HIGH PERFORMANCE WORK SYSTEMS AND INNOVATIVE WORK BEHAVIOR AMONG TELECOM EMPLOYEES: THE MEDIATING ROLES OF ORGANIZATIONAL CLIMATE FOR INNOVATION AND PSYCHOLOGICAL EMPOWERMENT

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Abstracts

In order to survive in today's fast-changing environment, it is critical for organizations to keep innovating. This study aimed to examine the relationship between high-performance work systems (HPWS)—a bundle of interrelated human resources (HR) practices —and employees'innovative work behavior (IWB). Drawing from multiple theoretical perspectives, the study also seeks to investigate the mediating role of an organizational climate for innovation and psychological empowerment. Using a two-stage cluster sampling design based on a non-probability approach, data were collected from 710 individuals in six major telecommunication organizations in several regions of Thailand. Structural equation modeling (SEM) analyses revealed that the relationship between HPWS and IWB was fully and sequentially mediated by the organizational climate for innovation and psychological empowerment. These results suggest that employees are more likely to engage in IWB when they perceive that their organizations adopt HR practices that promote a climate for innovation, which in turn provides them with psychological empowerment.

Keywords: High performance work systems (HPWS); innovative work behavior (IWB), organizational climate for innovation; psychological empowerment

INTRODUCTION

In today's volatile, uncertain, complex, and ambiguous (VUCA) environment, innovation has become a critical factor, which has been shown to differentiate successful from unsuccessful organizations (Jiménez-Jiménez & Sanz-Valle, 2011; Thornhill, 2006). As employees are the cornerstone of an organization's innovative capabilities (Mumford, 2000; Ramamoorthy et al., 2005; Veenendaal & Bondarouk, 2015), it is critical to understand the factors that can promote employees' innovative work behavior (IWB) (Bos-Nehles and Damanpour, 1991; Jiang et al. 2012a; Lepak et al., 2006; Renkema and Janssen, 2017; Wang and Zhao, 2012; and Zhou, Hong, and Liu; 2013). Among the several factors that have been investigated in the extant literature (Bos, 2014; Jafri, 2010; Xerri, 2013; Yesil & Sozbilir, 2013), human resource (HR) practices have been shown to be an important predictor of employees' IWB (Combs et al., 2006; Fernandez & Pitts, 2011; Jiang, Wang & Zhao, 2012; Scott & Bruce, 1994).

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The purpose of this study is to examine how "high performance work systems" (HPWS) influence employees' IWB. In the human resource management (HRM) literature, HPWS refers to the HR strategies that work together to produce a pleasant work environment that enhances employees' abilities and motivation (Garaus et al., 2015; Patel et al., 2013) as well as their opportunities for advancement (Boxall & Purcell, 2011; Fu et al., 2015). Such HR practices include selective staffing, training and development, compensation, performance appraisal, career development, participation in decision making, communication and information sharing, self-managed teams, and job autonomy (Bowen & Ostroff, 2004; Huselid, 1995).

While previous studies have examined the impact of HPWS on employees' IWB (Caniëls & Veld, 2019; Caniëls & Veld, 2019; De Spiegelaere, Van Gyes & Van Hootegem, 2018; Sanz-Valle & Jiménez-Jiménez, 2018), it is important to acknowledge that we still know relatively little about the psychological mechanisms that can explain this positive influence. This study proposes that an organizational climate for innovation — defined as the internal environment that supports innovation, encourages the generation of new ideas, and cherishes individual creativity and individual autonomy (Siegel & Kaemmerer, 1978; Shanker et al., 2017)—will mediate the relationship between HPWS and IWB. Consistent with the ideas of social learning theory (Bandura, 1989), a climate supportive of innovation can communicate to individuals that their innovative behavior is an organizationally valued activity through which they can help firms succeed. In addition, this study draws from self-determination theory (SDT) (Deci & Ryan, 2000) to propose that psychological empowerment, which refers to an individual's beliefs in their ability to make a positive influence on the organization (Spreitzer, 1995), could serve as another mediating mechanism.

This article contributes to the HRM literature by examining the sequential underlying mechanisms linking HPWS and employees' IWB. While past research has shown that the relationship between HPWS and product innovation is mediated by IWB (Sanz-Valle and Jiménez-Jiménez, 2018) and that the relationship between HPWS and IWB is mediated by employee voice (Miao et al., 2020) and exploratory learning (Escribá-Carda et al., 2017), there is still a general lack of research that seeks to shed light on the psychological mechanisms that can explain the positive relationship between HPWS and IWB. To test the study hypotheses, this study employed a unique sample of employees from several telecom organizations in Thailand. Knowledge gained from the present research can be used to further strengthen the HR policies that aim to foster employees' innovative behaviors. The conceptual framework depicting a sequential mediation model between HPWS and IWB is provided in Figure 1.

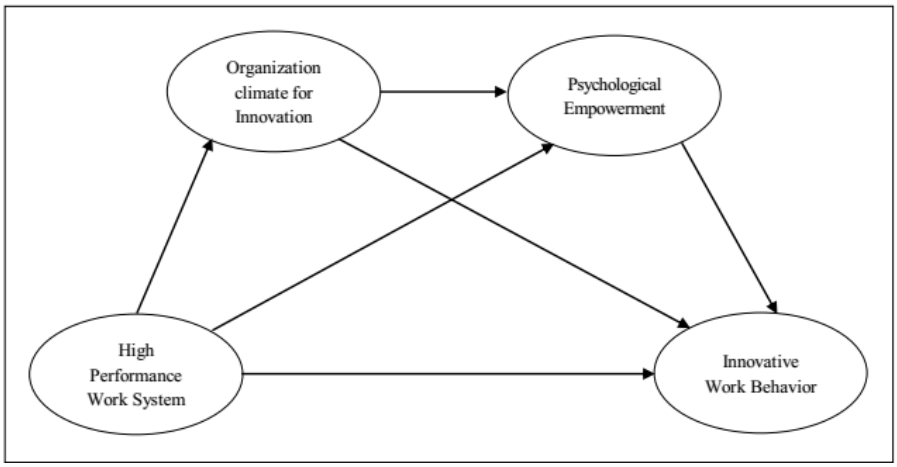

Figure 1 Conceptual Model

LITERATURE REVIEW AND HYPOTHESES

High Performance Work Systems (HPWS) and Innovative Work Behavior (IWB)

The conceptualization of HPWS in this study corresponds with the typology proposed by various studies in the HRM literature (Appelbaum et al., 2000; Bailey et al., 2001; Delaney and Huselid, 1996; Guest, 1997). In particular, this study conceptualizes HPWS in terms of three primary policy domains: (1) ability-enhancing HR practices, (2) motivation-enhancing HR practices, and (3) opportunity-enhancing HR practices. The ability-motivation-opportunity (AMO) paradigm has been utilized in the strategic HRM literature to describe the function of HPWS in promoting employees' abilities, motivation, and opportunities for advancement in order to attain superior organizational performance (Boxall & Purcell, 2011; and Macky and Boxall, 2007).

According to Macky and Boxall (2007), selective recruiting and intensive training are examples of ability-enhancing HRM practices, whereas contingent compensation, appraisal, and internal advancement opportunities are examples of motivation-enhancing HRM practices. Furthermore, opportunity enhancing HRM strategies emphasize employee involvement in decision-making, information sharing, self-managed teams, and job autonomy. Because HPWS entail a long-term investment in people by promoting skill development, empowerment, internal communication, fairness in compensation, and status equalization (Heffernan & Dundon, 2016), it has been demonstrated that employees who work for organizations with greater scope and levels of HPWS tend to have higher job satisfaction, higher organizational commitment, lower turnover, and higher productivity (Bashir et al.,2011; Dorta-Afonso et al.,2021; Fabi et al.,2015; Macky & Boxall, 2007; Phipps et al.,2013).

The focus of this research is on the influence of HPWS on employees' innovative behavior (IWB), which has been defined as an individual's actions aimed at creating and implementing new ideas about new products, technologies, procedures, and work processes, with the goals of improving the organization's effectiveness (Kleysen & Street, 2001; Yuan & Woodman, 2010). This relatively broad behavioral construct encompasses both the development and transition of ideas into tangible inventions (Devloo, Anseel, De Beuckelaer, & Salanova, 2015). In particular, IWB is considered a discretionary conduct that goes beyond established role requirements, which employees are not specifically obliged to comply (Janssen, 2000).

To date, there is still a lack of understanding of how organizations can encourage individuals to engage in IWB (Janssen, 2000). In line with previous research (e.g., Escribá-Carda et al., 2017; Miao et al., 2020; Sanz-Valle and Jiménez-Jiménez, 2018), this study argues that HR practices can be used to promote IWB. This is based on the notion that employees play an important role in framing the organization's innovative capabilities through their intelligence, imagination, and creativity (Mumford, 2000; Ramamoorthy et al., 2005; Veenendaal & Bondarouk, 2015). In particular, IWB can be influenced by specific HR practices including job autonomy (Battistelli et al., 2014; De Spiegelaere et al., 2014; Ramamoorthy et al., 2005), employee participation in decision-making (Janssen, 2005), provision of performance feedback to employees (Battistelli et al., 2014), and the perception of effort-reward fairness (Janssen, 2000).

This study draws attention to the role of HPWS—a bundle of interrelated HR practices in influencing IWB. To illustrate, a selective selection system ensures that only job applicants who show innovative tendencies will be selected into the

organization, whereas rigorous training programs provide employees with specific tools and skills that allow them to put their creativity and imagination to good use. Alternatively, motivation-enhancing practices such as compensation, performance management, and internal advancement opportunities ensure that certain behaviors of employees are properly monitored, reinforced and motivated. Finally, opportunity-enhancing HRM practices such as allowing employees to become involved in decision-making and engage in information sharing can create a positive work climate that welcomes mistakes, in which employees feel safe to voice their opinions and express their creativity and imagination. Past research has shown that HPWS are related to IWB in the context of the Chinese private sector (Miao et al., 2020) and the Spanish private sector (Sanz-Valle and Jiménez-Jiménez, 2018) as well as the Spanish public sector (Escribá-Carda et al., 2017). This leads to the first hypothesis:

*Hypothesis 1***:** HPWS are positively related to employees' IWB.

The Role of Organizational Climate for Innovation

Organizational climate has been defined as employees' shared perceptions of the policies, practices, and processes that inform employees about how they are to be rewarded and about which behaviors are endorsed and expected by organizational leaders (Ostroff et al. 2003; Schneider et al., 2011; Schneider et al., 2013). Importantly, the concept of organizational climate should be differentiated from the broader concept of organizational culture. While organizational culture describes the organization's underlying characteristics in terms of prevailing norms, values and beliefs, the climate of the organization represents the more visible part of organizational culture.

This research focuses on the organizational climate for innovation (Siegel & Kaemmerer, 1978; Shanker et al., 2017). According to a notable study by De Jong (2006), which was based on the interviews of CEOs of knowledge-intensive service organizations, it was reported that organizational climate for innovation is an important precursor to the emergence of IWB. In another study, West and Rickards (1999) found that the work environment of the organization can promote creative and innovative work behavior among employees. Other studies have also found that the organizational climate for innovation had a positive effect on organizational innovation (e.g., Amabile et al., 1996; Nijhof et al., 2002; West & Anderson, 1996). The findings from these studies are consistent with the tenet of social learning theory (Bandura, 1989), which indicates that individuals will learn and emulate certain behaviors (e.g., innovative behavior) through observing the behavior of significant others in the work environment.

This study proposes that organizational climate for innovation will mediate the relationship between HPWS and IWB**.** In particular, it is expected that organizations characterized by higher levels of HPWS will be able to foster an organizational climate of innovation by providing time and resources for employees to generate, share, and experiment with innovative ideas and solutions while also rewarding them for their creativity so that they need not fear making mistakes. Albrecht and Hall **(**1991**)** indicated that proposing a new idea to the organization can be viewed as a risky business since it highlights a disruption of the current order**,** possibly resulting in conflict or even confrontation**.** When failure and mistakes are not permitted, employee creativity is likely to be stifled**.** Furthermore, organizations with established HRM practices will be more likely to provide employees with ample opportunities to encounter challenging work that stimulates creativity (Tang et al., 2017; Jiang et al., 2012). Based on the above reasoning and empirical findings, it is

expected that the relationship between HPWS and IWB will be mediated by an organizational climate for innovation. This leads to the following hypotheses.

Hypothesis 2: HPWS are positively related to an organizational climate for innovation.

Hypothesis 3: Organizational climate for innovation mediates the relationship between HPWS and IWB.

The Role of Psychological Empowerment

Psychological empowerment can be viewed as an individual's belief in the ability to succeed in one's work, which can be achieved through four specific cognitions: perceived competence, job meaning, autonomy, and perceived impact (Spreitzer, 1995). Competence refers to the degree to which one believes that one is capable of performing job duties effectively, whereas meaning refers to the degree to which one believes that his or her work is important. Autonomy refers to the extent to which one believes one can perform his or her jobs autonomously without others looking over his or her shoulders. Finally, perceived impact refers to the degree to which one believes one can have a positive impact on the immediate work environment.

The core principle of self-determination theory (SDT) (Deci & Ryan, 2000) is well-aligned with the concept of psychological empowerment. In particular, SDT is based on the idea that the most sustainable type of work motivation is "intrinsic" or autonomous motivation. In order to become intrinsically motivated, at least three psychological needs must be satisfied: (1) the need for competence (i.e., improving skills and abilities), (2) the need for autonomy (i.e., psychological freedom and the ability to use one's discretion in how to perform one's job), and (3) the need for relatedness (i.e., meaningful relationships with others). According to Deci and Ryan, individuals must believe that (1) they are able to fulfill their work responsibilities, (2) that they can autonomously use their own judgment in their work, and (3) that they are also cared for in order to feel intrinsically and autonomously motivated.

Accordingly, this study proposes that HPWS will empower employees in a variety of ways. For example, providing employees with critical job-related skills can boost their sense of self-efficacy and competence, whereas the ability to share information about one's work with others will make employees feel that their jobs are significant and meaningful. Additionally, self-managed teams can promote the perception that employees can work independently. Indeed, Chamberlin, Newton, and Lepine (2018) found that psychological empowerment is an important mediator between HPWS and favorable organizational outcomes in their meta-analysis. Therefore, the current study presents the following hypotheses:

Hypothesis 4: HPWS are positively related to psychological empowerment

Hypothesis 5: Psychological empowerment mediates the relationship between HPWS and IWB.

METHODOLOGY

Sample and Data Collection

In order to examine the study hypotheses, data were collected from six major telecommunication organizations in Thailand, including three public telecommunications organizations (NTBC, CAT and TOT) and three leading mobile operators (AIS, TRUE and DTAC) (see Table 1). Selection of the study sample was based on a multi-stage sampling method. First, a proportional stratified sampling procedure was carried out to draw the sample from seven regions in Thailand, including Bangkok and its surrounding areas, as well as the North, Central, East, West, Northeast, and southern regions. In the second stage, a non-proportional stratified random sampling technique was used to draw the sample from

each of the organizations.

Survey questionnaires were sent both online and via postal mail to the employees in these organizations. The survey questionnaire was carefully crafted by the authors based on a thorough review of the literature. In particular, out of the 810 questionnaires distributed to the three public telecom organizations by postal mail, a total of 300 questionnaires were returned after a period of three months, resulting in a 37.03% response rate. Furthermore, the survey questionnaires were distributed to the three mobile companies via Line groups with a total of 410 questionnaires being returned after a period of three months. Thus, the final sample for the current research consisted of 710 respondents.

Measurements

HPWS were measured with 27 items that were drawn from several previous studies (e.g., Chumphong & Potipiroon, 2019; Nybakk & Jenssen, 2012). Specifically, this measurement instrument covers 3 domains of HR practices (3 items for each specific area) including recruitment and selective hiring, training and development, rewards and compensation, performance review, self-managed team members, communication, participation in decision-making, career development and promotion, and job autonomy. These HRM practices are consistent with the ability-motivation-opportunity (AMO) framework discussed earlier. Organizational climate for innovation was measured using the scale developed by Oke, Prajogo and Jayaram (2013). Psychological empowerment was assessed using Spreitzer's (1995) 12-item scale comprising four dimensions: autonomy, competence, impact, and meaning. Finally, innovative work behavior (IWB) was measured using De Jong and Den Hartog (2010)'s 12-item scale comprising four dimensions: idea exploration, idea generation, idea promotion, and idea implementation, for innovation. All of these measurements were based on a 5-point Likert-scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

DATA ANALYSIS

First, the study variables' validity and reliability were examined based on confirmatory factor analyses (CFAs). It should be noted that the measures that contain more than 5 items (HPWS and psychological empowerment) were combined into composite scores using parceling procedures (i.e., items were combined within their respective subscales) (Little, Cunningham, Shahar, & Widaman, 2002). The hypotheses were then tested using Structural Equation Modeling (SEM). To evaluate model fits, several indices were utilized, including the overall model's chi-square, CFI, TLI, and RMSEA**.** In particular, a sequential mediation test was carried out to

Table 1 Telecommunication Organizations and Respondents Demographics

Organizations	Population	Frequency	Percent (%)
Private Sector	18,000	300	
-NTBC	1,500	105	14.8
-CAT	4,500	97	13.7
-TOT	12,000	98	13.8
Public Sector	37,500	410	
-AIS	10,500	112	15.8
-TRUE	23,000	74	31.5
-DTAC	4,000	224	10.4
TOTAL	55,500	$N = 710$	100

Note: NTBC = The National Broadcasting Telecommunication Commission, CAT = CAT Telecommunication Public Company Limited, TOT = TOT Public Company Limited, AIS = Advanced Info Service Public Company Limited, TRUE = True Move H Universal Communication Public Company Limited, DTAC = Total Access Communication Public Company Limited.

Table 2 Telecommunication Organizations and Respondent Demographics

Respondents		Frequency	Percent
Sector	Public Sector	300	42.30
	Private Sector	410	57.70
Gender	Male	399	56.20
	Female	311	43.80
Age (years)	Less than 30	81	11.40
	30 - 40	249	35.10
	41 - 50	230	32.40
	51 – 65	150	21.10
Regions	Bangkok and its vicinity	106	14.90
	Central	57	8.00
	North	90	12.70
	South	233	32.80
	Northeast	101	14.20
	East	107	15.10
	West	16	2.30
Employee Type	Full-time workers	570	80.30
	Temporary workers	140	19.70
Education	Ph.D	4	6.00
	Master's	138	19.40
	Bachelor's	501	70.60
	Below Bachelor's	67	9.40
Tenure (years)	3 - 6 years	109	15.40
	7 - 9 years	94	13.20
	9 - 12 years	53	7.50
	13 – 15 years	94	13.20
	More than 15 years	51	7.20
Total		***N* = 710**	**100.00**

examine the indirect effect of HPWS on IWB (Preacher & Hayes, 2008). All the analyses were conducted in Mplus Version 7.2 Software (Muthén & Muthén, 1998).

RESULTS

The Measurement Model

Since the data were collected from the same source at the same time, the current analysis could be affected by the common method bias (CMB). Thus, Harman's single-factor test was conducted to examine the presence of CMB. This test assumes that CMB is present when one factor accounts for more than 50% of the variance of the items in the factor analysis (using unrotated matrix). Based on the unrotated principal component factor analysis, the results showed that the first factor accounted for 41.51% of the variance. This suggests that CMB is unlikely to be a serious issue.

Next, a CFA was conducted to assess the reliability and validity of the study constructs. The results showed that the proposed four-factor model suited the data quite well ($\chi 2$ = 952.26, *df* = 265, p.001; CFI =.0.95; TLI =.94; RMSEA =.05, and SRMR = 0.04) (Hu & Bentler,1999). Consistent with the CFA, the bivariate correlations between all of the variables were found to be within a reasonable range (r < 0.70) (see Table 3). All the Cronbach's alphas ranged from .81 to .92, indicating that the constructs were reliable (Nunnally, 1978).

The item loadings on their respective constructs were examined to assess the convergent validity of the measurement items (Hulland, 1999). Table 4 shows that the factor loadings were mostly above .70, ranging from .66 to .92. The extracted average variance (AVE) ranged from .59 to .90, exceeding the .50 cut-off (Fornell & Larcker, 1981). Composite reliabilities (CR) were also found to range between.85 and .96, which exceeded the recommended value of .60 (Bagozzi & Yi, 1988). Furthermore, the discriminant validity of the constructs was assessed using the square roots of the AVEs **(**Fornell & Larcker, 1981**).** As shown in Table 3, the size of the square roots of the AVE values was greater than the correlations shared between the construct and other constructs in the model**.**

Furthermore, in line with Henseler, Ringle, and Sarstedt (2015), this study used the Hetrotrait-Monotrait (HTMT) ratio to further examine the discriminant validity of the study constructs. Ideally, the HTMT ratio should be 0.85 (Franke & Sarstedt, 2019). As shown in Table 5, all the HTMT ratios were below 0.85 except for that of HPWS and the organizational climate for innovation. Despite this finding, the discriminant validity of the constructs was deemed satisfactory when viewed in conjunction with the size of the square roots of the AVEs discussed above**.**

The Structural Model

The hypothesized structural model was then evaluated. Table 6 and Figure 1 reveal that four of the six paths were significant in the expected directions. HPWS demonstrated a direct positive association with the organizational climate for innovation (β = 1.377, p <.001) and psychological empowerment (β= .493, p <.001), but not with IWB (β = 1.40, p >.05). Organizational climate for innovation was also associated with psychological empowerment (β = .105, p <.001) but not with IWB (β =.128, p >.05), whereas psychological empowerment had a positive association with IWB (β = 0.513, p <.001). As shown in Figure 2, the results revealed that the proposed theoretical model could explain approximately 38.9 % of the variance in organizational climate for innovation, 39.5% of the variance in psychological empowerment, and 20.8 % of the variance in IWB. These findings provide support for Hypotheses 4 and 5.

Furthermore, a test of sequential mediation was conducted to examine the indirect effect of HPWS on IWB. As can be seen in Table 7, the indirect effect of HPWS on IWB via psychological empowerment was statistically significant (.253, 95% CI [.186, .382]). Although the indirect effect of HPWS on IWB via the mediating role of organizational climate for innovation was non-significant (.176, 95% CI [.078,.0316]), the results showed that the sequential mediating roles of organizational climate for innovation and psychological empowerment were significant in the predicted direction (.074, 95% CI [.014, .152).

Table 3 Descriptive Statistics, Correlations, Reliability Estimates, and the Square Root of the AVE

Variables	*M*	*SD*	1	2	3	4
1. High Performance Work System	4.05	0.60	(0.95)			
2. Organizational climate for innovation	4.02	0.71	.68**	(0.81)		
3. Psychological empowerment	4.14	0.55	.64**	.67**	(0.77)	
4. Innovative work behavior	4.04	0.57	.64**	.67**	.67**	(0.88)

Note**: ** indicates statistical significance at the 0.01 level; the numbers in parentheses are the square roots of the AVE (√ AVE).

Table 4 Factor Loadings, AVE and CR

Variables	Measurement Items	Factor Loadings
High Performance Work Systems	*To what extend do the following statements describe your perceptions about HPWS implemented at your organization?* *AVE = .90 ; CR = .96*	
	-Ability-enhancing HR practices	0.93
	1.Recruiting and Selection (3 Items)	0.76
	2. Training and Development (3 Items)	0.81
	Motivation-enhancing HR practices	0.99
	3.Compensation or Reward Benefit (3 Items)	0.85
	4.Performance Appraisal (3 Items)	0.95
	5.Career Development and Promotion (3 Items)	0.83
	- Opportunity-enhancing HR practices	0.92
	6. Participation in Decision Making (3 Items)	0.93
	7. Communication Information Sharing (3 Items)	0.76
	8. Self- Managed Teams (3 Items)	0.81
	9. Job Autonomy (3 Items)	0.99
Organization Climate for Innovation	*To what extend do you feel the following?* *AVE = .65 ; CR = .88*	
	1.Our company provides time and resources for employees to generate, share/exchange and experiments with innovative ideas/solutions	0.82
	2.Our employees are working in diversely skilled work groups where there is free and open communication among the group members	0.87
	3.Our employees frequently encounter non routine and challenging work the stimulates creativity	0.76
	4.Our employees are recognized and rewarded for their creativity and innovative ideas	0.76
Psychological Empowerment	*To what extend do you feel the following?* *AVE =.59; CR = .85*	
	1. Meaning	0.82
	2. Competence	0.90
	3. Self-Determination/Autonomy	0.74
	4. Impact	0.57
Innovative Work Behavior	*To what extend do you engage in the following behaviors?* *AVE = .79; CR = .94*	
	1. Exploration	0.87
	2 Generation	0.83
	3. Promotion	0.89
	4. Implementation	0.96

***Note**:* All the factor loadings were significant at the $p < 0.001$ level; AVE = Average Variance Extracted; CR= Composite Reliability.

Table 5 Discriminant Validity (HTMT)

Latent Variables	1	2	3	4
1. High Performance Work Systems	-			
2. Organizational climate for innovation	.86	-		
3. Psychological empowerment	.73	.74	-	
4. Innovative work behavior	.70	.73	.77	-

Table 6 Structural Equation Model Path Coefficients

Estimate Part			Estimate	S.E.	*t*	*p*-value
HPWS	→	OC	1.377	0.082	16.832	0.000***
HPWS	→	EMPOW	0.493	0.087	5.647	0.000***
HPWS	→	IWB	0.140	0.083	1.692	0.091
OC	→	EMPOW	0.105	0.053	1.989	0.047*
OC	→	IWB	0.128	0.047	2.702	0.070
EMPOW	→	IWB	0.513	0.073	7.015	0.000***

Note: *, **, and *** denote statistical significance at the 0.05, 0.01, and 0.001 levels respectively; Estimate is an estimate; S.E. is the estimated standard error.

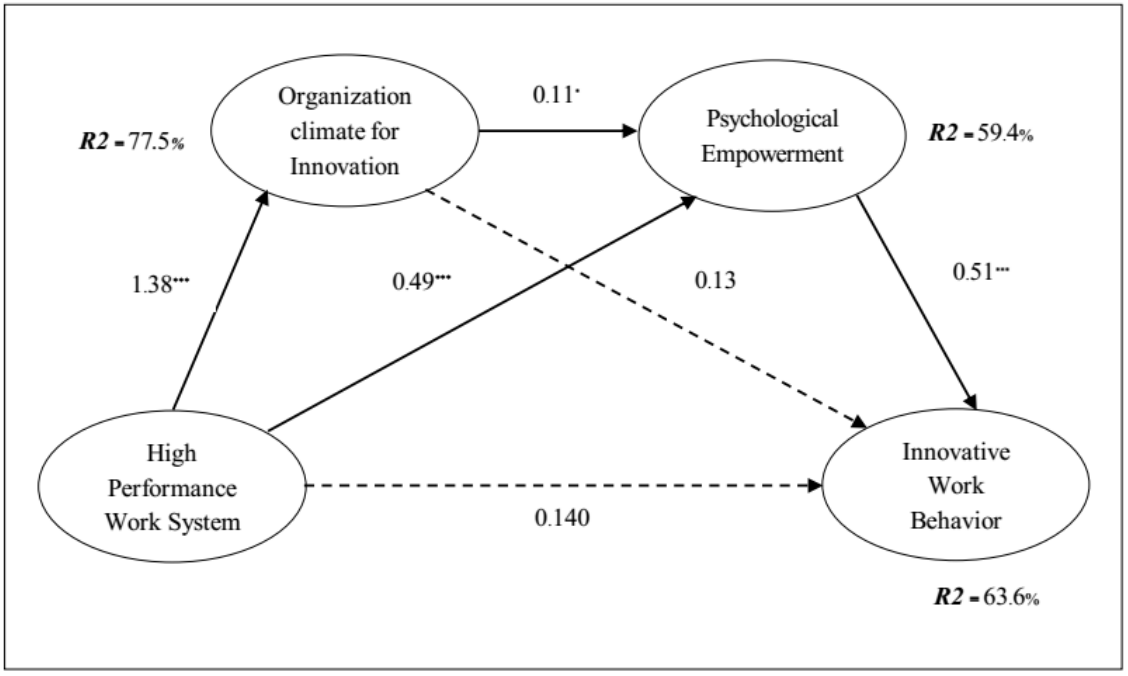

Figure 2 Structural Equation Model Results.

Note*:* Path coefficients are standardized; Dashed lines represent non-significant paths. ** $p < .01$; *** $p < .001$; ns = non-significant *(*$p > .05$).

Table 7 Total, Direct, and Indirect Effects

Hypothesized Paths	Direct Effect	Indirect Effect	S.E.	*p*-value	95% (CIs)	
					LLCI	ULCI
HPWS → OC →IWB	-	0.176	0.066	0.007	0.078	0.316
HPWS → EMPOW →IWB	-	0.253	0.056	0.000***	0.186	0.382
HPWS →OC → EMPOW →IWB	-	0.074	0.038	0.050**	0.014	0.152
HPWS →WB	0.140	-	0.083	0.091	0.005	0.308
Total Indirect Effect	-	0.502	-	-	0.427	0.701
Total Effect	-	0.642	-	-	0.684	0.758

Note** denotes statistical significance at 0.01, *** denotes statistical significance at 0.001; OC = organizational climate for innovation; EMPOW = psychological empowerment; S.E. is the approximate standard error; CI = Confidence Interval

DISCUSSION

This research aimed to investigate how HPWS influences employees' innovative work behavior (IWB) in the telecom industry in Thailand. The results showed that HPWS exerted a positive influence on IWB via the sequential mediating roles of organizational innovative climate and employees' psychological empowerment. This study is among the first to conduct a large-scale study on the relationship between HPWS and IWB in the telecom industry. As discussed below, this study makes several theoretical and practical implications for HRM research.

First, this study contributes to HRM literature by focusing on a bundle of HR practices that are critical to promoting employees' innovative behaviors (Appelbaum et al., 2000; Jiang et al., 2012a; Lepak et al., 2006). In particular, this study focuses on a variety of HR practices that may influence IWB: (1) ability-enhancing practices including selective staffing and training and development (Kroon et al., 2013; Raidén et al., 2006), (2) motivation-enhancing practices including compensation, performance appraisal, and career advancement (Gavino et al., 2012; Raidén et al., 2006) and (3) opportunity-enhancing practices including participation in decision making, information sharing, self-managed teams and job autonomy, and involvement activities, are examples of opportunity-enhancing HR approaches (Kroon et al., 2013).

The current findings suggest that organizations which aim to promote IWB must focus on a rigorous recruitment and selection process in order to attract and select individuals with innovative and growth mindsets (Chang, & Cheung, 2010; De Spiegelaere et al., 2012). Training is also critical in equipping employees with necessary knowledge and skills in order to innovate (e.g., Bendickson et al., 2017; Evans & Davis, 2005; Pittino et al., 2016). For instance, both in-house and outsourced training programs on design thinking can be provided to employees. At the same time, development opportunities must be provided to employees. For example, organizations can provide developmental opportunities involving hands-on experience in creating new products in the form of ad-hoc teams or a special taskforce. Organizations can even sponsor creativity contests to inspire innovation among employees. Furthermore, compensation and performance appraisal systems must be properly tied to the behavior of employees (i.e., innovation-related performance) (Chuang & Liao, 2010; Snell & Bohlander, 2010). However, employee innovative behavior is unlikely to occur without other supportive HR practices including the promotion of autonomous work teams and participation programs (e.g., Bowen & Ostroff, 2004; De Spiegelaere et al.,

2014; Jimenez and Sanz, 2008; Purcell et al., 2003). A great example is Google's "20% time" rule, which encourages employees to spend 20% of their time working on special projects that they believe will benefit Google (Walker, 2011).

Secondly, this study adds to the HRM literature by showing that the influence of HPWS on IWB is not a direct one but occurs indirectly via employees' perceptions of the work environment as well as their attitudes and work motivation. This is consistent with previous research, which has shown that HPWS is not significantly related to IWB (Caniëls and Veld, 2019). These findings align with the view that employee perceptions, attitudes and motivation are important elements in the link between HPWS and IWB (e.g., Battistelli et al., 2014; De Spiegelaere et al., 2014; Veenendaal & Bondarouk, 2015). In particular, the current research sheds important light on the sequential mediating roles of organizational climate for innovation and psychological empowerment as an important bridge linking HPWS and IWB. That is, it was observed that the relationship between HPWS and IWB was fully mediated (rather than partially mediated). While previous research has elucidated the individual mediating effects of organizational climate for innovation and psychological empowerment (e.g., Afsar & Badir, 2016; Mok&Au-Yeung, 2002; Shanker et al., 2017), this research is among the first to bring light to their sequential mediating effects. Although the mediating role of organizational climate for innovation was not significant, it further reinforces the importance of considering psychological empowerment in the HPWS-organizational climate-IWB relationship. Part of the reason for the non-significance of the mediating effect of psychological empowerment could be that this variable may be a distal force predicting IWB, whereas psychological empowerment may serve as a more proximal predictor of IWB. The current findings are consistent with SDT (Deci & Ryan, 2000), which posits that in order for employees to feel that they have the volition to determine their own course of actions—a strong requirement for innovation, it is important for them to feel that they are autonomous (e.g., I can think independently), competent (e.g., I can think creatively) and well-connected with others (e.g., I am surrounded by like-minded peers who are ready to support my ideas).These fundamental needs can be satisfied when organizational climate is supportive of innovation. As noted by Spreitzer (1995) and Zhang and Bartol (2010), increased self-determination and psychological empowerment are important elements that help promote workplace innovation and employee creativity.

STUDY LIMITATIONS

This study has some limitations that future research should consider. First, all the variables were collected from a single source (employees), which may introduce the issue of CMB. Although it was shown that this was unlikely to be a serious problem in this research, future research should try to collect data from a variety of sources, including executives or HR managers who have a bird's eye view of their organizations. Secondly, although sequential mediation was hypothesized, it is important to acknowledge that, based on the current design, causality cannot be confidently inferred. For example, employees' innovative work behavior may in fact promote an organizational climate for innovation. Thus, future research may consider collecting data at multiple time points. Thirdly, this research assumes that all the HR practices were internally aligned (i.e., using a single set of behavioral competencies related to innovative behavior). Future research should also examine the extent to which HR practices are internally aligned and whether internal alignment also plays a role in predicting the variation in IWB. Finally, researchers should consider conducting in-depth interviews with C-level executives who are involved in promoting organizational innovation, or HR managers, to learn about the best practices currently being employed.

CONCLUSION

This study adds to HRM literature by illuminating the relationship between HPWS and employees' innovative work behavior, including the mediating roles of an organizational climate for innovation and psychological empowerment. The results provided general support for the proposed sequential mediation model. Future research should continue this line of inquiry in order to understand the role of HR practices in promoting employee innovation.

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