:

unadulterated truth and sincerity.

3.3. Unadulterated Truth

Unadulterated truth refers to sufficient and complete information that marketers would pass on to consumers in marketing practices (Ahmetoglu, Furnham & Fagan 2014; Heath & Heath, 2008). Literature indicates that consumers are increasingly concerned about misleading and deceptive marketing practices (Hersh & Palawan, 2014; Nilsson, 2012). For example, the use of pricing tactics has been condemned as a common misleading marketing practice. Thus regulators are now having a much closer look at what is being practiced (Ahmetoglu, Furnham & Fagan, 2014, p.720). Besides, advertising tactics using trickery to trap individuals into a consumption-oriented lifestyle are considered another candidate for deceptive marketing practices (Austin, Plouffe & Peters, 2005, p.65).

Sincerity refers to being faithful to oneself and exposing that inner self to others (Melzer, 1995). It also implies that the true self is expected to be honest and not deceive others. Furthermore, the concept of sincerity is closely related to authenticity (Choi et al., 2015; Goffee & Jones, 2005, p.87), but they are not the same. However, in a marketing context, they bear a similar meaning, and

both sincerity (Joseph, 2013; Puzakova, Kwak & Bell, 2012, p.985) and authenticity (Choi et al., 2015; Girardin et al., 2013; Morhart et al., 2015) are often applied to understand a consumer's perception of branding. Therefore, we consider brand sincerity and authenticity the same concept in this article. They are both used to describe brand personality as perceived by consumers.

3.4 Legitimation

The third dimension of marketing practice is legitimation. The concept of legitimation is different between Western and Chinese perspectives. In the West, it can be understood as congruence. At the same time, in Chinese, it is delineated into empathy (情), Reasonableness (理), and Legality (法).

3.4.1 Congruence

The concept of legitimation connotes "congruence between social values associated with or implied by (organizational) activities and the norms of acceptable behavior in the larger social system" (Suchman, 1995, p.574). In other words, when an organization is said to be legitimate, its activities are consistent with expectations derived from social norms. They are thus accepted by society at large. Further, we judge the consistency on whether the activities are desirable, proper, or appropriate through the lens of shared beliefs of the social system (Suchman, 1995, p.574). Put another way. It means most society members would desire those activities and think they are proper and appropriate to society. Therefore, the community at large considers the actions legitimate.

In a marketing context, legitimacy is the public's judgment rather than an individual's. In other words, legitimacy is a social judgment of acceptance, appropriateness, and desirability (Nicholas & David, 2004, p.219). We view the congruency from two perspectives. The first look at the congruency from the marketing firm's eyes and named it strategic legitimation. From society members' viewpoints, the second is called congruency institutionalized legitimation (Suchman, 1995). That implies that what marketers think is congruent with society might not be the case in consumers'. Even though Suchman proposed that an organization should work from both perspectives, we will focus only on institutionalized legitimation because the purpose of this article is to understand how consumers evaluate marketing practices.

Empathy (情), reasonableness (理), and legality (法)
When marketing activities are considered appropriate, proper, and desirable by society at large, they are said

to be legitimate. In Chinese culture, legitimacy refers to empathy (情), reasonableness (理), and legality (法) (Yau, 2005). It could be appropriate when a marketing activity is backed up with a proper reason. Therefore, the concept of reasonableness is very similar to appropriateness and properness. Confucianism considers reasonableness the essential component in Chinese culture, whereas legality is the second, and empathy is the last. If a marketing activity is not reasonable, it is not legitimate even though it is legal to consumers. On the other hand, if the marketing activity is reasonable, it must be legal and show empathy.

1.5 Experiences

The fourth dimension of marketing practice is experiences. Marketing practices emphasize consumer experiences on top of the products or services. Consumers want to buy products that can deliver good experiences (Baser, Cintamur & Arslan, 2015, p.103).

Consumers evaluate marketing practices by comparing the expected performance and actual experiences (Oliver, 1980). They would store each experience in their memory to serve as a reference point for future evaluation of marketing practices (Chou et al., 2016, p.116). Furthermore, a study reveals that hotel guests' consumer experiences are affected by two factors: interaction with the physical environment and interaction with service personnel (Walls et al., 2011, p.166). Another consumer experience study relating to smartphone users identified three factors: usability, product-fit, and look and feel, determining how well consumers can interact with a smartphone (Wildner, Kittinger-Rosanelli & Bosenik, 2015, p.54). These studies suggest that consumer experiences are about interaction with the products or services in question. Based on understanding the above factors, marketers could work further to "meet or exceed people's emotional needs and expectations" to create superior consumer experiences (Berry, Carbone & Haeckel, 2002, p.85).

As suggested in the literature, marketing practices' emotional aspects can be enhanced by carrying some feel-good factors. Therefore, when marketing practices can produce emotional connections such as joy, happiness, and feeling good, consumers also create favorable experiences.

1.5 Relationship

The fifth dimension of marketing practices is "relationship." The concept of intimacy refers to the perceived close association between marketers and consumers that marketing activities could bring to consumers. Due to

marketing practices, the latter would have a stronger bond and better communication. Looking into marketing relationship orientation, Sin et al. (2005) advocate that the cultivation of four factors, bonding, empathy, reciprocity, and trust, would enhance the propensity of building up a close relationship with others. As such, intimacy can be achieved.

Based on these five dimensions, we define Marketing Practices (MP) as follow:

"The MP refers to business activities centering on the creation and maintenance of a relationship between two parties of exchange, the supplier as an individual and the consumer as an individual through the possession of the desire to be mutually empathic, reciprocal, trustworthy, and to form bonds."

The identification of the critical dimensions of marketing practices is essential. For example, it is no longer sufficient to advise marketing practitioners that the key to successful marketing is relationship marketing without knowing what dimensions successfully constitute a relationship upon which RMO can exist.

4. Developing a Reliable and Valid Measure of Marketing Practices

This study adopted a two-stage research design consisting of exploratory research in the first stage and formal analysis using a conclusive design in the second stage.

In the exploratory study, we adopted a literature review, in-depth interviews, expert opinions, and focus group interviews and executed them in two phases. Phase one was a literature review, also known as a secondary exploratory search. Phase two consisted of three methods: in-depth interviews, focus groups, and expert opinions.

As the study relating to hypocrisy is fragmented compared to other marketing topics such as customer satisfaction and service quality, it is necessary to understand concepts or constructs regarding hypocrisy. As a literature search is considered one of the least expensive and quickest ways to clarify meanings of concepts (Churchill & Iacobucci, 2005, p.79), the study starts with a thorough literature review.

After a thorough literature review, we specified the domain of knowledge for MP with its five perspectives discussed in the above section. However, the literature search did not provide sufficient information for operationalizing MP. Therefore, we needed to generate more items (or statements) to represent these constructs (Maxwell,

2005). We accomplished this in the second phase of the exploratory study. We conducted three methods (in-depth interviews, focus group discussions, and expert opinions). A brief account of this second phase follows.

In-depth Interviews, Focus Group Discussions, and Expert Opinions

In achieving these four specific objectives, three types of primary exploratory research methods were adopted (Churchill 1979, p.67):

They are face-to-face interviews with target interviewees who are experts in the topic area. The interviews aim to elicit interviewees' information, beliefs, or opinions at a deeper level (Malhotra, 2012, pp.193-196). As the literature already provides a deep understanding of the measurement model's constructs, we employ in-depth interviews to verify the constructs and corresponding items generated from the literature review, rather than exploring new ideas from scratch.

We conducted two in-depth interviews, expecting that these interview participants could offer "some ideas and insight into the phenomenon" (Churchill, 1979, p.67). In addition, they should possess both academic knowledge and practical work experience in understanding consumers' needs. Hence, the selection criterion of participants was: 1) either a marketing professor with more than 20 years of teaching experience in marketing and with some real-life marketing work experience; or 2) a marketing research professional with more than 20 years of consumer research experience and with academic training in marketing.

We generated two lists of potential participants due to some website searches, one from academia and the second from research professionals. Finally, we randomly selected a professor from the Chinese University of Hong Kong and a senior research fellow executive from a semi-government institution from each of the two lists, respectively. We conducted interviews with a flexible and unstructured approach to elicit insights to complement the literature review (Malhotra, 2012, pp.193-196). The second author conducted both interviews in person to minimize bias due to different researchers' use.

Focus groups are one of the most popular qualitative-technique exploratory studies (Churchill & Iacobucci, 2005, p.81). In a focus group, a small group of individuals is encouraged to freely and openly voice their ideas, opinions, attitudes, feelings, and perceptions towards issues while led by a researcher (Churchill & Iacobucci,

2005, p.81). It is a powerful method for gathering ideas and insights, particularly for generating consumers' wording to operationalize new constructs, obtaining customer impressions of new products, or advertising copy (Churchill & Iacobucci, 2005; Fern, 1982). Therefore, this study's use of a focus group was to develop an understanding of the concepts and relationships among those views held by consumers, which is often called "interpretation" (Maxwell, 2005, p.58). This interpretation provides an understanding of the meaning of those concepts behind hypocrisy orientation and marketing practices.

We conducted four focus groups with general consumers aged 18 to 60 and maintained the group size at 8-12 participants (Fern, 1982, p.11). Malhotra (2012, p.185) suggests that a focus group should be homogeneous, and group members should have experience concerning discussion topics. As such, we predetermined the selection criteria for selecting participants. Furthermore, consistent with the literature (Tong et al.,2014, p.978), we adopted gender and age as bases to classify focus group participants. Therefore, four focus groups were designed with the characteristics, as shown in Table 1.

Table 4. Profiles of Focus Group Participants

Group number	Group size	Gender	Age
1	8-12	Male	18-34
2	8-12	Male	35-54
3	8-12	Female	18-34
4	8-12	Female	35-54

The second author facilitated all four focus groups to ensure consistency of moderation. To reduce possible bias and the effect of social desirability, we assured the participants that there was no right or wrong to their expressed ideas. They were free to leave the discussion room any time they wanted to do so.

After generating and reviewing a pool of items from a literature search, in-depth interviews, and focus group discussions, we invited a panel of experts to review items measuring the new construct for content validity. The experts could be scholars who have worked extensively on similar constructs. We invited to rate the items' relevance in measuring the construct (DeVellis, 2003, p.86; Wymer & Alves, 2012, p.145).

After searching at the eight Hong Kong government-funded universities for academics qualified as judges

for the panel of experts, we created a list of potential members. They are marketing professors who have good experience in scale development. These professors were randomly selected and then invited to be members of the expert panel. Finally, we were successful in recruiting four members as intended.

We prepared a table that consisted of the rows' proposed items and corresponding MP dimensions in the columns. Based on their judgment, the panel members separately matched those items to which dimension they belonged. If three-panel members (75%) agree that an item belongs to a construct's dimension, we keep it without further changes. We asked panel members separately to provide feedback for items that failed to represent a dimension. First, we revised these items in wording or even content. Then, both revised- and non-revised items were put together in the same format and sent to the panel members again for matching. We stopped matching when we made no change to the items. However, we deleted any item that failed to fall into any dimension after many matching rounds. We would also delete the dimension for any dimension with no item under it.

4.1 Formal Survey with Two Independent Samples

As this article involves developing a new scale, we employed two independent samples in the formal survey (Churchill, 1979, p.67). The first sample, usually called a development sample, was mainly for scale purification. First, we verified the reliability and dimensionality of the new scale. After that, we further confirmed the scale's validity using the second independent sample, commonly known as a validation sample.

4.2.2   Sample Sizes and Sampling

The sample size refers to the number of population units drawn from the population frame (Malhotra, 2012). In this study, we adopted a statistical approach in determining the sample size, allowing researchers to compute the optimal sample size for a given confidence level (standard error) and level of precision (relative allowable error) (Churchill, 1995; Malhotra, 2012; Zikmund & Babin, 2010). The formula employed to determine the sample size is as follows.

$n = Z^2(C/R)^2$

where

      N = sample size

      Z = the Z value associated with confidence level

      C = the coefficient of variation

      R = the level of precision in percentage points

Researchers have to pre-specify the confidence level and level of precision and assume the variation coefficient to use this formula. This study specified the confidence level at 95% and the corresponding Z value at 1.96. Moreover, this study allows a 5% error (R) from the mean. We used a pilot survey to determine the coefficient of variation. The pilot survey using a convenient sample of 75 consumers revealed that the mean value of the variation coefficient was 0.33, while the largest coefficient was 0.43. Therefore, the first independent sample size was 168 (n = 1.96^2 x (0.33^2 / 0.05^2) when the mean coefficient of variation was adopted. Using the second sample for scale validation, a more stringent standard was preferable. The largest coefficient of variation, instead of the mean coefficient value, was adopted. Thus, the sample size for the second independent sample was 284 (n = 1.96^2 x (0.43^2 / 0.05^2).

Since the study focuses on the Hong Kong market, we defined the population as Hong Kong adult consumers. As the research involves developing psychometric scales, only individuals aged over 18 were selected (Maraz et al., 2015, p.327). Besides, according to the Hong Kong Census and Statistics Department (HKCSD), in 2011, non-Chinese comprised just 4% of Hong Kong's population. Considering that the majority in Hong Kong are Chinese, we wrote the questionnaire in Chinese. We conducted the survey in Cantonese to efficiently use limited resources and survey effectiveness (Churchill & Iacobucci, 2005, p.213). Based on the above, we finally defined the interest population as general Chinese consumers living in Hong Kong aged 18 or above.

A sampling frame is a list of population elements from which we draw the actual sample. However, obtaining a list of general Chinese consumers is doubtful, as defined above for this study. Churchill and Iacobucci (2005, p.324) contend that researchers can develop an appropriate sampling frame when such a list is unavailable.

Hong Kong is a world shopping paradise, and shopping malls are one of the most popular places where Hong Kong consumers like to visit and shop. On top of diverse and comprehensive product ranges available in shopping malls, their proximity to residential areas is another reason consumers want to visit them. Therefore, Hong Kong shopping malls represent an appropriate sampling frame to locate target consumers for investigation. The following explains how we selected targeted shopping malls and respondents for interviews in two steps.

1. Using a multi-stage, stratified sampling technique, we divided Hong Kong into six strata of different social-economic profiles. Then, eight shopping malls for the formal survey were selected from these six strata using a random sampling technique.

2. We drew target respondents at the entrance of shopping malls. As the entrance is public, conducting a research interview outside a shopping mall is allowed. It is impossible to obtain a list of customers for selected shopping malls. We adopted a systematic sampling to select target respondents. We carefully counted the consumer traffic before the fieldwork in each chosen mall. Based on traffic and the required sample size of each shopping mall, we calculated the number of passing consumers needed to draw each target respondent. For example, a mall may have a traffic flow of 1,000 consumers in two hours during the interviews. If the interview takes 15 minutes to finish, a maximum of eight interviews could finish in two hours. Then the probability of selecting a target respondent is known with prior knowledge of traffic. Also, to avoid selection bias, the interviewers were instructed to count each tenth passing consumer before selecting the next target respondent.

Two independent samples, namely the development and validation samples, were collected over two weeks. The successful response rates were 11.6% and 19.8%, respectively. We have four considerations for this response rate. First, all selected locations were at busy entrances of shopping malls, where most people were rushing in and out. Second, this survey adopted a systematic sampling technique. The interviewers counted on-site traffic and only approached a predesignated number of passers-by. They were not allowed to approach potential respondents who looked approachable or available, as would occur in convenience sampling. Third, the incentive to the respondent was only a redemption coupon for a herbal drink. Further, a research agency shared that the response rate of street-intercept interviews in Hong Kong ranges from 10% to around 20%. Therefore, the response rates of the two samples are considered acceptable.

5.3 Scale Development Procedures

We have conceptualized MP as a construct for measuring consumers' perceptions of an organization's general marketing practices. The extensive literature review indicated that it has the following five underlying dimensions: Value, Authenticity, Legitimation, Experience, and Relationship. Following Churchill's suggestion (1979, p.66), a pool of items was initially derived from literature and further verified using focus group discussions and in-depth interviews. Besides, these items were subsequently reviewed by a panel of marketing experts for content validity. Appendix 1 provides a list of the final items of the five dimensions of MP.

Now we will explicate procedures for developing the scale for marketing practices (SMP) that we adopted from Churchill (1979) and Yau et al. ( ).

Step 1 – Domain Specification and Item Pool

The first step in scale development is to specify the construct (Churchill, 1979, p.67). The literature review suggested that MP is in marketing activities. Current literature also implies that MP has five dimensions. From the literature, initially, 28 items were generated for MP.

Step 2 – Item Modification

The second step was to modify items by adding other items, deleting original ones, and rephrasing old ones. As in-depth interviews are much better than focus groups in generating more ideas (Fern, 1982, p.11), two in-depth interviews were conducted with a marketing academic and a marketing practitioner to develop a more comprehensive pool of items. The interviewees were considered experts who possessed valuable insights into how consumers perceive marketing practices.

As discussed earlier, we conducted four focus group discussions, which can help rephrase items in a more easy-to-understand style and provide a more explicit meaning of proposed items from the general consumers' stance.

The combination of in-depth interviews and focus group discussions resulted in two new items for MP to include in the pretesting questionnaire. Further, we deleted one old item from MP from the pool due to vague and ambiguous meanings. In addition, seven items from MP had wording problems and were modified at the item modification stage. Finally, MP had 29 items for further content validation in step 3.

Step 3 – Content Validation

The third step of scale development is content validation. Two methods were adopted. The first was expert opinions, and the second was a pilot survey. Expert opinions involved inviting a panel of subject experts to validate items for MP. The panel consisted of four academics with

good experience in teaching marketing and ethics. We provided a table containing all the generated items in rows and corresponding dimensions in columns. We requested experts to match each developed item to the dimension construct it belonged to. In this exercise, if three-panel members (75%) sorted and categorized an item into a particular dimension, we would consider this item to represent the dimension. We asked panel members to provide feedback for items that failed to describe a specific dimension. We would revise their wording or even content. Then, including both revised- and non-revised items, we put them together in the same format and sent them to the panel members again for matching. After several modifications, we might delete these items that consistently failed to represent a particular dimension. Besides, if a dimension did not have any items left after item deletion, the dimension would also be deleted. After four rounds, the matching automatically stopped when we found no change to the items. Finally, after validation by expert opinions, MP had 29 items, respectively. This vital step of content validity checking was considered critical in developing a new and valid scale.

We also examined the face validity of items through a pilot survey with a sample size of 75 students from two Hong Kong universities. After the pilot survey, we checked with some respondents about their comments regarding the clarity of item meanings. Finally, we dropped four items from MP due to clarity issues. This step left MP with 25 items for further testing in the formal survey.

Step 4 – Scale Purification: Item Analysis

After vigorous qualitative inspection of face and content validity in steps 2 and 3, we further purified the scale items by an independent sample in a formal survey called the validation sample. The final sample size of the first sample was 1, which was considered good enough for normal distribution and statistical inferences. The sample was sorted and divided into four quartiles. For each item, the first and fourth quartiles' mean values were compared by a two-independent-sample t-test using the Statistical Package for Social Science (SPSS v.21). A statistically significant difference between the mean values implies that the item can measure people of different opinions. Therefore the item will be kept in the item pool for that construct.

On the contrary, if we find no significant difference, all respondents rated the item the same, so we will discard it. As such, item analysis serves to screen out items that are not valid for measuring different opinions. Table 2 shows the test results that all 25 items from MP were statistically significant and reflected diverse opinions. As such, we kept all items on the scales.

Step 5 – Reliability Assessment

We examined the items to see if they belonged to the same construct. In other words, we checked the uni-dimensionality of the construct. If all items can explain most of the variation as they are supposed to, they are internally consistent. However, consider an item's contribution to variance is low. In that case, it suggests that it is not an excellent indicator to explain the construct's variation. Therefore, we would consider deleting that item. Three analytical methods may measure internal consistency, Cronbach's alpha, composite reliability, and item-to-total correlation. While the alpha coefficient and composite reliability threshold are 0.70 for an established scale, internal consistency coefficients of 0.50 or better are acceptable for a newly developed scale (Nunnally, 1978, p.245). The item-to-total correlation can imply which items are weak in contributing to the explained variance. For a new scale, Hair et al. (2014) suggest deleting fragile items with a coefficient lower than 0.4.

Since MP is a multidimensional scale, we examine its overall reliability and the reliability of all dimensions. Table 3 shows a summary of the reliability test results for MP.

We assessed the overall reliability of the scale by split-half analysis. As shown in Table 52, the Cronbach's alphas for split-half by cases are 0.964 and 0.960, whereas those for split-half by items are 0.928 and 0.952. As all indicators exceed the required threshold value of 0.7 to be a reliable construct, MP's scale is considered a measurement scale with excellent reliability.

Apart from the overall reliability, we also assessed each dimension's reliability.

Value As shown in Table 2, Cronbach's alpha is 0.91, higher than 0.7, suggesting that all value component items have high common variance and are internally consistent. In addition, the item-to-total correlation coefficients of the five items range from 0.72 to 0.88, and all are greater than 0.5, signifying that all items are strongly correlated. Therefore, we did not delete any items.

Authenticity As shown in Table 2, Cronbach's alpha is 0.90, which is higher than the threshold of 0.7, suggesting that all items of the

authenticity component have high common variance and are internally consistent. In addition, the item-to-total correlation coefficients of the five items range from 0.69 to 0.83, and all are greater than 0.5. Thus, authenticity has its constituent items positively correlated, and therefore, we did not delete any item.

Legitimation   Similarly, Cronbach's alpha is 0.88, larger than the threshold of 0.7, suggesting that all the authenticity component items possess a high common variance and are internally consistent. The item-to-total correlation coefficients of the five items range from 0.67 to 0.74, and all are greater than 0.5. Thus, all items of this component are strongly correlated with high reliability. We did not delete any item due to low item-to-total correlation and reliability.

Experience   The Cronbach's alpha of this component is 0.94, more significant than 0.7, indicating that all the experience component items are internally consistent. In addition, the item-to-total correlation coefficients of the five items range from 0.74 to 0.90, and all are greater than 0.5, suggesting that component items are strongly correlated. As such, we did not delete any item.

Relationship   Similar to the above four components has Cronbach's alpha (0.91) greater than 0.7. The item-to-total correlation coefficients of the five items range from 0.58 to 0.92, all larger than 0.5. Hence, we did not delete any item.

Step 6 – Dimensionality Assessment

Dimensionality, also known as the factor structure, is examined in step 6. The dimensionality or factor structure means whether the items best fit the scale's dimension, as proposed in the measurement model. We used exploratory factor analysis (EFA) with the principal component method to assess MP's dimensionality by testing if the 25 items best fit the five proposed dimensions. The assessment also examined if those items fitted four or six dimensions to identify the best-fit scenario. Finally, the assessment results suggested that MP is a five-dimensional construct.

Table 4 shows the results of EFA for MP in five dimensions. Again, the eigenvalues and variance explained by each component (after rotation) within respective scales are pretty close, which implies that all components within the construct carry similar weight or contribution to the construct, which is a good sign for a multidimensional scale.

Besides, we tested the scale with four and six dimensions using EFA. In a four-dimension EFA, we found too many items loaded on some components. On the contrary, we found some components not loaded with sufficient items in a six-dimension solution. Therefore, we confirmed that the scale for MP is five-dimensional.

Step 7 – Validity Assessment

Using another independent sample is an ideal way of validity assessment (Churchill, 1979, p.69). The following five types of validity: face validity, construct validity, convergent validity, discriminant validity, and nomological validity, will be assessed by a validation sample of 268 respondents as follows (Hair et al., 2014).

1. Face validity is also known as content validity. Both terms refer to the consistency of meaning between items and construct. We have examined the face validity or content validity through steps 1 to 3.

2. Construct Validity

   Construct validity means the extent to which its corresponding items represent a construct. We have used the following two measures to assess it: 1) the size of loadings of indicators and 2) their statistical significance. When loadings of all indicators are above 0.7 and statistically significant, we consider the measurement model having construct validity (Hair et al., 2014, p.103).

   In the case of MP, it measures the exploratory relationship between items and their corresponding dimensions and the exploratory relationship between dimensions and MP's concept. If the overall exploratory relationship can be confirmed, construct validity is prevalent.

   As shown in Figure 5, MP has 23 items grouped into five components. All loadings of the 23 items are substantial (higher than 0.5) and statistically significant (p<0.05). Furthermore, path coefficients between the five components and the MP construct are substantial (>0.6) and statistically significant (p<0.05), construct validity of the scale seems established.

3. Convergent validity means the extent to which items of a specific construct converge or share a high proportion of variance (Hair et al., 2014). The following three analytical methods examined the convergent validity of the construct (MP): 1) composite reliability, 2) factor loadings, and 3) average variance extraction (AVE).

Composite reliability measures internal consistency among all items of a construct. A value from 0.6-0.7 is a commonly accepted threshold value in composite reliability. Composite reliability is considered satisfactory if the value is from 0.7-0.9. However, a value over 0.95 is not desirable (Hair et al. 2014, p.102). The item loading refers to outer-loadings in PLS-SEM, and 0.708 or higher is considered acceptable (Hair et al. 2014, p.102). As 0.7 is close to 0.708, most scholars accept 0.7 as an acceptable threshold value in item loading. Finally, AVE refers to the average variance shared among the indicators. We calculated it by dividing the total variance of all construct indicators by the total number of indicators in question. As expected, the total variance shared within a construct's indicators is larger than the total variance shared outside these indicators for a convergent construct. The rule of thumb is that AVE is usually more substantial than 0.5 (Hair et al., 2014, p.103).

For MP, composite reliabilities of the five components of MP ranging from 0.840 to 0.940 (all greater than 0.7) provide empirical support that MP has convergent validity.

Table 8 shows the loadings of items to their corresponding latent variables in MP. The basic guideline is that all item loadings must be statistically significant (Hair et al., 2014). Besides, the item will be deleted for an item with loading of less than 0.4. On the contrary, the item will be retained for an item with loading above 0.707. However, for an item with a loading between 0.4 and 0.7, the item is considered for retention to improve the construct validity or composite reliability. Also, an item loading larger than 0.6 can be accepted for a new scale.

Table 8 shows that all values of item loading for MP are higher than the threshold of 0.7. Thus, the scale has convergent validity.

AVE is the average variance contributed by all the items of a construct. We get it by summing the square of factor loadings of all items belonging to the construct. Then the total sum is divided by the total number of items. Alternatively, we calculated it by squaring the diagonal value on the Fornell-Larcker criterion matrix. The AVE threshold is 0.5 or higher, meaning that the total variance explained by all the construct items is larger than the variances

contributed to other constructs, a characteristic of convergent validity. The AVEs of all MP components were higher than 0.5, suggesting that MP also shows convergent validity.

We conclude that MP has convergent validity according to the three measures for assessing convergent validity.

4. Discriminant validity means the extent to which a construct is genuinely distinct from other constructs. This article assessed it by employing the following methods: 1) cross-loading items and 2) the Fornell-Larcker criterion, available in SmartPls 3.2.9. Cross-loading of an item refers to the loading of an item on other constructs. In general, we expect that the loading (also known as outer loading in PLS-SEM) on the associated construct is more substantial than its loadings on other constructs. Otherwise, we consider a discriminant validity problem present (Hair et al., 2014, p.105). Fornell-Larcker criterion is a second and more conservative measure assessing discriminant validity. It compares the square root of AVE values with latent variable correlations. When all diagonal values are higher than off-diagonal values, we consider that discriminant validity is present (Hair et al., 2014, p.105).

.For MP, each dimension is also a construct measured by dimension items. The five dimensions or constructs are considered distinct when their variance is larger than those between them. The total variance extracted (AVE) measures the total variance within the construct. In contrast, the squared inter-construct correlation estimate (SIC) measures the total variance between constructs. This study observes that the AVE is larger than the SIC, which provides sufficient evidence to support the two constructs' discriminant validity.

We used the Fornell-Larcker criterion matrix to assess MP's discriminant validity, which we obtained from running SmartPls 3.2.9. A Fornell-Larcker criterion matrix consists of two sets of values: the first set is on the diagonal of the matrix, which we derive from the square root of the AVE, and the second set of values contains those off-the-diagonal values that represent correlations between constructs. We conclude that MP has discriminant validity when all diagonal values are larger than off-diagonal values.

Table 6 shows that the diagonal values are higher than those of the off-diagonal. Take the second column as an example. The component, Value, has a square-rooted AVE value of 0.859, higher than all values in that column. These results signify that there exists a difference between Value and other components.

Another way to assess discriminant validity is through the use of cross-loadings. Table 7 shows that all item loadings of a component are higher than all cross-loadings on other components. For example, item b2_1 belongs to Value. Its loading on dissemblance is 0.823, which is higher than its loading on all other constructs (b2_1 on authenticity is 0.566; b2_1 on legitimation is 0.636; b2_1 on experience is 0.586, and b2_1 on a relationship is 0.461). As such, we consider MP having discriminant validity, as cross-loadings of all items are smaller than the loadings on corresponding components.

5. Nomological validity refers to the degree that the summated scale makes accurate predictions of other concepts in a theoretically based model (Hair et al., 2006, p.138). It aims to check if correlations between constructs exist in a way suggested by a theoretical relationship. We further divided it into two types. The first is concurrent validity, and the second is predictive validity. Both concurrent and predictive validity means a correlation between a testing construct and another established construct, where the correlation should have been expected or suggested by theory. In this article, we adopt the second approach, and therefore we examined the predictive validity of MP. We postulated that MP has a causal relationship with trust, an endogenous (dependent) construct. Adapted from Tsai et al. (2010, p.280), trust is a scale consisting of seven items and a Cronbach's alpha coefficient of 0.899. Employing an exploratory factor analysis, we found that trust demonstrates a good KMO at 0.844, with a p-value of 0.000.

Furthermore, the first component explains over 76% of the total variance. Thus, the adapted scale Trust was considered unidimensional. Similarly, we also considered the scale valid, as there was no change in its factor structure.

We examine the nomological validity of the MP scale by examining the correlation between MP and Trust. Thus, summing up all scale items, we obtained the scores of MP and Trust. Next, we ran a correlation analysis and then obtained their correlation coefficient (r = 0.864), significant at p<0.001. Finally, we conclude that MP has nomological validity.

6. Cross-Sample Validation

Table 11 compares the path coefficients of the five components to the construct MP obtained by randomly splitting the validation sample into two halves. It reveals that coefficDiscussionamples 1 and 2 are substantial (>0.6) and statistically significant (p<.000). Also, differences in coefficients between the same components (e.g., inconsistency in sample 1 [0.803] vs. inconsistency in sample 2 [0.789]) are not statistically significant as p-values for sample 1 vs. sample 2 are higher than 0.05. Finally, we found that the magnitudes of loading obtained from the two samples are not statistically different. Therefore, they can be of the same magnitude. These results suggest the measurement model is stable, as the same empirical evidence can be obtained even when we randomly split the validation sample into two halves.

Table 5-22 shows similar comparison results for the construct MP. Thus, we consider MP stable across different samples.

6   Conclusion, Implications, and Directions for future research

6.1 Conclusion

At the beginning of the article, we set forth its objectives are to develop a typology of MP and then construct a scale. Our findings indicate that MP also has five dimensions: 1) Value; 2) Authenticity; 3) Legitimation; 4) Experience; and 5) Relationship. Furthermore, four to five items operationalize each dimension. In the previous section, we found these items reliable and valid of the corresponding dimensions, representing MP's construct.

Following Churchill's and DeVellis' recommendations in scale development, we adopted two independent samples to develop this new scale (Churchill, 1979; DeVellis, 2003; Yau et al., ()). We used the first sample to assess the reliability and dimensionality and the second to examine the scale's validity using the PLS-SEM technique. All assessments were deemed satisfactory and acceptable.

6.2 Implications

We designed MPS to measure consumers' perception of how well marketing practices perform. The scale has the acronym VALER, standing for the five dimensions of value, authenticity, legitimation, experience, and

relationship. These five dimensions reflect how a consumer generally looks at marketing practices. Thus, the scale is a valuable marketing tool to gauge the favourability of marketing practices in consumers' eyes. Each dimension also has four to five items, and 23 items are on the scale. The Cronbach's alphas for the five dimensions range from 0.867 to 0.947.

The concept of marketing practices has raised researchers' interest in recent years (Carter & Curry 2010; Crutsinger, Knight & Kim 2010; Dibb, Simões & Wensley 2014; Phillips & Hallman 2013; Sheth 2011). Their discussions, however, mainly concentrated on two perspectives: 1) Theoretical differences between marketing and marketing activities from the marketers' point of view; and 2) The detrimental role of marketing malpractices in the marketplace. The term "marketing practices" has been used casually in the extant literature without strictly and conceptually defining it. Almost no scholars have criticized the concept of MP for being incomplete or incomprehensive. Not capturing the full diversity of marketing practices leads to a situation where marketing practices are challenging to measure when treated as a construct. This article re-specified the domain of Marketing Practices as a construct and then conceptualized it from existing literature on marketing into dimensions. The new multidimensional scale of the MP, which consists of the five VALER dimensions, was thus developed, adding paramount value to the marketing literature.

6.3 Limitations

This paper is a pioneering work investigating MP's nature from a marketing perspective in a restaurant setting. However, the findings of this study tend to be indicative rather than conclusive. Although the analysis in this article has followed rigorous research design principles and administered stringent procedures for the highest accuracy, it is still subject to some unavoidable limitations inherent in the research design. Therefore, we want to highlight three limitations to readers to avoid potential bias.

1. Respondents are limited to Chinese in Hong Kong

As aforementioned, the respondents are Chinese in Hong Kong. Even though these Chinese tend to have unique East-meets-West beliefs and values, which are particularly suitable for a starting point in studying hypocrisy in this thesis, the diversity of culture is still considered insufficient for a universal concept like hypocrisy. We will address this in the Direction of future research.

2. Sample Size

The final sample sizes of the development and validation samples were 151 and 268, respectively. Based on the predetermined coefficient of variation obtained from the pilot survey, allowable errors for the two samples are 5.26% and 5.15%, respectively, a level comparable to most business research. Thus, although the sample size is considered adequate for this study, it would still be better off with more consistent results if we could boost the sample size to have allowable errors below 4%.

3. Social Desirability Bias

Social desirability bias refers to bias coming from respondents' tendency to deny socially undesirable traits and behaviors and to admit socially desirable ones (Randall & Fernandes 1991).

In the pilot survey, we adopted the 13-item short version of the Marlowe-Crowne Social Desirability Scale (MCSD, usually termed Form C. (Crowne & Marlowe, 1960) developed by Reynolds (1982), to assess the response bias of this study. On a scale of 1 to 6, the score measured by Form C is 3.671, being on the high side of the scale but acceptable. The higher the value, the more severe the social desirability bias is. Therefore, we should take the following precautionary actions to minimize the bias further.

First, we emphasize to respondents the survey's anonymity design before the start of the intercept interview. The higher the anonymity level, the more the bias can be reduced.

Second, while the interviewers were supposed to record all responses on the questionnaire, they were instructed to ask respondents to write down their responses to the 29 items of the MP scale by themselves. As a result, respondents would experience a higher anonymity level as the interviewers had no idea their responses.

Even though we cannot eliminate social desirability, the measures have significantly reduced the bias.

6.4 Directions for Future Research

We have three recommendations for researchers who would like to understand marketing practices further.

First, replicate the Study in Other Places such as Taiwan and mainland China. This paper bases the conceptualization of marketing practices on a systematic and comprehensive review of marketing practices from two different perspectives: marketers' and consumers'. Furthermore, we drew the conceptualization from diverse sources from scholars in the West and Chinese thinkers. The scale for MP can be considered entirely suitable and applicable to consumers in the West or East. Therefore, the scale can be tested in the UK, USA, and Australia. However, the dominating culture and values are Western

or locations in the East, such as Taiwan and mainland China, where eastern culture prevails. Thus, considering the close distance and ease of administration of surveys, it warrants a separate and independent study using Chinese samples in Taiwan and mainland China, respectively, to further investigate this measurement model. Doing so could significantly enhance the knowledge of MP from a different cultural perspective. Furthermore, we can extend the study to other places with more Western cultures and populations when the scale is successfully tested.

Second, enlarge Sample Sizes. Even though the sample sizes were slightly small, as discussed in the limitations section, the overall research design is considered vigilant and stringent. The new scale development in this study also followed strong procedural recommendations as we used two independent samples for development and validation (Churchill, 1979; DeVellis, 2003; Yau et al.). As we have validated the scale, it seems that a single sample would be enough in most other follow-up studies. As such, we recommend a larger sample size leading to a smaller allowable error of 4% for future studies relating to marketing practices.

Third, examine Marketing Practices in Other Consumer Consumption Settings

This study has developed and validated a new scale on Marketing Practices (MP) to measure consumers' general perception towards marketing practices. It presents the first scale that reflects how consumers perceive marketing practices from a total perspective, rather than looking into specific functions or marketing areas such as pricing, product, channel, or promotion individually. As we developed the scale in a consumer product setting (consumption in a restaurant), we need to examine if the MP scale could be valid in all other consumer consumption settings. Currently, the weight of VALER dimensions is assumed to be equal, but this could be different in other consumer consumption setting such as online versus offline purchases, luxury brands vs. commodity items. Therefore, it would be good for the MPS to be applied in other consumer consumption settings to understand further insights into the weight of different VALER dimensions.

Figure 2. Scale Development Procedures (Adapted from Churchill (1979) and Yau et al. ())
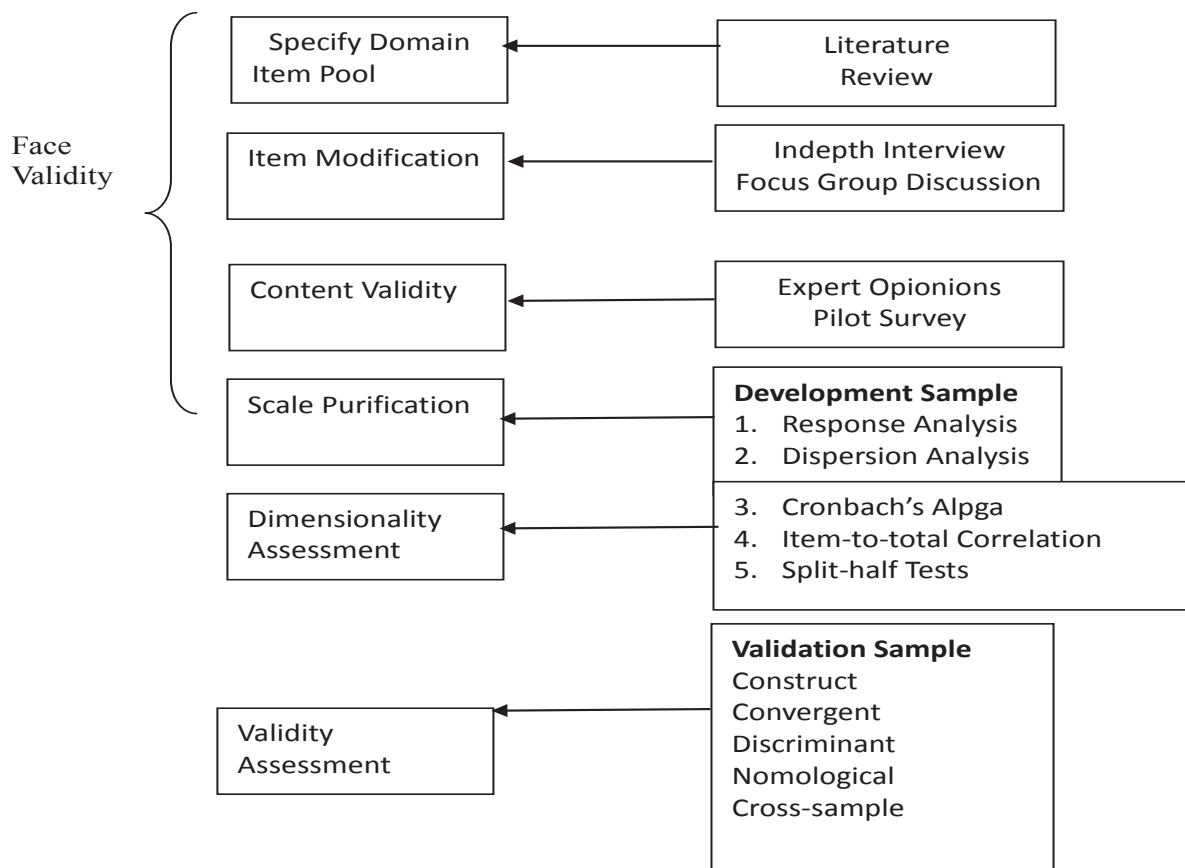
Table 2, Data Collection by Shopping Malls

Strata	Shopping Malls	Sample 1	Sample 2	Total
Upper Upper	Central	2	3	5
Lower Upper	Kornhill	7	11	18
Upper Middle	Prudential	22	37	59
Lower Middle	Tai Wai	24	40	64
	Tai Yau	24	40	64
Upper Lower	Kai Tin	38	65	103
	Yue Man	37	64	101
Lower Lower	Wong Tai Sin	14	24	38
		168	284	452

Table 5-22 MP – Summary of Coefficient Comparison by Split-half Validation Samples

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Appendix 1. Items of Dimensions of Marketing Practices (MP)

Value

This restaurant offers "a price affordable to most consumers."

This restaurant offers "high-quality products and services."

This restaurant offers "products and services with excellent value for money."

This restaurant offers "valuable products and services to me."

This restaurant offers "quality products and services at a low price."

Authenticity

This restaurant provides "clear and complete information."

This restaurant provides "true information."

This restaurant shows "sincerity to customers."

This restaurant offers "genuine products."

This restaurant "does precisely what it proclaims."

Legitimation

This restaurant's practices are "in the public interest."

This restaurant's practices "fulfill social responsibility."

This restaurant's practices are "reasonable."

This restaurant's practices "meet consumers' expectations."

This restaurant's practices "meet the Consumer Council's expectations.

Relationship

This restaurant offers "discount privileges to old customers."

It made me have a more favorable impression of the restaurant owner.

It enhanced my relationship with the restaurant owner.

It narrows the gap between the restaurant owner and me.

It enhanced the trust between the restaurant owner and me.

Experience

This restaurant "gave me a good experience" during the meal."

This restaurant gave me a "comfortable feeling" after the meal."

This restaurant brought me a happy experience during the meal."

This restaurant brought me an enjoyable experience during the meal."

This restaurant "boosted my mood" during the meal."

Table 3. T-test Results – Marketing Practices (MP)

Item	N	Upper		Lower		Mean Difference	t-value	Sign. (2-tailed)
		Mean	Std. Deviation	Mean	Std. Deviation			
b1	38	1.000	0.000	3.632	1.025	-2.632	-15.833	0.00
b2	38	1.000	0.000	4.789	0.811	-3.790	-28.816	0.00
b3	38	1.000	0.000	3.605	1.028	-2.605	-15.627	0.00
b4	38	1.000	0.000	3.947	0.957	-2.947	-18.983	0.00
b5	38	1.000	0.000	2.921	0.882	-1.921	-13.431	0.00
b6	38	1.000	0.000	4.632	1.076	-3.632	-20.804	0.00
b7	38	1.000	0.000	4.158	1.104	3.158	-17.641	0.00
b8	38	1.000	0.000	4.211	0.905	-3.211	-21.864	0.00
b9	38	1.000	0.000	4.342	0.966	-3.342	-21.319	0.00
b10	38	1.000	0.000	4.105	0.924	-3.105	-20.720	0.00
b12	38	1.000	0.000	3.579	0.758	-2.579	-20.971	0.00
b13	38	1.000	0.000	3.342	0.669	-2.342	-21.586	0.00
b14	38	1.000	0.000	3.947	0.837	-2.947	-21.718	0.00
b15	38	1.000	0.000	3.711	0.924	-2.711	-18.019	0.00
b16	38	1.000	0.000	3.579	0.793	-2.579	-20.049	0.00
b17	38	1.000	0.000	4.632	0.942	-3.632	-23.761	0.00
b18	38	1.000	0.000	3.737	0.978	-2.737	-17.258	0.00
b19	38	1.000	0.000	3.711	0.835	-2.711	-20.003	0.00
b20	38	1.000	0.000	3.816	1.010	-2.816	-17.193	0.00
b21	38	1.000	0.000	3.474	0.951	-2.474	-16.032	0.00
b23	38	1.000	0.000	4.579	1.040	-3.579	-21.984	0.00
b24	38	1.000	0.000	4.447	0.978	-3.447	-21.728	0.00
b25	38	1.000	0.000	4.053	1.012	-3.053	-18.594	0.00
b26	38	1.000	0.000	4.211	1.044	-3.211	-18.960	0.00
b27	38	1.000	0.000	4.026	1.026	-3.026	-18.177	0.00

Table 4. Summary of Reliability Test Results for MP

		I Corrected Item-Total Correlation n = 151 r	II Cronbach's Alpha n = 151 α
Whole Scale			
III Split-half by Cases			
	Sample 1 (n = 77)		0.964
	Sample 2 (n = 74)		0.960
IV Split-scale by Items			
	Sub-scale 1 (n = 151, No of items 12)		0.928
	Sub-scale 2 (n = 151, No of items 11)		0.952
Dimensions			
	Value		0.867
	Items		
	b2	.701	
	b3	.798	
	b4	.761	
	b5	.689	
	Authenticity		0.904
	Items		
	b6	.676	
	b7	.834	
	b8	.793	
	b9	.746	
	b10	.763	
	Legitimation		0.899
	Items		
	b12	.721	
	b13	.710	
	b14	.782	
	b15	.799	
	b16	.747	
	Relationship		0.938
	Items		
	b18	.813	
	b19	.910	
	b20	.816	
	b21	.879	
	Experience		0.947
	Items		
	b23	.686	
	b24	.889	
	b25	.909	
	b26	.918	
	b27	.890	

Table 5. Exploratory Factor Analysis – Marketing Practices (MP)

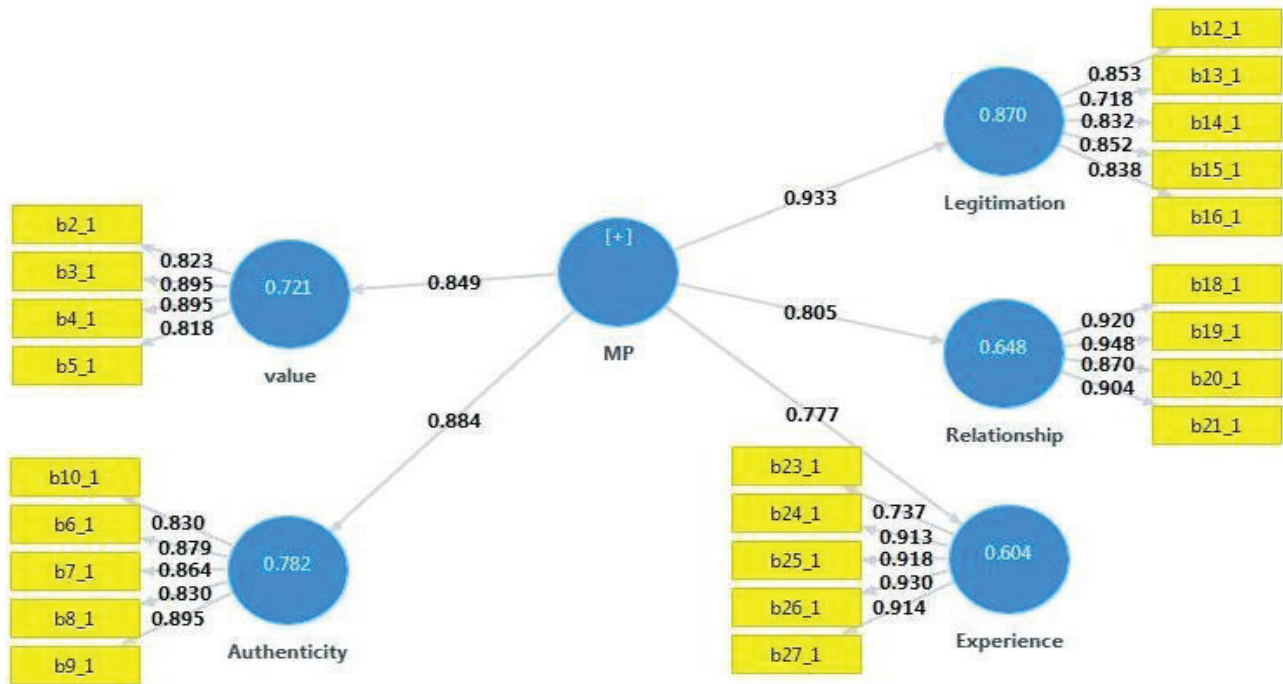**Table 6. Fornell-Larcker Criterion Matrix for Marketing Practices (MP)**

	Value	Authenticity	Legitimation	Experiences	Relationship
Value	**0.859**				
Authenticity	0.664	**0.860**			
Legitimation	0.752	0.792	**0.820**		
Experiences	0.651	0.631	0.734	**0.885**	
Relationship	0.559	0.582	0.683	0.716	**0.911**

Table 7. Cross-Loadings of Items in Marketing Practices (MP)

Dimension	Value	Authenticity	Legitimation	Experience	Relationship
b2_1	**0.823**	0.566	0.636	0.586	0.461
b3_1	**0.895**	0.585	0.675	0.555	0.492
b4_1	**0.895**	0.616	0.693	0.612	0.512
b5_1	**0.818**	0.510	0.573	0.475	0.451
b6_1	0.516	**0.879**	0.662	0.458	0.418
b7_1	0.480	**0.864**	0.624	0.450	0.417
b8_1	0.576	**0.830**	0.695	0.565	0.579
b9_1	0.604	**0.895**	0.693	0.532	0.512
b10_1	0.662	**0.830**	0.721	0.613	0.559
b12_1	0.635	0.634	**0.853**	0.623	0.549
b13_1	0.555	0.534	**0.718**	0.482	0.467
b14_1	0.609	0.722	**0.832**	0.621	0.567
b15_1	0.661	0.687	**0.852**	0.669	0.636
b16_1	0.620	0.657	**0.838**	0.600	0.571
b18_1	0.566	0.553	0.651	0.714	0.920
b19_1	0.538	0.526	0.662	0.666	0.948
b20_1	0.434	0.483	0.550	0.577	0.870
b21_1	0.488	0.556	0.621	0.643	0.904
b23_1	0.444	0.437	0.490	**0.737**	0.510
b24_1	0.568	0.534	0.646	**0.913**	0.600
b25_1	0.564	0.557	0.680	**0.918**	0.719
b26_1	0.631	0.557	0.699	**0.930**	0.660
b27_1	0.650	0.612	0.698	**0.914**	0.660

Table 8. Cross-sample Validation.

	Path Coefficient (Sample 1)	p-Value (Sample 1)	Path Coefficient (Sample 2)	p-Value (Sample 2)	Path Coefficient Diff. (|Sample1-Sample2|)-	p-Value (Sample1 – Sample2)
MP->Authenticity	0.877	0.000	0.892	0.000	0.015	0.681
MP->Experience	0.780	0.000	0.781	0.000	0.001	0.507
MP->Legitimation	0.939	0.000	0.929	0.000	0.010	0.270
MP->Relationship	0.810	0.000	0.805	0.000	0.006	0.464
MP->Value	0.868	0.000	0.831	0.000	0.037	0.221

Table 9. Nomological Validity Analysis by Dimensions of Constructs (n=268)

Construct	Path Coefficient
Nomological Measure (Endogenous Construct)	Trust*
Dimensions of Marketing Practices (MP)	
Value	0.681**
Authenticity	0.787**
Legitimation	0.820**
Relationship	0.721**
Experiences	0.690**

*Trust was measured by seven items on a 6-point scale, where 1= strongly disagree, and 6=strongly agree

**p< 0.001 (two-tailed)

Creating a New Niche in the e-Learning Business: the case of Class 101 in Korea

Kamalova Zukhra[a], Namjae Cho[b]
a MS Student, Hanyang University
17 Haeng Dang -Dong, Seong Dong-Gu, Seoul 133-791, Korea
Tel: +82-2-2220-4142, E-mail: zkamalova97@gmail.com

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

e-Learning industry has become a highly competitive and rapidly growing market. In the highly competitive e-Learning market, some players find a way to prosper based on their technology, reputation or vast amount of financial resources. Class101 is a start-up in Korea which interestingly found its way to success despite of the lack of reputation, resource, and superb technology. We analyzed the success of this company by focusing on their creation of noble niche in the competitive e-Learning market.

1. Overview of E-Learning Industry

Edtech(education technology) or e-learning is the combination of IT tools and educational practices aimed at facilitating and enhancing learning. The global edtech market is a diverse and rapidly growing industry with a large runway across the business lifecycle, from early-stage startups and middle-market companies to publicly traded companies. Online education has some significant benefits for the students. First of all, they have a 24/7 access to learning materials, they can study whenever is suitable to them and wherever they want. Online education also fosters self-learning and time management, the students can learn how to manage their time in a most efficient way, which is very helpful for the future. Moreover, Edtech programs and services often offer personalized educational experience, that can be customized to students' needs.

E-learning offers some benefits for the teachers and professors as well. For instance, they can use automated grading software, that tracks students' attendance and keeps track of their grades automatically, making the process of final grading faster and easier. Online Education is also good for the environment, since all the information is shared on the screens of electronic devices and there is no need to print out countless studying materials for the class. Online tests and questionaries can also help with better student's skills and needs assessment.

In 2019 global E-Learning market size was around USD 200 billion, but with the COVID-19 outbreak and the forced transition to remote working and studying in 2020, global E-Learning market size surpassed USD 250 billion, which is 25% higher compared to 2019. In the future this trend is likely to continue, and the Edtech market size is projected to reach a size of USD 375 Billion by 2026, 50% up the levels of 2020.

The largest segment of the global e-learning market is Online e-learning with the following Mobile e-learning and LMS. From the diagram we can see that Virtual classroom segment is expected to increase a lot by 2026 and reach the size of LMS market.

According to the study by the Open University, the process of producing and providing e-learning courses consumes 90% less energy and produces 85% fewer CO_2 emissions per person than face-to-face training.

Size of the global e-learning market in 2019 and 2026, by segment(in million USD)

Source: Statista (2022). Global e-learning market *size by segment 2019-2026. Retrieved from https://www.statista.*

com/statistics/1130331/e-learning-market-size-segment-worldwide//

Traditionally E-learning industry has been dominated by education system institutions, and the largest companies in the E-learning market are mostly represented by e-learning software developers and service providers. According to Ken Research, the biggest companies in the Edtech industry are Blackboard, Adobe, Skillsoft Corporation, Citrix Education, Apollo Education Group etc. These companies mostly provide solutions for universities, schools and big companies, which is the biggest part of the e-learning market. Meanwhile, the Korean start-up Class101 when entering the e-learning market decided to focus on the niche online hobby education market. It was a very courageous decision taking into consideration that there are a lot of hobby related materials available online free of charge. But owing to the efficient business model and good marketing strategy the company managed to achieve a huge success in Korea and even go global in a very short time. Class101 discovered a gap in the market and offered the customers a new product that met their demand, which had been ignored by other companies before.

In South Korea Market size of online education in 2019 was estimated to be roughly 3.9 trillion South Korean won (USD 3,3 billion). On the diagram we can see that in the past years th
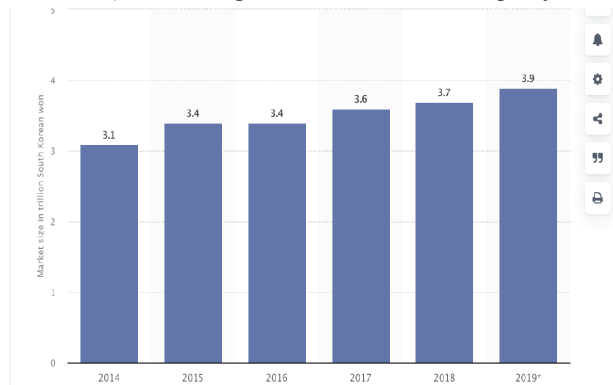
e average growth rate was around 5%. An accelerated growth is expected owing to the advent of technologies in the education sector, including artificial intelligence (AI), virtual reality (VR), and augmented reality (AR), as well as due to the COVID-19 outbreak, that has forced schools, universities, and companies to remote working and studying.

Market size of online education in South Korea from 2014 to 2019

(in trillion South Korean won)

Source: L.Yoon (2022). Market size of online education South Korea 2014-2019. Retrieved from https://www.statista.com/statistics/1184154/south-korea-online-education-market-size/

2. Class101: The case of a Korean e-Learning Start-up

2.1 Company Overview and Growth

Class 101 is the biggest online hobby platform in South Korea. It unites users who are willing to learn new hobbies or improve their skills in different categories, as well as creators who want to share their experience and teach things they are passionate about. It may resemble online streaming platforms such as YouTube, however it not only provides video materials, but it also offers full packages with delivered class kits, that contain all the necessary supplies, chosen by lecturers. The company also has a B2B subscription service for companies, special classes for kids and a «Signature» section on the website, which offers classes taught by famous professional creators.

Class101 vision is stated as «Building a world where everyone does what they truly love». They repeatedly mention that throughout their website and in the interviews. It does not only apply to their customers, who can enjoy hobbies that they «truly love» using Class101 services. It also applies to creators who can share their experience on Class101 platform, doing things they are passionate about, and Class101 employees who enjoy doing their job.

Company's mission contains three points:

• Help creators pursue what they love for a living and aid them every step of the way;

• Help everyone discover their talent and become the next generation of creators who inspire others;

Build a tight-knit community of creators with CLASS101.

Here is how they comment on their vision and mission and explain their meaning for the company:

«Through our success, we will pave the path to a new world and help everyone become part of our mission. As more people get a glimpse of the new world and join the 101 movement, the world will become a more colorful place full of diverse creators living the way they love. We work, challenge, and experiment every day striving for that future».

When hiring people Class101 first defined themselves to find perfect matches for their team. According to that definition, the right people for their company are kind, smart and ambitious. Kind and trustworthy, smart people who can produce definite results, and full of ambitions to grow with the company. In Class101 they believe that team members are the most important factor for a startup to succeed.

Another interesting fact about people in Class101 is that all the employees use informal way of talking in Korean, when they talk to each other, which is very unusual for Korean companies. In Class101 team age and job positions don't matter, everyone is equal. Team members use nicknames to address coworkers. One of the reasons for this way of communication is that the CEO of the company does not want employees to spend time on unnecessary formalities, she wants the communication to be as fast and quick as possible.

Class101 was established by graduates of Ulsan National Institute of Science and Technology. Founder and CEO of Class101 Ko Jiyeon and four other co-founders, established Class101 in 2018, which was pivoted from a tutoring service platform that was founded in 2015. When Class101 was being invented the developers wanted to find a new market that could be impactful. There were three decision-making criteria to find it. They asked themselves three questions:

- Can we prove our vision?

- Can we become customers of our own service?

- Is there no overwhelming competition in the market?

There were about ten business items that met all of these standards, among them, the best items were Class 101 tutoring platform and babysitter CCTV. Considering whether they can really enjoy themselves as customers by reflecting on the decision-making criteria between the two, the final decision was made with Class 101. Then they released the beta app right after a month. Releasing an app in such a short period of time required a lot of work and effort, but it payed off and the number of downloads of the beta app was much larger than they expected.

But even though people liked their app most of the customers didn't use it in a longterm period. Creator of the company came to the conclusion that the reason of this kind of customer's behavior is that the app is free of charge and the customers didn't loose anything if they just stopped using it.

To provide paid services, they had to check whether people were ready to pay for it, so they used Korean crowdfunding website Tumblbug. At that time, the team invited as content creator a barista from the cafe near the Ulsan Institute of Science and Technology (UNIST), where the members attended in the early days, and they filmed a lecture. They also prepared the lowest-priced preparation kit needed to make drip coffee.

They wanted the consumers of the content to really enjoy and love what they do while creating something of their own. Just in few days they were able to reach their founding target and the team realized that people were ready to pay if they could buy curated content and the supplies they need to listen to it at once. Next, they prepared the class of photographer Sihyun in the same format, which was also very successful.

In May 2018 Class101 published a leather workshop class by creator named Lamy Seoul and a British English class by creator named Korean Billy at the same time. These courses were a huge success for the company, and since then developers have been focusing on recruiting creators, who have their own fans, so that they could promote Class101 among them as well.

In late 2018 the Class101 team started growing rapidly and now there are more than 350 employees working in the company.

In 2019, the company raised a $10.3 million (12 billion won) Series A funding round led by SoftBank Ventures Asia along with Mirae Asset Venture Investment, KT Investment, Strong Ventures and SpringCamp. In September 2021 Class101 closed $25.8 million (30 billion won) Series B funding to accelerate its growth in South Korea, the U.S. and Japan. The Series B round was led by Goodwater Capital, with additional participation from previous backers Strong Ventures, KT Investment, Mirae Asset Capital and Klim Ventures. US-based Goodwater is a global investor that has backed several tech companies such as Facebook and Spotify. It also counts Korean giants Kakao, Coupang, and Danggeun Market as portfolio firms. Getting support from such a major investor was a big success for the company.

Class101 currently has more than 1.8 million active users and over 1,000 classes with many creators making an average of $5000USD in the first month alone and top creators making up to $100,000 USD or more, and KRW 50 billion (US$43 million) in cumulative Gross Transaction Volume. By July 2020 in one year Class101 got more that 111 thousand comments on their website, and almost 39.5 thousand purchases since the opening of global sales in 2019.

Financial statements of the company are not publicly available, but they do publish some graphic representation of the turnover trend, which shows a significant increase, especially in the periods after the third quarter of 2019, after the COVID-19 outbreak.
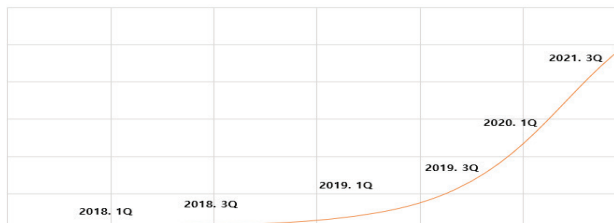
Graphic representation of the turnover increase (September 2021)

Source: Official Class101 recruiting web site: https://jobs.class101.net

2.2 Business Model of Class 101

1) Core value:

Class101 made it easier to start learning new hobbies by providing complete packages of video lectures with support and feedback by lecturers and with all the necessary supplies to follow along the classes. The users don't have to go through annoying process of researching the needed supplies for the class, choosing and buying them. The creators already did that for them and chose the best available options for decent prices.

Also, the courses are not created randomly, Class101 strives to offer only classes that are really needed. In order to do that the company first conducts a survey of demand and if the users are not interested in the course it is not going to be launched. Therefore the creators too don't waste their time and don't put unnecessary efforts into preparing classes that are not in demand. Class101's

business model can be graphically represented in the following form:
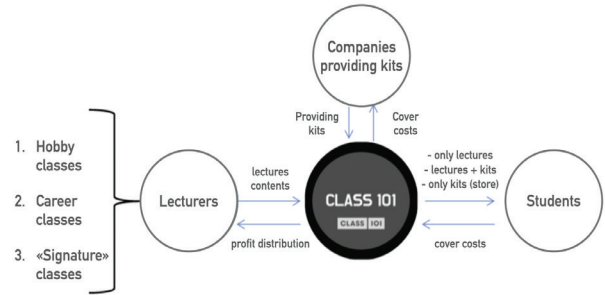
Source: Nam Daeil (2020). 101 Business Model Story (p.114), translated into English

2) Profit formula:

Basically, Class101 offers video lectures and class kit packages. But depending on the course and on the customers' needs they can buy only the lectures or only the items from the store.

The profits of the company or the ratio of each category in company's earnings are not publicly available, but according to the company, average creator's earnings for the first month is around US$5000.

3) Key resource:

The key resource of Class101 is that they are striving to provide classes that are really needed by many users, and offer high quality of lecture materials. When the business was just started, the platform was offering mainly content related to hobbies, but nowadays they also provide classes on career development with lectures on professional topics, and they created a separate category with lectures delivered by famous people. Thus, the company doesn't only focus on the existing categories and contents, but they do a regular research to learn about customers' needs and according to the results of that research they constantly offer new features and improvements to their service.

4) Core process:

As mentioned before, all the lectures can be launched only if they prove to be in demand after the survey is conducted. In order to encourage the users to participate in the surveys of demand, Class101 organizes special events and rewards actively participating users. Also, in case of content creators who are considering becoming lecturers in Class101, they have an access to information about the

demand in different categories, so they can check the state of their area of interest before they develop their ideas.

The process of creating a new class includes 4 stages. It starts with the «Campaign» stage, when Class101 team runs ads to attract at least 500 potential students, while creator promotes it to his/her own community. The next step is «Data Analysis», when Class101 producers utilize data from ads and surveys, and works together with the creator to put together the best lesson plan and pricing. The «Data Analysis» stage is followed by «Early Bird Sale», where customers can purchase the course with a discount before its release. Once a class reaches the early bird goal, creator begins working on the production with Class101 team. The last stage begins after the class opens. Creator uses Class101 community features to engage with the students and share his/her experience.

2.3 Competition

1) In Korea

On their website Class101 published a diagram showing a comparison of the turnover in Class101 and 3 other competitors from the same industry. There were no specific numbers or names of the companies, only rough graphic representation. According to the diagram, Class101's turnover is almost 3 times larger than its closest competitor's turnover.

Some of the competitors who are engaged in similar industry in the Korean market include such companies as Coloso, Hobbyful, Air Class etc. Both Class101 and Air Class have various classes on different topics, such as arts, sports, crafts and even business, whereas Hobbyful is focusing on traditional hobby classes such as art, crafts, etc., and Coloso is mainly focusing on digital art, graphic design and video editing. Both Class101 and Hobbyful offer materials for the hobbies delivered, but in case of Class101 this feature is more developed and better integrated into the system, since it is one of the main selling points of their products. Air Class and Coloso only offer video materials for their classes, but unlike Coloso, Air Class offers subtitles for their videos. As for mobile applications, only Class101 and Air Class offer them. Regarding other characteristics and features offered by the companies, Class101 allows its customers to choose whether they need a full package with video classes and class kits, only videos, or just the goods from the online store. Hobbyful stresses the philosophy that «engaging in hobbies makes everyday life beautiful,» and they provide material packages for some of their classes. Air Class offers their customers a course pause function, whereas Coloso provides unlimited access to the purchased lectures.

2) Abroad

Class101 has 3 websites: for Korean market in Korean language, for Japanese market in Japanese and for the US market in English. Their customers live in 72 different countries as of the end of July 2020. The platform is rapidly gaining worldwide attention. Class101 is now replicating their model to serve their global audience. Within just a few months, Class101 English site reached 3.7M visits and a 98.5% satisfaction rate.

On the global market main competitors of Class101 are Udemy and Skillshare. Both companies have a wide variety of different categories of classes, they offer video classes with lecture resources, and have mobile applications. Unlike Skillshare, Udemy offers informal certificates of course completion and provides contents in 17 different languages, including Korean, which makes it to the main global competitor of Class101. On the other hand, in Skillshare all the classes are available after subscription to the service, and there is a free trial period on premium membership, together with available scholarships for eligible users. As for the feedback, in Udemy questions can be answered either by contacting the instructor via direct message or checking previous Q&A's, while in Skillshare projects can be shared and discussed with the community.

2.4 Analysis of Competitive Strategy

Product

Class101 offers online classes in different categories, such as painting, drawing, handcraft, cooking, photography and video editing, music, sports, business, investments, languages, kids education, etc. But apart from that they provide optional class kits, which can be added to the cart when purchasing the video course, and then they can be delivered directly to the customers. Moreover, Class101 has an online store with products for hobbies and education. There are also educational services for companies. Depending on the chosen plan companies can buy online classes for their employees. They can choose

an option with one class a month, unlimited classes in one chosen category or unlimited classes in all categories.

2) Price

In general, prices in Class101 are higher compared to main competitors, but the company offers a lot of discounts, coupons and installment payment option. Also they have «Early bird» discounts and coupons for people who apply for course and make the payment before the class is launched.

3) Place

Class101 products are available on their website and applications for smartphones and Tablets. They have three main markets: Korea, Japan and US (international market), with separate websites for each market.

4) Promotion

The company is being actively promoted on social media platforms. Korean branch has a YouTube channel with 18,6 thousand subscribers, Instagram page with 135 thousand followers, Facebook page with almost 50 thousand followers, as well as Naver post and Naver blog pages.

In August 2021 famous Korean musician Park Jae Beom, also known as Jay Park, became a brand ambassador of Class101. He appeared in company's advertisements and SNS posts. In September Jay Park released his own course on the Class101 platform, which is available free of charge. In his video classes he shared his experience as a musician and producer and gave some advise on how to become successful.

Another way to promote their company was by introducing a course called «101GAME» inspired by the popular Netflix series «Squid Game». The class contains 4 lessons that teach users how to make Korean sweets called dalgona and separate an imprinted shape without breaking the candy, and how to fold a perfect paper tile and use it to play Korean traditional game ddakji. Both activities appeared in the «Squid Game» tv show and became popular among the viewers. Given the international interest in reenacting the games from the show, CLASS101 is presenting the "101GAME" class in the broadest-possible manner by offering it for free in three different languages (English, Korean, Japanese) on both its domestic and global platforms.

SWOT analysis result shows the summarized nature of class101's competition and strategic responses.

Strengths:

Online video classes offer flexible studying hours, which means students can study whenever and wherever they want.

There is a well organized optional purchase of the «all-in-one package» with necessary items and materials delivered to customers, so they do not have to search the necessary materials and tools themselves.

An opportunity to rewatch lectures or parts of them, which allows students to review parts which they couldn't understand several times and reach high levels of understanding the topic.

High quality of the lecture materials and user-friendly website, that is convenient to use.

Mobile applications for iOS and Android, which makes it easy to access the lectures anytime from anywhere.

Weaknesses:

There are complains that Class101 has a weak customer service for the US and Japan markets. They do not have a call center, only an online chatbot, that can not help with some specific problems, so there is no way to deal with urgent problems.

Homework feedback quality depends on the content creator and sometimes is too slow and not very detailed. Homework feedback quality is not being controlled by Class101.

Opportunities:

Since the COVID-19 outbreak people have been spending more time at home and they got more interested in learning new hobbies at home.

High speed and quality of the internet connection in South Korea and wide accessibility of internet resources are creating favorable environment for the development of online education services.

Threats:

YouTube and Instagram creators share content free of charge, which might discourage some potential customers of Class101 from buying online classes.

There is an increasing number of emerging competitors, such as Coloso, Hobbyful, Air Class etc.

3. National Context of the Success of Class 101

1) FIRM STRATEGY, STRUCTURE, AND RIVALRY

Class101 is a new fast growing company with 3 main markets: Korea, US and Japan. The company has such departments as business development and operation department, marketing department, development team, Management Support Team, Data Analysis team and Content creation team.

They are providing high quality lectures that are truly needed with all the necessary supplies available for purchase. The company is one of the leaders in the industry and is the only one company that offers all-in-one packages with class kits.

2) DEMAND CONDITIONS

These days there is a growing demand for online education, including both professional skills improvement and learning new hobbies. High competition in the labor market encourages users to sign up for online courses in order to develop their professional skills. Especially younger generations prefer learning new hobbies and skills comfortably from home, so they choose online sources over face-to-face classes. Moreover, busy Korean people don't want to loose their time choosing and ordering materials and products needed for the class, therefore Class101 with included class kits seems attractive to them.

3) FACTOR CONDITIONS

Well developed internet infrastructure in Korea makes the process of watching online lectures comfortable and easily available. Smooth delivery services in Korea allow class kits to be delivered to the customers very quickly so that they can start their course as soon as possible. Another factor is skilled labor: active and experienced creators develop a high-quality content for Class101 platform.

4) RELATED & SUPPORTING INDUSTRIES

Class101 cooperates with numerous suppliers of the products needed for the class kits, and of course prices on the packages depend on the prices of those items offered by the suppliers. Also for the production of the classes Class101 partners with professional studios that do filming and editing. The prices of their services affect Class101 products as well.

5) GOVERNMENT & CHANCE

Because of COVID-19 pandemic outbreak people are spending more time at home and they have more time for exploring new hobbies. Social distancing rules make them favor online classes, that can be enjoyed safely and comfortably at home. Since The Korean government decided to use online classes as part of the official education curriculum during the pandemic, the Ministry of Education provided free smart device rental services and subsidies for Internet subscription fees for students, so that no one is left behind in taking online classes. And taking into account that the majority of Class101 customers are young people, for the company it means that more potential clients have now an opportunity to access the classes.

4. Conclusion

Class101 is a fast growing, promising E-learning company that has a unique company culture. The company puts a lot of efforts into creating high quality content and then promoting it. The online platform strives to help creators and provide them with necessary tools so that they can earn money doing what they truly love, and to offer the customers online courses that they demand.

In my opinion, in order to remain competitive, Class101 should improve their customer service, especially for their US and Japan markets. Also, the company could implement some regulations or quality control activities to improve homework feedback, which in some cases lacks details and is provided late, according to some of the customers. Owing to their unique offering of class kits and high quality of the video content, Class101 remains competitive notwithstanding the growing number of competitors and competition from the YouTube and Instagram creators.

In a very short time a start up company created by recent graduates managed to succeed and even go global, which proves its business model to function well and shows high levels of consumer demand, and interest in learning new hobbies and skills online.

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