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The Influence of Multilevel Factors of Human Resource Practices on Innovative Work Behavior

Sukumarkl Koednok[1] and Mullika Sungsanit[2]

In the competitive business world today, many industries face the flux of rapid change, especially in the ICT industry. Therefore companies should focus on innovative work behavior (IWB) in order to gain a competitive advantage. The focus of this research are the human resource practices that are needed to overcome the difficulty in sustaining innovative work behavior in the organizations. This study combined the Ability, Motivation and Opportunity (AMO) theory from human resource practices and a componential theory of creativity from innovative work behavior to the study of employees working in the ICT organizations listed in the Stock Exchange of Thailand (2016). It aimed to test a conceptual multilevel model of human resource practices and innovative work behavior through the individual mediating variable of employee work passion, and the group mediating variable of innovation trust. The sample of the study were 66 groups from 326 respondents, selected by using a multi-stage cluster random sampling technique. The results showed that the model fits the empirical data, considering goodness of fit measures, namely Chi-square = 667.67 (df = 324), p-value = 0.000, (χ2/df) = 2.06, CFI = 0.94, TLI = 0.93, RMSEA = 0.06, and $SRMR_w$ = 0.06. $SRMR_b$ = 0.16. The results of this study suggest that employee work passion is very important as a mediating variable at the individual level for enhancing innovative work behavior. Moreover, innovation trust is very important as a full mediating variable to increase innovative work behavior at group levels.

Keywords: human resource practices, employee work passion, innovation trust, innovative work behavior

Nowadays, one of the key factors for survival in a rapidly changing business world, is an organization's ability to innovate, in order to gain a competitive advantage (Leong & Rasli, 2014; Shipton, West, Dawson, Birdi, & Patterson, 2006). Previous meta-analysis research proposed that one way for an organization to have more innovation is to enhance employees' innovative work behavior (IWB) (Hammond, Neff, Farr, Schwall, & Zhao, 2011). According to a previous study, human resource practices should be central in the discussion about firms' performance and intention to behave innovatively at work (Zhou, Hong, & Liu, 2013). Recent research indicated that human resource practices are the main antecedents of innovative work behavior (Laursen & Foss, 2013; Zhou, Hong, & Liu, 2013). The Ability, Motivation and Opportunity (AMO) theory of human resource practices explains some a gap between human resource practices and innovative work behavior. However, the relationship between human resource practices and behavior, especially motivation factor, is not always significant in some research (Laursen & Foss, 2013). Therefore, many scholars in human resource management practices, have given increased attention to investigating the mediating factors which affect innovative work behavior (Prieto & Pérez Santana, 2014; Wojtczuk-Turek & Turek, 2015).

The componential theory of creativity (Amabile, 1996; Amabile, 2012) indicates that passion is the one of the most important motivating factors for creativity and innovation at the individual level. In the componential theory, the influences on creativity and innovation

[1] Ph.D. student in School of Management Technology, Institute of Social Technology, Suranaree University of Technology, Thailand. Email: sukumarl2012@gmail.com
[2] Lecturer, Institute of Social Technology, Suranaree University of Technology, Thailand.

include three within-individual components: domain-relevant skills, creativity-relevant processes, and task motivation (specifically, the intrinsic motivation to engage in the activity out of interest, enjoyment, or a personal sense of challenge). Amabile (2012) indicated that intrinsic task motivation is passion: the motivation to undertake a task or solve a problem because it is interesting, involving, personally challenging, or satisfying- rather than undertaking it out of the extrinsic motivation (Amabile, 2012). On the others hand, many research results found that engagement is the intrinsic motivation and it affects to stimulate innovative work behavior (Agarwal, 2014; De Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem, 2014; Chang, Hsu, Liou, & Tsai, 2013). Moreover, the concept of employee work passion model (Zigarmi, Houson, Witt, & Diehl, 2009) is a distinct concept beyond engagement and is supported by the componential theory of creativity. Therefore, it can summarized employee work passion is one of the most important factors for stimulating innovation and innovative work behavior. However, there is a lack of empirical research about the relationship of employee work passion and innovative work behavior.

In general, innovative work behavior is a complicated process that involves multilevel process. Scholars indicate that innovative work behavior is a multilevel process that involves the relationship of the individual, group, and organization (Kanter, 1988). There are some meta-analytical research indicated that team level is very important for innovative at work (Hulsheger, Anderson, & Salgado, 2009). Moreover, a structure in group process in the work place will influence the individual as innovative work behavior in group level. Innovative work behavior in the organizations, by definition, should be acknowledged as multilevel systems and should be studied from a multilevel perspective (Kozlowski & Klein, 2000). However, in most of the research on IWB since 1980 until 2009, the effect of the IWB was investigated at individual level (Hammond, Neff, Farr, Schwall, & Zhao, 2011). Therefore the implications and the complexity of innovative work behavior in the organization are not always understood and well-studied (Hulsheger, Anderson, & Salgado, 2009), especially, the study of the mediating variables at each level. There is a lack of studies of the relationships of human resource practices in a multilevel construct as well as a lack of studies of their relationships to innovative work behavior especially at group level (Jiang, Takeuchi, & Lepak, 2013). Some recent research (Bysted, 2013) showed that innovation trust has a positive relationship with innovative work behavior and that it is effective for team building (Hakanen Soudunsaari, & Denning, 2012). Moreover, human resource practices according to AMO theory result in trust (Purcell, Kinnie, Hutchinson, Rayton, & Swart, 2003). Therefore, innovation trust is the mediating variable for human resource practice and innovative work behavior at group level.

In summary, systemic empirical research has not been fully applied to determine the role between multilevel HR practices which contribute significantly to employees' innovative work behavior. Moreover, the important mediators between individual and group level need to be investigated. In order to understand the influence of multilevel factors of human resource practices on innovative work behavior, it will be necessary to investigate the mediating factor at the individual level, which is employee work passion and the mediating factor at group level which is innovation trust. This paper will provide important contributions to the linkage between human resource practices and innovative work behavior drawing on multiple theories for gaining an insight understanding of how human resource practices stimulate IWB both at individual and group level simultaneously. This study uses the Multilevel Structural Equation Modeling (MSEM) approach. This technique is used for studying the causes and effects of factors that influence the multilevel approach (Raykov & Mels, 2007; Preacher, Zyphur, & Zhang, 2010). Also, MSEM was used to test the underlying constructs in the proposed model which investigate the influence of human resource practices

on innovative work behavior. In Thailand, especially in ICT organization from qualitative research (Koednok & Sungsanit, 2016b) it was found that innovation is very important for organization success and the important factor are human resource practices which should support organization's strategy to encourage innovative work behavior.

Research Objectives

1. To test the effects of a conceptual multilevel model of human resource practices on innovative work behavior.

2. To study the impact of human resource practices through employee work passion on innovative work behavior at the individual level and innovation trust at the group level.

Research Boundaries

The population of this study are the employees of ICT organizations listed in the Stock Exchange of Thailand (2016). They were identified as being knowledge workers who worked for at least 1 year and graduated with a bachelor's degree or high level of education. The sample size was 66 groups of 326 respondents selected by using a multi-stage cluster random sampling technique.

Literature Review

Innovative work behavior is a crucial factor which indicates a firm's superior performance that leads to competitive advantages. Moreover, this concept was chosen in this study because in the context of the ICT industry, human resource practices are the important antecedent factors from recent research on innovative work behavior (Zhou et al., 2013). From previous studies, human resource practices according to AMO theory are important antecedents which have a positive relationship to innovative work behavior (Laursen & Foss, 2013; Prieto & Pérez Santana, 2014; Wojtczuk-Turek & Turek, 2015). From theoretical and empirical research in the field of HRM according to AMO theory, suggests that three independent work system components shape individual and aggregate employee characteristics and thereby contribute to success of organization (Harney & Jordan, 2008). There are 3 mechanisms which are 1) mechanisms to ensure the employee has the appropriate skills and abilities; 2) mechanisms to motivate the employee to engage in desired behaviors, and 3) work systems that empower employees to contribute their individual and collective efforts toward organizational outcomes (Appelbaum, Bailey, Berg, & Kalleberg, 2000). Therefore, human resource practices is the main antecedent which will not affect directly to innovative work behavior but have indirect effect though mediators such as motivation factors. Moreover, many previous studies indicate that there are important mediating variables such as, employee work passion at the individual level and innovation trust in group level are factors that drive sustainable innovative work behavior and performance (Bysted, 2013; Hakanen et al., 2012). The review of the literature is summarized as follows.

Human Resource Practices and Employee Work Passion

Human resource practices are defined as the primary responsibilities of the human resource function within an organization, such as (training, development, selection, and compensation) (Rioux, Bernthal, & Wellins, 2000). Other definitions of human resource practices are the activities of organizations which human resource management to ensure the employee engagement in achieving organizational success (Schuler & Jackson, 1987). The role of human resource management is to choose human resource practices that encourage and

support specific behaviors (Schuler & Jackson, 2014). From AMO Theory, Becker, Huselid, Pickus, & Spratt (1997) argue that HRM practices operate most directly through employee skills, motivation, and work design, resulting in behavioral outcomes such as creativity, productivity, and discretionary effort. Therefore, HRM practices have the mediating factors which can stimulate innovative work behavior. Moreover, human resource practices have a positive relationship with employee engagement (Boxall & Purcell, 2003; Albrecht, Bakker, Gruman, Macey, & Saks, 2015). According to the componential theory of creativity (Amabile, 1988; Amabile, 2012), passion is the important intrinsic motivation for creativity and innovation. Furthermore, recent research in human resource development (Zigarmi et al. 2009) led to the proposal that employee work passion provides a framework for explaining specific behavior beyond engagement. Employee work passion is defined as an individual's persistent, emotionally positive, meaning-based state of well-being stemming from continuous, reoccurring cognitive and affective appraisals of various job and organizational situations, which results in consistent, constructive work intentions and behaviors (Zigarmi, Houson, Witt, & Diehl, 2013). From the componential theory of creativity and the employee work passion model, one can summarize by saying employee work passion is a good construct of intrinsic motivation towards the directional effort to express specific behavior, such as innovative work behavior (Zigarmi et al., 2009; Amabile, 2012). Therefore, it can be hypothesized that-

H1: The factor of human resource practices has a direct effect on employee work passion.

Innovative Work Behavior

One way for organizations to become innovative is to capitalize on employees' ability to innovate. In the last few years, therefore, scholars in human resource management and practitioners made great efforts to investigate factors that encourage employees to innovate or enhance their innovative work behavior (Yuan and Woodman, 2010). According to West and Far (1989), innovative work behavior at individual level is the intentional creation, introduction and application of new ideas of individual within a work role, group or organization, in order to benefit the role performance of the individual, group or organization. Moreover, Kanter (1988) propose that innovation consists of a set of behaviors carried out by individuals and groups of individuals within an organization, including idea generation, coalition building, idea realization and transfer. Therefore, the innovative work behavior in group level is defined as the intentional creation, introduction and application of new ideas of group within a work role, group or organization, in order to benefit the role performance of the individual, group or organization.

Kanter (1988) separated IWB into 3 stages: the beginning stage, which involves understanding the problems and generating of ideas or solutions, either novel or adopted; the second stage in which the innovator tries to promote their idea and builds a relationship with colleagues to support it finally, the innovator should implement the idea by creating new criteria from experience for distribution and production. Scott and Bruce (1994) proposed that Individual Innovative work behavior begins with the recognition of a problem and the generation of ideas or solutions, either novel or adopted. Finally, to summarize the IWB definitions, this study defines innovative work behavior as an employee's action directed at the generation, application and implementation of novelty ideas, products, processes, and methods to develop their job positions, departmental units, or organizations. Janssen O. (2000) also claimed that innovative work behavior can be linked to idea generation, idea promotion and idea realization which are stages in the innovation process. Scott and Bruce

(1994) divide innovative work behavior into 3 dimensions, which are idea generation, idea promotion and idea realization. Idea generation involves the generation of novel and useful ideas in any domain. Idea promotion which involves mobilizing support and acquiring approvals for the idea from peers and/or supervisor(s). Idea realization which is the transformation of these ideas into useful applications within a work role or group, or within the entire organization. De Jong & Den Hartog (2010) investigated the dimensions of IWB and concluded that the appropriate dimensions of IWB are 3 directions (Scott & Bruce, 1994). Therefore, this study adopts the construct of IWB in 3 directions which are idea generation, idea promotion and idea realization for investigating employees' IWB. Moreover, innovative work behavior not only includes the exploration of opportunities and the generation of new ideas, but also includes behaviors directed towards implementing applying or improving the product, process and procedure of their work roles, units, or organizations (De Jong & Den Hartog, 2010). From a synthesized review of innovative work behavior (Koednok & Sungsanit, 2016a), the contextual factors such as job characteristics, job design and job resource affect innovative work behavior by increasing the motivation level (Amabile, 1996; Shalley et al., 2004). Moreover, previous research supported the idea that intrinsic motivation, such as engagement is a mediating variable for innovative work behavior (De Spiegelaere et al., 2014; Chang, Hsu, Liou, & Tsai, 2013; Agarwal, 2014; Park, Song, Yoon, & Kim, 2014; Slatten, Svensson, & Svaeri, 2011). Furthermore, one can summarize from the componential theory of creativity and the employee work passion model that employee work passion is an important intrinsic motivation factor in innovation and creativity at the individual level (Zigarmi et al., 2009; Amabile, 2012). Therefore it can be hypothesized that-

H2: The factor of employee work passion has a direct effect on innovative work behavior.

Human Resource Practices as a Multilevel Construct

In general, human resource practices are the source for innovation in organizations. (Laursen & Foss, 2013). However, the traditional HRM Systems (Lepak, Liao, Chung, & Harden, 2006) (including control human resource systems, High-Commitment HR Systems and High Performance Work Systems) are not sufficient in practice (Zhou et al., 2013) especially with regard to employees' innovative work behavior.

Human resource practices is defined in several aspect such as Minbaeva (2005) viewed human resource practices a set of practices used by organization to manage human resources through facilitating the development of competencies that are firm specific, produce complex social relation and generate organization knowledge to sustain competitive advantage. For this research human resource practices at individual level is defined according to AMO theory as a perception of employee for the set of practices used by organization in 3 mechanism which are ability motivation and opportunity to enhance human resources associated with innovative work behavior. Human resource practices at group level is defined as a perception of group for the set of human practices for group used by organization in 3 mechanisms which are ability motivation and opportunity to enhance group /teams associated with innovative work behavior. A review of the literature demonstrates of human resource practices at individual level have 6 common practices that have been consistently associated with innovation which are 1) recruitment, 2) training and development, 3) performance appraisal, 4) teamwork, 5) empowerment and involvement, and 6) autonomy and challenge. In addition, for human resource practices at individual level have 5 practices which are 1) recruitment, 2) training and development, 3) performance appraisal, 4) empowerment and involvement, and 5) autonomy and challenge (Appelbaum et al., 2000; Purcell, Kinnie,

Hutchinson, Rayton & Swart, 2003; Jiang, Takeuchi & Lepak, 2013; Prieto & Pérez Santana, 2014).

Previous studies in human resource practices indicate that there are not enough studies of multilevel models of human resource practices, at the team level (Jiang et al., 2013). Therefore, Jiang et al. (2013) also propose a multilevel model of strategic HRM according to AMO theory for an investigation, especially at the team level in order to identify the important mediating factors in superior performance. From the multilevel model of strategic HRM, human resource practices at the team level have a direct effect on human resource practices at the individual level (Jiang et al., 2013). Moreover, human resource practices in a multilevel construct have positive relationship with organizational commitment (Obeidat, Masa'deh, & Abdallah, 2014; Kehoe & Wright, 2013). Therefore, it can be hypothesized that-

H5: Human resource practices at the group level are a factor which has a cross-level direct effect on human resource practices at the individual level.

H6: Human resource practices at the group level are a factor which has a cross-level direct effect on employee work passion at the individual level.

Innovation Trust

Innovative firms treat human resource practices at the group level as the organization's strategy to encourage team responsibilities, enhance organizational culture, and build up customer relationships through participation and empowerment and create innovation in the organization (Gupta & Singhal, 1993). Wright and Nishii (2006) proposed giving further direction by examining outcomes of HRM below the organizational level and argued that, in theory they examine relationship at the multilevel, especially with regard to their implementation at group level. In some recent research, Vanhala and Ahteela (2011) found that employee trust in the whole organization is connected to perceptions of the fairness and functioning of HRM practices. In order to build innovation in an organization, trust plays an important role in group relationships at the in team level (Braun et al., 2013; Tseng & Ku 2011) which results in innovative performance (Unsworth & Clegg, 2010; Bysted, 2013). In controversy, a lack of trust, leads team members to lose sight of the goals and interests of the team and to focus on their personal interests instead (Joshi, Lazarova, & Liao, 2009). It is especially true that the for innovation process in innovative work behavior needs the collaboration of the group to produce a high level of innovative work behavior at the group level and trust helps team members to suspend uncertainty about and vulnerability towards their fellow teammates (De Jong & Elfring, 2010). Clegg, Unsworth, Epitropaki, & Parker, (2002) state that in the problem centered approach the particular components of trust are specific to the context of the study. Thus, for innovative environment, Clegg et al., (2002) define innovation trust as an expectancy of reasonable and positive reactions by others in response to individual innovation attempts. The logic of this concept is that people are more likely to make efforts to innovate (by creating ideas and helping implement them) when they hold expectancies of reasonable and positive responses by others. These elements of trust are categorized into two new measures of innovation trust, 'trust that heard' and 'trust that benefit'. Innovation trust is closely related to innovative work behavior. Unsworth & Clegg (2010) found that innovation trust is important for reducing the negative outcomes from innovative work behavior, such as the intention to leave. Moreover, innovation trust will help members to feel free to propose new ideas and give them greater confidence that the group will give their positive support which will resolve any uncertainty in the implementing of new

ideas or innovations. Bysted (2013) found that innovation trust has a positive relationship with innovative work behavior. If human resource practices want to stimulate innovative work behavior, they must increase the level of innovation trust as the mediating factor. Therefore, it can be hypothesized that-

H3: The factor of human resource practices at the group level has a direct effect on innovation trust at the team level.

H4: Innovation trust at the group level has a direct effect on innovative work behavior at the group level.

H7: Innovation trust at the group level has a cross-level direct effect on employee work passion at the individual level.

This study proposes a multilevel construct of the influence of human resource practices and innovative work behavior. Moreover, studying the mediators is important in order to better understand how to enhance the employees' innovative work behavior at the multilevel. A multilevel conceptual model of the research was devised on the basis of the literature review as shown in Figure 1.

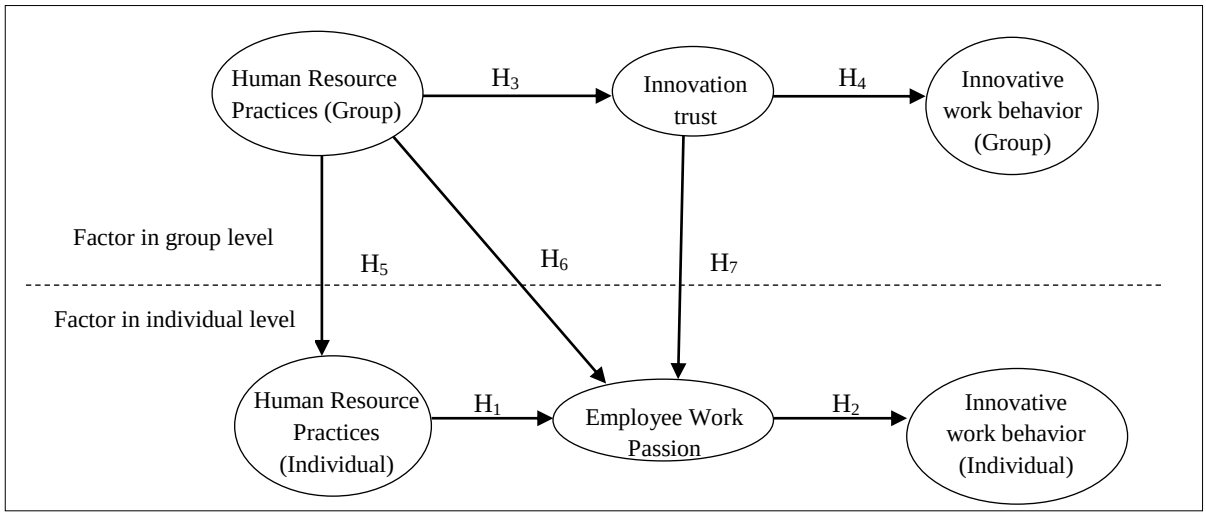

Figure 1. Conceptual Model.

Methodology

A quantitative approach was employed for this study by using a research survey. The data were gathered from samples who were members from the list of names of the ICT organization in The Stock Exchange of Thailand (2016) and collected the data from October 2016 to March 2017. The challenge of innovation, ICT companies cannot create innovation and sustain it for better competitive advantage even though they can stimulate innovation but not always occur for long run. Therefore, ICT industry need human resource practices to encourage creativity and innovation to gain the sustainable development to booth up the economy in long run. Moreover, the challenging for human resource practices is how to stimulate innovative work behavior to their employees to improve their work effectively and have an innovation in long term development. This research used one questionnaire to collect both individual and group level by for group level human resource practices and trust are a multilevel construct in reference-shift model. Referent-shift model describe constructs that

maintain the same meanings across different levels of analysis. Moreover referent-shift measures are usually completed by individuals, and then aggregated to the aggregate level, given that members sufficiently agree in their ratings. Such constructs can also be measured more directly, by using the group consensus methodology (Chen, Mathieu, & Bliese, 2004). The respondents well-educated as they had finished at least a bachelor's degree and they had worked for at least 1 year. The number of samples was selected by using a multilevel technique which defined the number of groups as at least 50 groups and the members in each group as at least 3-5 persons (Mass & Hox, 2005) at the group level. For the present research, 326 samples and 66 groups in departments from 22 companies were gathered by using probability sampling. A multistate cluster random sampling procedure was employed. The research tool used was a questionnaire which was divided into 6 parts. Part 1 contains general information about the respondents. Closed-ended questions were developed using a nominal and ordinal scale. For parts 2-6, the questions were represented with a 7 point interval scale. The content validity was approved by 3 professional experts and the index of item objective congruence (IOC) was found to be at least 0.5 (Rovinelli & Hambleton, 1977).

Table 1

Reliability for each measurement

Variables	Components	Cronbach's Alpha Coefficient (n=30) try out	Cronbach's Alpha Coefficient (n=326)
Human Resource Practices (Group) (adapted from Jiang et al., 2013)	6	.95	.97
Human Resource Practices (individual) (adapted from Lepak et al., 2006)	5	.96	.97
Innovation trust (adapted from Clegg et al., 2012)	3	.91	.93
Employee Work Passion (adapted from Zigarmi et al., 2013)	7	.97	.98
Innovative work behavior (adapted from Janssen, 2000)	3	.92	.95

From Table 1, shows the reliability test of all measures; where the cut off value was 0.70 (Hair et al., 2010). The reliability of questionnaires was 0.93-0.98 that is more than 0.70. Therefore, the study instrument has high reliability.

Results

As shown in Table 2, most of the respondents were female (54.6 percent), between 31-35 years of age (27.3 percent), who held a Bachelor's Degree (73.9 percent), and who had worked in the company for more than 9 years (46.6 percent). The largest group of respondents were from the engineering department (29.8%). There were 66 groups and the average cluster size was 4.94.

Part 1: Measurement Model

The multilevel analysis, was divided into 2 separate parts. Firstly, to confirm the measurement model at the individual level by using confirmatory factor analysis (CFA) and at the group level by using multilevel confirmatory factor analysis (MCFA) by Mplus 7.2 software program. The model fit with the empirical data was examined by the criteria of χ^2/df

less than 3 (Hair et al., 2010) or less than 5 (Schumacker & Lomax, 2004), the goodness of fit (CFI/TLI) ≥ 0.90 (Hair et al., 2010), and the root mean square error of approximation (RMSEA/SRMR) < 0.05 (Hair et al., 2010) or ≤ 0.08 (Hu & Bentler, 1995). The results for the measurement model are shown in Table 2.

Table 2

Respondent demographic and departmental information (N=326, Group = 66)

Demographic	N	%		N	%
Gender			Department		
Male	148	45.4	Management	26	8.0
Female	178	54.6	Marketing	52	16.0
Age			Engineering	97	29.8
21-25 years	28	8.6	Customer Service	39	12.0
26-30 years	76	23.3	Accounting & Finance	4	1.2
31-35 years	89	27.3	Purchasing	5	1.5
36-40 years	72	22.1	IT	31	9.5
40-45 years	40	12.3	Sale	33	10.1
46-50 years	18	5.5	Administrative	16	4.9
>50 years	3	0.9	Technician	18	5.5
Education			Graphic	5	1.5
Bachelor Degree	241	73.9	Group		
Master Degree	85	26.1	Number of Group	66	
Number of years of service			Average cluster size	4.94	
1-3 years	84	25.8			
3-5 years	36	11.0			
5-7 years	30	9.2			
6-9 years	24	7.4			
> 9 years	152	46.6			

Table 3

Measurement Model of Individual Level

	Human Resource Practices [a]	Employee Work Passion [a]
χ^2	680.56	573.05
df	222	223
χ^2/df	3.06	2.57
CFI	0.93	0.96
TLI	0.92	0.96
RMSEA	0.08	0.07
SRMR	0.05	0.03
CR	0.92	0.95
AVE	0.65	0.74

Note: ** $p < .01$; [a] = second order confirmatory factor analysis

From table 3, the findings show that the construct of human resource practices fit with the empirical data by revealing $\chi2$=680.56, *df* = 222, $\chi2/df$ = 3.06, CFI = 0.93, TLI = 0.92,

RMSEA = 0.08, and SRMR = 0.05. The factor loading of the first component was examined to 6 latent variables, namely, recruitment and selection (0.76), training and development (0.75), performance evaluation and rewards (0.86), teamwork (0.92), empowerment and involvement (0.939), and autonomy (0.910). The factor loading of the second component was between 0.77 and 0.90. The construct of employee work passion fit with the empirical data by revealing $\chi 2$= 573.05, *df* = 223, $\chi 2/df$ = 2.57, CFI = 0.96, TLI = 0.96, RMSEA = 0.069, and SRMR = 0.03. The factor loading of the first component was examined to 7 latent variables, namely, intention to stay (0.82), organizational commitment (0.86), job commitment (0.93), discretionary effort (0.94), employee endorsement (0.93), effort and exertion (0.95), and investigation and examination (0.91). The factor loading of the second component was between 0.82 and 0.92.

Table 4

Correlation between the observed variables in the individual model

	1	2	3	4	5	6	9	10	11	12	13	14	15
HR1	1												
HR2	.59**	1											
HR3	.66**	.73**	1										
HR4	.62**	.56**	.70**	1									
HR5	.62**	.58**	.71**	.82**	1								
HR6	.56**	.62**	.71**	.76**	.81**	1							
P1	.52**	.48**	.59**	.59**	.63**	.56**	1						
P2	.53**	.59**	.65**	.63**	.62**	.62**	.73**	1					
P3	.54**	.51**	.52**	.58**	.55**	.54**	.69**	.74**	1				
P4	.55**	.52**	.52**	.55**	.53**	.49**	.67**	.73**	.84**	1			
P5	.50**	.53**	.58**	.54**	.58**	.51**	.74**	.74**	.75**	.79**	1		
P6	.53**	.54**	.55**	.57**	.58**	.53**	.69**	.73**	.80**	.82**	.82**	1	
P7	.54**	.56**	.55**	.54**	.59**	.51**	.64**	.70**	.78**	.79**	.79**	.84**	1

From table 4, by examination of the relationship between the observed variables, namely, human resource practices (HR1= selection, HR2 = Training and development, HR3 = evaluation and rewards, HR4 = Teamwork, HR5 = involvement, HR6 = autonomy), and employee work passion (P1 = intention to stay, P2 = organizational commitment, P3 = job commitment, P4 = discretionary effort, P5 = employee endorsement, P6 = effort and exertion, P7 = investigation and examination). The correlation was between 0.48 and 0.84 which does not exceed 0.85 which is statistically acceptable (Field, 2005). Following these calculations, the data was analyzed according to the structural equation model.

From table 5, reported the inter-member agreement which is the unit members should evidence high levels of agreement on the targeted construct. James, Demaree & Wolf (1984) developed an inter-member agreement index (r_{wg}) for this purpose. Values are calculated for each aggregate. When the average r_{wg} across aggregates is greater than or equal to 0.70, the evidence is considered sufficient for justifying the individuals' ratings to the group level. The meaning of inter-member reliability depends on the particular index of reliability used. The most commonly used indices are intraclass correlations (ICCs) – in particular, ICC (1) and ICC (2) (Chen, Mathieu, & Bliese, 2004). The results of r_{wg} are 0.75-0.84 that are greater than

0.7 and ICC (1) range between 0.06 - 0.22 that are greater than 0.05. These evidence were considered sufficient for justifying the individuals' ratings to the group level.

Table 5

Results of Inter-Member Agreement for Multilevel Analysis

	r_{wg}	ICC(1)	ICC(2)
Human resource Practices (group level)			
Recruitment	0.81	0.15	0.47
Training and Development	0.75	0.22	0.58
Performance Appraisal	0.75	0.18	0.52
Empowerment and Involvement	0.79	0.06	0.25
Autonomy and Challenging	0.79	0.15	0.47
Innovation Trust			
Trust that heard	0.83	0.17	0.51
Trust that benefit	0.80	0.08	0.31
Innovative work behavior			
Idea Generation	0.83	0.06	0.24
Idea Promotion	0.80	0.08	0.31
Idea realization	0.84	0.15	0.47

Table 6

Measurement Model (Multilevel Confirmatory Factor Analysis)

	Human resource Practices (group level)	Innovation Trust	Innovative work behavior
χ^2	323.97	28.46	117.72
df	203	16	51
χ^2/df	1.59	1.78	2.31
CFI	0.98	0.99	0.98
TLI	0.97	0.99	0.97
RMSEA	0.04	0.05	0.06
$SRMR_w$	0.04	0.02	0.03
$SRMR_b$	0.09	0.04	0.08

From table 6, firstly these findings shown that the construct of human resource practices at group level fit with the empirical data by revealing χ^2=323.97, df = 203, p-value = 0.000, χ^2/df = 1.59, CFI = 0.98, TLI = 0.97, RMSEA = 0.04, $SRMR_w$ = 0.04, and $SRMR_b$ = 0.09. Secondly, the construct of innovation trust fit with the empirical data by revealing χ^2= 28.46, df = 16, p-value = 0.03, χ^2/df = 1.78, CFI = 0.99, TLI = 0.99, RMSEA = 0.05, $SRMR_w$ = 0.02, and $SRMR_b$ = 0.04. Thirdly, the construct of innovative work behavior fit with the empirical data by revealing empirical data by revealing χ^2/=117.714, df =51, p-value = 0.000, χ^2/df = 2.31, CFI = 0.98, TLI = 0.97, RMSEA = 0.06, and SRMRw = 0.03, SRMRb = 0.08.

Part 2: Multilevel Model

The multilevel model shows the influence of multilevel factors of human resource practices on innovative work behavior. The results of the influence of multilevel factors of human resource practices on innovative work behavior in individual model fit with the empirical data under the condition of χ^2/ = 667.7, df = 324, p-value = 0.000, (χ^2/df) = 2.06 less

than 3, CFI = 0.941 and TLI = 0.932 exceeds 0.9, RMSEA = 0.057, $SRMR_w$ = 0.062 and $SRMR_b$ = 0.162 (Hair, Black, Babin, & Anderson, 2010).

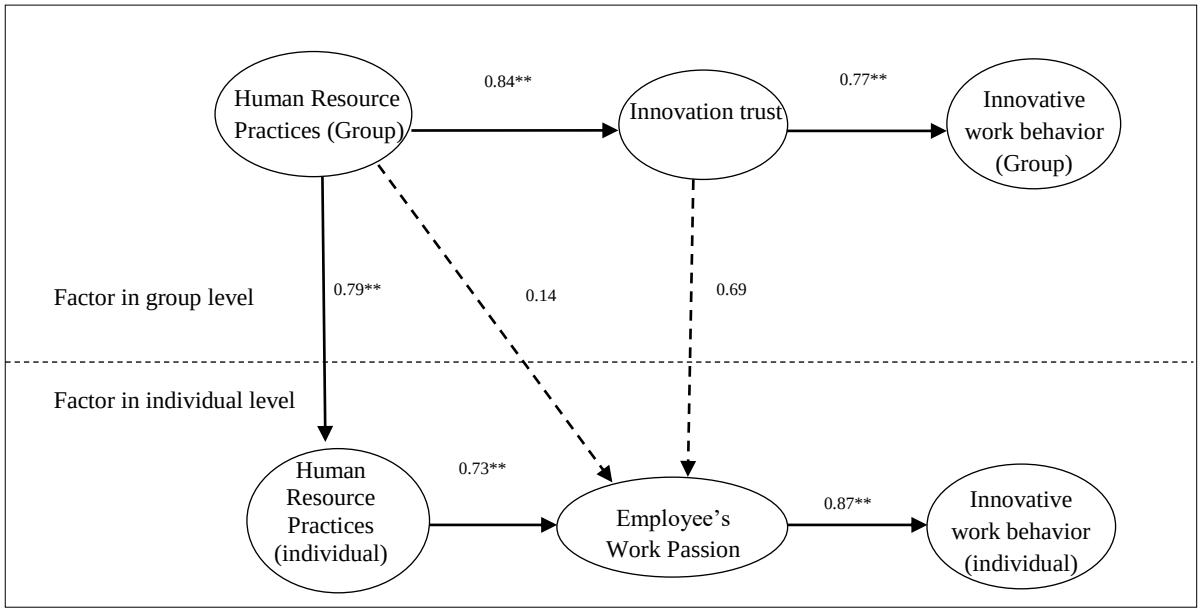

Figure 2. The multilevel model showing the influence of multilevel factors of human resource practices on innovative work behavior.

From figure 2, the results at individual level shown that human resource practices have a direct effect on employee work passion (β = 0.73, p < 0.01). This means that human resource practices increase employees' work passion to a high level. Moreover, the employee work passion has a direct effect on innovative work behavior (β = 0.87, p < 0.01). Therefore human resource practices have indirect effect to innovative work behavior through employee work passion. It can summarizes that employee work passion is the full mediator of human resource practices and innovative work behavior and human resource practices have no direct effect to innovative work behavior. Thus, higher employee work passion also results in greater innovative work behavior. Additionally, human resource practices at group level have a direct effect on innovation trust (β = 0.84, p < 0.01). Moreover, innovation trust has a direct effect on innovative work behavior at group level (β = 0.77, p < 0.01).

For group level, human resource practices have indirect effect to innovative work behavior through innovation trust. It can summarizes that innovation trust is the full mediator of human resource practices and innovative work behavior at group level and human resource practices have no direct effect to innovative work behavior. Consequently, it can be assumed that the greater the satisfaction with human resource practices, the greater the innovation trust of the group members. Similarly, the greater the innovation trust the greater the results on innovative work behavior at group level. From the results of cross level analysis, human resource practices at group level have a direct positive effect on human resource practices at individual level (β = 0.79, p < 0.01). Unfortunately, human resource practices at group level do not have a direct effect on employee work passion at the individual level. An analysis of the indirect effects found that the greater the human resource practices at group level, the more employee work passion was enhanced through the mediator which is human resource practices at individual level. Therefore, the analysis shows that H1, H2, H3, H4 and H5 are supported, but H6 and H7 are not supported, as shown in Figure 2 and Table 6.

Table 7

Results of the hypotheses testing

Hypothesis	Estimate (β)	R^2	Hypotheses test
Within			
H_1: Human Resource Practices (Individual) → Employee work passion	.73**	0.53	Accepted
H_2: Employee work passion → IWB	.87**	0.75	Accepted
Between			
H_3: Human Resource Practices (Group) → Innovation Trust	.84**	0.71	Accepted
H_4: Innovation Trust → IWB(Group)	.77**	0.59	Accepted
Cross Level			
H_5: Human Resource Practices (Group) → Human Resource Practices (Individual)	.79**	0.62	Accepted
H_6: Human Resource Practices (Group) → Employee Work Passion	.14	-	Not Accepted
H_7: Innovation Trust → Employee Work Passion	.69	0.65	Not Accepted

Note: ** $p < .01$

Discussion

The ICT industries are confronted with the challenge of doing business in a rapidly changing business environment. Innovative work behavior is an intentional creation, leading to the introduction and application of new ideas, processes, products or services within a work role, group or organization which is an important asset for the success of a business (Hammond, Neff, Farr, Schwall, & Zhao, 2011; Leong & Rasli, 2014). Firstly, according to hypothesis 1 (H1) the factor of human resource practices has a direct effect on employee work passion. This assumption is from the componential theory of creativity (Amabile, 2012) because the ability, motivation and opportunity (AMO) theory of human resource practices explain some gaps between human resource practices and innovative work behavior. However, motivation factor is not always found to be significant in some research (Laursen & Foss, 2013). Moreover, research results show that human resource practices have a direct effect on employee work passion (Boxall & Purcell, 2003; Albrecht et al., 2015). For hypothesis 2 (H2), suggests that the factor of employee work passion has a direct effect on innovative work behavior. These findings are similar to those found in the study of intrinsic motivation in which engagement is a mediating variable for innovative work behavior (De Spiegelaere et al., 2014; Chang et al., 2013; Agarwal, 2014; Park et al., 2014; Slatten et al., 2011). Therefore, it can be concluded that employee work passion is important as a mediator of human resource practices for innovative work behavior which is supported by the componential theory of creativity (Amabile, 2012). These research results clearly confirm the componential theory of creativity by the results of the influence of human resource practices on innovative work behavior fit with the empirical data at the individual level. However, the structural model at the individual level is not a perfect fit compared with the multilevel model. In summary this conceptual model at the individual model are not enough to explain the relationship between the effects of human resource practices on innovative work behavior.

Secondly, hypothesis 3 (H3) suggests that at the group level the factor of human resource practices has a direct effect on innovation trust at the team level. The research results supported that human resource practices at the group level have a direct effect on innovation trust at the team level. These findings are similar to those found in the study of Vanhala and Ahteela (2011) and Braun, Peus, Weisweiler, & Frey (2013). Furthermore, hypothesis 4 (H4)

suggests that innovation trust at team level has a direct effect on innovative work behavior at the group level. These results confirm this hypothesis and these findings are similar to Bysted (2013) who found that innovation trust has a positive relationship with innovative work behavior.

Next, the research results of the cross level analysis found that human resource practices at group level have a direct effect on human resource practices at the individual level as suggested in hypothesis 5. This research is supports the idea that human resource practices at group level are highly important for human resources practices at the individual level which is similar to the proposed model of strategic human resource practices in the multilevel construct (Jiang et al., 2013). However, the research results do not support hypothesis 6 (H6) that human resource practices at the group level have a direct effect on employee work passion at the individual level. However, human resource practices at the group level have indirect effect though human resource practices at individual level as a mediator to employee work passion. Lastly the research results do not support hypothesis 7 (H7) that innovation trust does not have a significant direct effect to employee work passion.

Finally, the importance of this study is that it clarifies the multilevel construct of the influence of human resource practices on innovative work behavior according to the AMO theory and the componential theory of creativity. According to AMO theory, employees should receive the ability, motivation and opportunity from human resource practices to be stimulated into innovative work behavior. Moreover, from the componential theory of creativity, the important driving factor or fuel of innovation is passion (Amabile, 2012). Human resource practices should provide the right practices to lead their employees to have innovative work behavior by increasing employee work passion at the individual level. Furthermore, the results for the group level show that the important mediating factor is innovation trust which has a direct effect on innovative work behavior at the group level. Therefore, this research can be summarized as showing that in order to increase innovative work behavior, organizations especially in the ICT industry should focus more on choosing the appropriate combination of human resource practices to increase trust at the group level and to increase employee work passion at the individual level in order to obtain a highly innovative work behavior outcome.

Conclusion

Human resource practices are an important factor in driving innovative work behavior both at the individual level and the group level. Lepak, Liao, Chung, and Harden, (2006) discussed and stated that, the traditional HRM Systems (including control of human resource systems, High-Commitment HR Systems and High Performance Work Systems HPWS), are not effective enough (Zhou et al., 2013) to produce innovative work behavior. This research study adopts the AMO theory in human resource practices and investigates human resource practices in a multilevel model which Jiang et al. (2013) proposed to further investigate innovative work behavior at the team or group level. Interestingly, in order to stimulate innovative work behavior, organizations should focus on human resource practices both at the individual level and the group level. Firstly, the important mediating factor is passion according to the componential theory of creativity (Amabile, 2012). The results of this research revealed that human resource practices have no direct effect but have indirect effect through employee work passion to innovative work behavior. Therefore, the company should use appropriate human resource practices for stimulating employee work passion to increase innovative work behavior at the individual level. However, the study of employee work passion in this research adopts the model of Zigarmi (2013) and combines it with 2 new

constructs which are effort and exertion and investigation and examination based on the Path-way of success which was developed by Boonsathorn (2013) for Asian culture. Therefore, to examine the factors affecting employee work passion it is necessary to develop or confirm what is appropriate for each context.

In addition, the research results for studies of human resource practices at the group level are very important to stimulate innovative behavior through the mediator of innovation trust at the group level. The results of this research revealed that human resource practices at group level have no direct effect but have indirect effect through innovation trust to innovative work behavior. Therefore, it can be summarized that innovation trust is an important mediator for human resource practices and innovative work behavior at group level. Moreover, human resource practices at the group level still need further investigation because previous research studies focused more on the individual level and the organization level (Jiang et al., 2013). However, the innovation trust which was proposed by Clegg et al., (2002), is one of the important mediating factors. But previous research has revealed that there are still some important mediating factors that have not yet been examined (Hulsheger et al., 2009). Finally, this study investigated the ICT industry and it focused on innovation with regard to both products and services. Consequently, it can be seen that human resource practices should encourage their employee innovative work behavior (Koednok & Sunksanit, 2016b). Therefore, the factors in this model need to be further investigated in other contexts.

Recommendations

Innovative work behavior combines both new ways of making routine work efficient and new innovation outcome which are the important factors in gaining competitive advantages. For the practitioner, human resource management should provide the right combination of human resource practices at the organization, group and individual level in order to encourage their employees to produce innovative work behavior by increasing employee work passion at the individual level and innovation trust at the group level. For future research, innovative work behavior has other antecedents such as innovation contexts and personal characteristics are also important factors in innovative work behavior at the individual level (Hammond et al., 2011). Moreover, at the group level, there are some mediating factors that should also be examined such as internal communication and team cohesion (Hulsheger et al., 2009). Finally, it would be useful to examine all the important factors leading to innovative work behavior and to establish what constitutes the most effectives use of human resource practices.

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