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## DETERMINANTS OF RADICAL AND INCREMENTAL INNOVATION: THE ROLES OF HUMAN RESOURCE MANAGEMENT PRACTICES, KNOWLEDGE SHARING, AND MARKET TURBULENCE

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### ABSTRACT

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Aim/Purpose	Given the increasingly important role of knowledge and human resources for firms in developing and emerging countries to pursue innovation, this paper aims to study and explore the potential intermediating roles of knowledge donation and collection in linking high-involvement human resource management (HRM) practice and innovation capability. The paper also explores possible moderators of market turbulence in fostering the influences of knowledge-sharing (KS) behaviors on innovation competence in terms of incremental and radical innovation.
Background	The fitness of HRM practice is critical for organizations to foster knowledge capital and internal resources for improving innovation and sustaining competitive advantage.
Methodology	The study sample is 309 respondents and Structural Equation Model (SEM) was used for the analysis of the data obtained through a questionnaire survey with the aid of AMOS version 22.

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Contribution	This paper increases the understanding of the precursor role of high-involvement HRM practices, intermediating mechanism of KS activities, and the regulating influence of market turbulence in predicting and fostering innovation capability, thereby pushing forward the theory of HRM and innovation management.
Findings	The empirical findings support the proposed hypotheses relating to the intermediating role of KS in the HRM practices-innovation relationship. It spotlights the crucial character of market turbulence in driving the domination of knowledge-sharing behaviors on incremental innovation.
Recommendations for Practitioners	The proposed research model can be applied by leaders and directors to foster their organizational innovation competence.
Recommendations for Researchers	Researchers are recommended to explore the influence of different models of HRM practices on innovation to identify the most effective pathway leading to innovation for firms in developing and emerging nations.
Impact on Society	This paper provides valuable initiatives for firms in developing and emerging markets on how to leverage the strategic and internal resources of an organization for enhancing innovation.
Future Research	Future studies should investigate the influence of HRM practices and knowledge resources to promote frugal innovation models for dealing with resource scarcity.
Keywords	high-involvement HRM, knowledge sharing, knowledge donating, knowledge collecting, radical innovation, incremental innovation

## INTRODUCTION

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In the increasingly complex and swiftly changing business environment, scholars and practitioners consider improving innovation capability as the optimal and strategic orientation for firms to create value and keep a competitive advantage in the long run (P. B. Le & Lei, 2019). Innovation capability is widely accepted as a dynamic competence that allows firms to adjust and evolve their services and products aimed at meeting customers' needs (Gui et al., 2022; Than et al., 2023). Consequently, firms are attempting to improve their innovation capability to succeed in dealing with external turbulences and environments that might induce negative effects on organizational performances (Gong et al., 2021). Previous works emphasize innovation as the fundamental driver to develop the economy and achieve competitive advantage for both firms and nations (P. B. Le & Le, 2023; P. B. Le & Lei, 2019; D. K. Nguyen et al., 2019; T. N. Nguyen et al., 2022). Yet, firms in emerging and developing markets often struggle to become real innovators rather than imitators because the majority of these firms are small and medium sizes, with a lack of resources and capital for successful innovation (Gui et al., 2021; Lei et al., 2020). Such a situation has required researchers and practitioners to devote more effort to detecting the finer antecedents, new mechanisms, and optimal solutions to improve innovation capability for firms in those nations (P. B. Le, 2021; Than et al., 2023). Among the sources for predicting the innovation capability of firms, scholars highlight the crucial role of human and knowledge capital as the strategic forces for organizations to pursue and improve their innovation competence (Gui et al., 2022; Singh et al., 2021). Consequently, to shed light on the characters and influences of these possible constructs, this paper attempts to elucidate the relationship between high-involvement human resource management (HRM) practices and specific forms of innovation capability; namely, incremental and radical innovations through the mediators of explicit and tacit knowledge sharing (KS). The paper is anticipated to increase the theory and initiatives of innovation management through the roles of HRM practices and knowledge management by many motives.

First, knowledge and human resources are regarded as valuable and core assets for organizations to initiate worth and attain competitive advantage in swiftly changing environments (P. B. Le & Lei, 2019; Singh et al., 2021). HRM practices serve as the foremost drives for organizations to formulate and develop the necessary skills, attitudes, and behaviors of employees for pursuing innovation and achieving key outcomes (C.-J. Chen & Huang, 2009; Than et al., 2023). Nevertheless, there is wide recognition of the significance of HRM practices toward the key goals of organizations of flexibility, productivity, and organizational performance. Very few empirical studies are interested in explaining the latent impacts of high-involvement HRM practices on firms' innovation capability (Cao et al., 2022; Waheed et al., 2019). The literature indicates that the possible differential impacts of HRM practices on specific forms of innovation have not yet been adequately investigated by previous studies (Cao et al., 2022; Haneda & Ito, 2018). For that reason, to increase the understanding of how high-involvement HRM practices can influence certain aspects of innovation such as incremental and radical innovation, the first research question arises:

*RQ1. Do high-involvement HRM practices significantly predict incremental and radical innovations?*

Secondly, HRM practices contribute to creating the appropriate mechanism and climate to cultivate employees' behaviors of sharing knowledge and ideas for achieving significant changes and innovations (T. T. Le & Le, 2023; Tan & Nasurdin, 2011). Relatively few works have explained how HRM practices, directly and indirectly, influence the innovation competence of firms via KS behaviors (Cao et al., 2022; Kaabi et al., 2018). In particular, Than et al. (2021) underscored the necessity of filling the theoretical and practical gaps in the roles of HRM practices and KS behaviors in relation to organizational capability for innovations. For such reason, this paper explores the possibility of the mediating roles of knowledge collection and donation in the correlation between high-involvement HRM practices and innovations by answering the following research question:

*RQ2. Do KS behaviors mediate the influence of high-involvement HRM practices on incremental and radical innovations?*

Thirdly, emerging and developing economies are supposing an increasingly preeminent spot in the global economy. Firms in these nations are facing many significant challenges with resource scarcity and the instability of the business environment (P. T. Le & Le, 2022; Than et al., 2023). Prior studies revealed that environmental factors are important ones affecting the efforts of organizations to pursue innovations (Iqbal et al., 2021; Naranjo-Gil, 2009). Among those, market turbulence is one of the major variables considerably controlling the innovation outcomes and degrees of firms (Iqbal et al., 2021; Sung & Choi, 2021). It involves persistent shifts in the dislikes and likes of customers, cost/price systems, and the pattern of competing firms (Iqbal et al., 2021; Silva & Caetano, 2014). Accordingly, if firms are capable of anticipating market turmoil accurately, they would promote solutions to stimulate KS activities for innovations (P. T. Le & Le, 2022). However, so far, there have been few studies interested in examining the ability of market turbulence to inhibit or promote innovation capability in relation to knowledge resources and KS (P. T. Le & Le, 2022; Shehzad et al., 2022). Accordingly, this paper attempts to explore and explain the possible moderating roles of market turbulence in the KS-innovation relationship. The findings of such efforts are expected to assist firms in emerging and developing economies to have proper knowledge of environmental influences for successful innovation. Accordingly, the third research question is:

*RQ3. Does market turbulence moderate the connection between KS and innovation capability?*

Resource-based theory (RBT) indicated that firms' superior performance depended upon the unique bundle of strategic resources that they possess and deploy effectively (Barney, 1991). The literature considers knowledge and human capital among the strategic, valuable, and hard-to-imitate resources to be used with the aim of improving innovation and competitive advantage (Barney & Wright, 1998; Ndlela & Du Toit, 2001; Than et al., 2023; S. Wang & Noe, 2010). Accordingly, to address the above research questions, this paper applies RBT and Structural Equations Modelling (SEM) to examine the

relationship between the latent variables based on data from 309 respondents from 125 manufacturing and service companies in Vietnam. This study expects to enrich the theory of innovation management by showing a new approach to fostering innovation capability for firms in emerging and developing nations.

To answer the above research questions, this paper reports on a survey study that examines the relationship between the latent variables of human resource management practices, knowledge sharing, market turbulence, and specific forms of innovation. This study is expected to enrich the theory of innovation management by showing a new approach to following and fostering innovation capability for firms in emerging and developing nations. The remainder of the paper is organized as follows. First, the section on the literature review explores the literature and hypotheses. Second, the section on methodology describes the research procedure to test the model and data collection. Third, the section on findings analyzes the data and discusses the empirical results. Finally, this study provides conclusions, managerial implications, and limitations, and makes proposals for future research in the discussion section.

## LITERATURE REVIEW

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### *THE INFLUENCE OF HIGH-INVOLVEMENT HRM PRACTICES ON INNOVATION CAPABILITY*

Innovation capability has been recognized as a significant factor for firms in developing and emerging markets to achieve competitive advantage in the 21st century because it enables organizations to meet the changing needs of customers by offering them required products and services (Gui et al., 2022; P. B. Le et al., 2020). It is defined as the capability of firms in generating new services and products, working operations, and management processes to increase performance and attain competitiveness (Drucker, 2014; T. T. Le & Le, 2023; Than et al., 2023). Prior studies distinguish innovation capability in different categories (Anderson et al., 2014; Tsai et al., 2001). However, incremental and radical innovations are recognized as two distinct and crucial degrees of innovation allowing firms to adapt to the swift change and turbulence of the markets (P. B. Le et al., 2020; P. T. Le & Le, 2022). According to P. T. Le and Le (2022), “radical innovation is the high degree of novelty that changes the whole order of things referring to the acquisition and application of new knowledge to develop completely new products or services for new customers or emerging markets” and “incremental innovation is the low degree of a novelty given from small changes in technology and product improvements”. To put it simply, radical innovation involves the core while fundamental and incremental innovations refer to minor innovations originating from available products, services, knowledge, and platforms.

HRM practices operated properly will always bring more positive results than others, thus organizations are implored to choose and adopt the best practices (Cao et al., 2022; Than et al., 2023). Strategic literature shows two main perspectives by which firms can apply to govern and establish connections with individuals in their organizations (Camelo-Ordaz et al., 2011). First, the perspective based on transaction cares about the implementation of HRM practice to stimulate the short-term interchange among individuals as well as the relationship between employees and the organization. In contrast, high-involvement HRM practice emphasizes the need for developing long-term relationships between employees and the organization (Cao et al., 2022). The literature has recognized high-involvement HRM as a useful management tool emphasizing the involvement of employees as a key expediency of practice to enrich their skills, knowledge, and motivation (Rubel et al., 2017; Shin et al., 2018). Significant findings on the effect of HRM practices show that firms should focus on developing available assets, including HRM practices and knowledge resources, to stimulate innovation competencies and competitive advantages (Shin et al., 2018; Than et al., 2021).

HRM practice serves as an apparatus for organizations to leverage human and other organizational resources to drive innovation capabilities. As expected, many previous studies on this topic have indicated the meaningful influence of HRM practice on innovation capacity. For instance, based on the empirical data of 174 Spanish companies, Jiménez-Jiménez and Sanz-Valle (2008) pointed out that, by establishing a suitable HRM system, firms can pursue and enhance their ability to innovate in different paradigms. Moreover, C.-J. Chen and Huang (2009) highlighted the important role of HRM practices as a strategic approach to influencing and transforming capacities, behaviors, and attitudes of employees toward certain goals of organizations such as innovations. In other words, effective HRM practices help firms create catalysts and appropriate climates to cultivate innovation activities among employees. De Winne and Sels' (2010) study, using data from 637 firms in Belgium, revealed that HRM practice acts as a decisive antecedent of innovation initiatives in Belgian start-ups. Their findings underscored the importance of the high range of HRM practices in comparison with the low human resource of Belgian start-ups in pushing innovations. Diaz-Fernandez et al.'s (2017) longitudinal study using a survey of industrial strategic behaviors in Spanish firms from 2001 to 2008 found that HRM practices significantly contribute to increasing innovation as it helps firms effectively employ a majority of available assets and resources for prompting innovation competencies. According to Aman et al. (2018), one of the important aims of HRM practices is to bring a conducive climate to foster the necessary skills and abilities of employees for pursuing innovation. Their findings showed the benefits of HRM practice in actively increasing employee knowledge and innovation abilities in the banks of Vehari, Pakistan. Notably, Camelo-Ordaz et al. (2011) indicated proof of considerable effects and significant link of high-involvement HRM practice with the degrees of knowledge sharing and innovation of organizations. Similarly, according to Yasir and Majid (2020), firms might apply a high-involvement human resource approach to improve their innovation outcomes by transforming existing capabilities into superior competencies and behaviors from employees for innovations. According to the RBV, HRM practices are an essential part of all resources in an organization to drive innovation and maintain competitive advantage (Iqbal et al., 2021). The work of Lei et al. (2021) in an emerging market pointed out that HRM practices remarkably contribute to increasing exploitative and exploratory innovation capability through their positive impacts on the processes of acquiring, sharing, and applying knowledge of employees in organizations. Typically, the findings of Cao et al. (2022) showed that high-involvement HRM practice is necessary and a smart choice to boost innovation capability for organizations in developing and emerging markets by considerable influences on tacit and explicit KS. These arguments support the positive HRM-innovation relationship. This study, therefore, proposes the following hypotheses:

**H1a: High-involvement HRM practices positively predict radical innovation.**

**H1b: High-involvement HRM practices positively predict incremental innovation.**

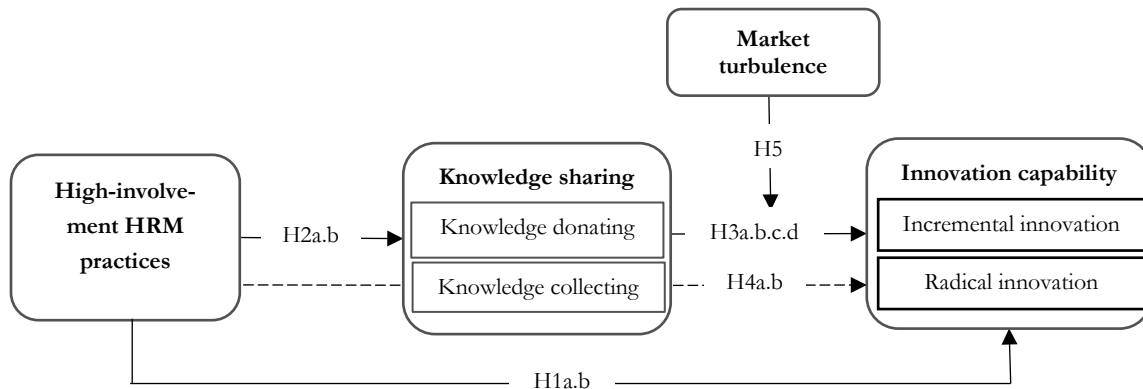
### ***MEDIATING ROLE OF KS BETWEEN HIGH-INVOLVEMENT HRM PRACTICES AND INNOVATION CAPABILITY***

Knowledge sharing is an important element that determines the degree of success of knowledge management and innovation initiatives (P. B. Le & Lei, 2019). Accordingly, how to improve KS among employees is a well-discussed topic among scholars and practitioners in the field of organizational behavior (P. B. Le et al., 2022; Phong & Son, 2020; Singh et al., 2021). The current literature defined KS as the process of exchanging knowledge among employees in organizations that include both processes of providing knowledge to others and searching for knowledge from others (P. B. Le & Nguyen, 2023; S. Wang & Noe, 2010). Van den Hooff and De Ridder (2004) divide KS behaviors into two categories, namely, knowledge donation and knowledge collection. According to Le and Lei (2017), the former “reflects the voluntary and proactive degree of individuals in communicating or supplying personal intellectual capital to colleagues” while the latter refers to the process by which individuals gather “skills and knowledge from colleagues to learn what their colleagues know”.

HRM practices involve the management procedures that enable firms to take possession of valued knowledge and higher innovative performance (Singh et al., 2021; Than et al., 2023). HRM practice plays an important role in constituting a favorable environment to foster KS behaviors among individuals in organizations (Cao et al., 2022; Singh et al., 2021). As claimed by Soliman and Spooner (2000), HRM practice helps organizations detect knowledge-related gaps, and support the process of acquiring, promoting, applying, and regenerating knowledge capital of employees. In addition, HRM practices assist organizations in creating a positive climate to stimulate information flows aligned with organizational goals. According to Camelo-Ordaz et al. (2011), HRM practice boosts the formation of a social environment within an organization that gives support and promotes KS among individuals for development. Their findings revealed the substantial effect of high-involvement HRM practice on employee willingness to share knowledge and expertise. Jiménez-Jiménez and Sanz-Valle (2008) asserted that firms need to develop an appropriate HRM approach to increase KS activities because it helps firms create a beneficial climate for employees to acquire and share explicit knowledge. Based on a qualitative approach, Gope et al. (2018) contended that the important achievement in knowledge resources as a result of HRM practices would inspire and motivate employees to share knowledge or skills with their colleagues. Cao et al. (2022) indicated that HRM practice is an optimal solution for organizations to strengthen knowledge resources and capital. Their findings showed the significant consequence of high-involvement HRM practice on both explicit and tacit KS. These arguments support a positive link between HRM practices and KS; therefore, the following hypotheses are proposed (Figure 1):

**H2a: High-involvement HRM practices significantly predict knowledge donation.**

**H2b: High-involvement HRM practices significantly predict knowledge collection.**



**Figure 1. The proposed research model**

*Note: ---- indirect effect*

Many previous academic works have denoted significant effects of KS on innovation (Sáenz et al., 2012; C. Wang & Hu, 2020). Truly, Jansen et al.'s (2006) findings showed the significant KS-innovation relationship in enabling organizations to desist from being controlled “inside their knowledge boundaries.” Sáenz et al. (2012) indicated that processes of sharing knowledge among individuals such as mentoring, coaching, communities of practice, and action rotating are some of the major approaches for Colombian and Spanish high-tech companies to enhance their innovation competence. As reported by Choi et al. (2016), the process of sharing task-oriented knowledge allows individuals to generate occasions to enrich their knowledge and novel methods of working, and thereby enhance the organizational ability to innovate. P. B. Le et al. (2020) pointed out that processes of sharing explicit knowledge contribute to creating new ideas and solutions for organizations to increase their incremental innovation capacity. Nguyen et al. (2022) justified that, by sharing new and available knowledge, individuals can learn, combine, and enhance their value of knowledge resources, then be

able to translate novel ideas into the capability of innovations. From these discussions, this study argues that KS would help organizations to augment work-related problems and utilize new knowledge for developing new products at different degrees of novelty. Accordingly, this study hypothesizes that:

**H3a: Knowledge donation positively affects incremental innovation**

**H3b: Knowledge donation positively affects radical innovation**

**H3c: Knowledge collection positively affects incremental innovation.**

**H3d: Knowledge collection positively affects radical innovation.**

The above-mentioned hypotheses bridge HRM practice-innovation relationships via the intermediating mechanism of KS behaviors. In other words, KS might serve as a mediating factor to connect the relationship between high-involvement HRM practice and certain forms of innovation. Additionally, Camelo-Ordaz et al. (2011) manifested that high-involvement HRM practice is effective to encourage KS processes of employees, thereby boosting the innovation of organizations. According to Al-Bahussin and El-Garaihy (2013), HRM practice acts as a precondition for promoting knowledge management and KS climate, hence generating organizational innovation. The findings of the empirical study of Kaabi et al. (2018) from organizations in the United Arab Emirates showed that KS activities significantly mediate the impacts of HRM practices on innovation performance. Singh et al. (2021) indicated that processes of sharing knowledge significantly mediate the effects of knowledge-based HRM practices on innovation performance. Especially, Iqbal et al. (2021) and Cao et al. (2022) argued that HRM practices are a set of activities used by the organization to manage organizational capabilities such as creating public relationships, collecting, and managing knowledge to increase innovation capability, and achieving competitive advantages. Their finding showed evidence of the partial mediating role of the process of KS and knowledge management in collecting the relationship between HRM practices and innovation capability. So, this study suggests the following hypotheses:

**H4a: KS behaviors serve as a mediator to connect the effect of high-involvement HRM practices on incremental innovation.**

**H4b: KS behaviors serve as a mediator to connect the effect of high-involvement HRM practices on radical innovation.**

### ***MODERATING ROLE OF MARKET TURBULENCE IN THE KS-INNOVATION RELATIONSHIP***

Environmental turbulence is frequently examined as unpredictable and discrete occurrences in the business environs including boycotts by environmentalists, dramatic changes in the economy, significant technological changes, customer needs, and so on (Calantone et al., 2003; Dost et al., 2019; Sung & Choi, 2021). According to P. T. Le and Le (2022), market turbulence is kind of important environmental element that alters the influence of dynamic competence and organizational factors on key outcomes and effectiveness. Therefore, how to succeed in dealing with instability and turbulent contexts is a primary priority of business leaders (P. T. Le & Le, 2022).

Market turbulence is extremely challenging and diverse. Hence, leaders are increasingly focusing on the role of innovation in strategic directions, especially in enhancing and evolving new services and products, optimizing operation conditions, and improving the reputation of the organization (P. T. Le & Le, 2022; Li, 2022). Previous studies revealed that the level of market movement opens opportunities for organizations to utilize knowledge from multifarious sources to innovate (Dost et al., 2019; P. T. Le & Le, 2022). In other words, market volatilization intensifies the influence of knowledge sources and KS activity on innovation. Recently, Shehzad et al. (2022) justified that activities of sharing explicit and tacit knowledge from superiors and peers inside an organization might help prior knowledge base and expertise become more accurate and pertinent, and their interaction

effects on innovation are more significant during market uncertainty. Based on these arguments, this study poses the hypotheses that:

**H5a: Market turbulence strengthens the impact of knowledge donation on radical innovation.**

**H5b: Market turbulence strengthens the impact of knowledge donation on incremental innovation.**

**H5c: Market turbulence strengthens the impact of knowledge collection on radical innovation.**

**H5d: Market turbulence strengthens the impact of knowledge collection on incremental innovation.**

## **METHODOLOGY**

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### ***SAMPLE AND DATA COLLECTION***

A survey questionnaire was developed to gather data and examine the validity of the proposed hypotheses. This study collected data from May to August 2022 through a survey of 125 Vietnamese manufacturing and service firms. We randomly selected these companies from the yellow pages of the Vietnamese business directory with 250,000 enterprises. The sampling technique in this study is a simple random sample by which each of the 250,000 enterprises has an equal chance of being selected as a subject. This technique is appropriate because of the ease of assembling the sample and ensures good representativeness of the population (Sharma, 2017). The authors contacted representatives of these enterprises to elucidate the research's significance, pledge to keep the survey confidential information, and suggestions for gathering questionnaires. The respondents in this study were directors, deputy managers/directors, or heads of important departments such as R&D, organization, and administration. The observable variables were modified from previous studies to evolve the preliminary list of measurements. Basically, the authors handed out 550 question sheets and acquired 435 in return during the official survey. Finally, the study collected 309 valid questionnaires (56.1%). According to Kock and Hadaya (2018), the "10-times rule" method is the most widely used minimum sample size estimation method in PLS-SEM based on the rule that the sample size should be greater than 10 times the maximum number of inner or outer model links pointing at any latent variable in the model. In the current study, the 10-times rule method leads to the minimum sample size estimation of 40, regardless of the strengths of the path coefficients. This is because the maximum number of model links pointing at any variable in the model is 4, which multiplied by 10 yields 40. In addition, Tabachnick and Fidell (1996) argued that the minimum sample size needs to satisfy the value of  $50 + 8 * m = 50 + 8 * 5 = 90$  ( $m$  is the number of independent variables), so the sample size in this study is satisfactory.

### ***MEASURES***

This study used six items adapted from Camelo-Ordaz et al.'s (2011) research to measure the perception of high-involvement HRM practices in an organization. These items used a Likert scale format that ranged from a very little extent (1) to a very large extent (5). A specific sample of a variable was "Training activities in my company focus on team building and interpersonal relations." The scale of KS was measured by adapting items from the research of Son et al.'s (2020). The scale had ten items that used a Likert scale format ranging from very little extent (1) to very large extent (5). This study measures knowledge collecting and knowledge donating as unidimensional constructs. This measurement is valid and consistent with previous studies (e.g., B. P. Le et al., 2018), of which five items were employed to measure knowledge donation and five others were used to measure knowledge collection. An example of these items is "I often share with my colleagues the new working skills that I learn" and "My colleagues often share with me the working skills they know when I ask them." In



addition, ten items were developed from the research of Sheng and Chien (2016) to evaluate incremental and radical innovation. These items used a Likert scale format that ranged from a very little extent (1) to a very large extent (5), of which, five items were used to measure radical innovation (e.g., “we invent new products and service”); five remaining ones were utilized to measure incremental innovation (e.g., “we frequently refine the provision of existing products and services”). This study also utilized three items originating from Calantone et al.’s (2003) study to estimate market turbulence, e.g., “We cater to many of the same customers as in the past.” These items used a Likert scale format that ranged from very little extent (1) to very large extent (5). Finally, we considered firm characteristics of industry type as control variables to clarify the distinctions in companies’ ability to innovate (Yang et al., 2018).

## ***DATA ANALYSIS***

There are three stages of the data analysis process. Step 1: Data collection and description of statistical analysis. The purpose of this step is to provide simple summaries of the sample and the measures. Step 2: Exploratory and confirmatory factor analysis. These techniques are used in scale development, scale adaptation studies, and the goodness-of-fit of the measurement model. Step 3: Regression analysis. This technique is used to test hypotheses and study linear relationships. This study utilized Structural Equation Modeling (SEM) to test proposal hypotheses in the research model using data gathered from the 309 respondents in 125 firms because (1) SEM method has been widely used due to its ability to demonstrate versatile regression correlations on a single model and test (Kline, 2015), and (2) it is also proper and practical to identify interaction and mediation effects (P. B. Le & Lei, 2019).

To eliminate the potential effect of common method bias (CMB) in self-reporting variables, this study used Harman’s single factor test to check for the probably existing CMB issues (Podsakoff & Organ, 1986). Accordingly, this study implements Exploratory Factor Analysis and Principal Component Factor to analyze all questionnaire items of six latent constructs with an eigenvalue larger than 1 extracted, the cumulative percent of the variance is 82.69%, explanation variance percent of the first factor is 15.789% (less than 50%). Accordingly, CMB is not a significant issue in current data.

It is important first to check the normality of the data to ensure that the model assumptions are not violated, which may create problems with the estimations (Byrne, 2016). According to Tabachnick et al. (2013, pp.497-516), to measure normal distribution, skewness, and kurtosis are appropriate measures that should be within the range from 2 to  $-2$  (Table 1).

**Table 1. Normality test for the dimensions of latent constructs**

Constructs	Skewness		Kurtosis	
	<i>Statistic</i>	<i>Std. error</i>	<i>Statistic</i>	<i>Std. error</i>
High-involvement HRM practices (HRM)	-0.564	0.139	0.067	0.267
Knowledge donating (KD)	-0.088	0.139	-0.298	0.267
Knowledge collecting (KC)	-0.216	0.139	-0.530	0.267
Radical innovation (RI)	-0.216	0.139	0.047	0.267
Incremental innovation (II)	-0.007	0.139	-0.357	0.267
Market turbulence (MT)	-0.200	0.139	-0.578	0.267

Based on Table 1, the absolute values of kurtosis for high-involvement HRM practices, KS constructs, market turbulence, and innovation capabilities fell between  $-1.317$  and  $-0.099$ , and the values of skewness fell between 1.031 and 1.965. Therefore, the skewness and kurtosis in this research can be accepted as they all fell within the range of  $\pm 2$ .

In addition, to ensure multicollinearity does not result in spurious findings during regression analysis, we have calculated the variance inflation factor (VIF). The VIF is found to be less than 3 for all the independent variables, so potential multicollinearity-related issues were not a concern.

## RESULTS

### *MEASUREMENT MODEL*

As shown in Table 2, this study examines the Cronbach’s alpha coefficient ( $C\alpha$ ) of all variables to test the reliability of the measurement. Statistical results range from 0.92 to 0.96 (greater than 0.7 recommended by Nunnally & Bernstein, 1994). In addition, to examine the discriminant and convergent validity of the total measurement model, this study evaluates confirmatory factor analysis (CFA) as recommended by Brown (2015).

**Table 2. Standardized loading and reliabilities for the measurement model**

Construct	Item	Standardize loading	t-value	AVE	CR	C $\alpha$
<b>High-involvement HRM practices</b>	6	-	-	0.67	0.92	0.92
	HRM1	0.805***	20.5			
	HRM2	0.785***	15.5			
	HRM3	0.848***	17.3			
	HRM4	0.819***	20.5			
	HRM5	0.849***	17.3			
	HRM6	0.796***	15.8			
<b>Knowledge donating (KD)</b>	5	-	-	0.70	0.92	0.92
	KD1	0.813***	23.0			
	KD2	0.821***	17.6			
	KD3	0.851***	18.6			
	KD4	0.852***	23.1			
	KD5	0.845***	18.4			
<b>Knowledge collecting (KC)</b>	5	-	-	0.85	0.96	0.96
	KC1	0.980***	51.8			
	KC2	0.968***	51.8			
	KC3	0.785***	21.2			
	KC4	0.943***	42.3			
	KC5	0.939***	41.0			
<b>Radical innovation (RI)</b>	5	-	-	0.74	0.93	0.93
	RI1	0.832***	20.1			
	RI2	0.858***	33.8			
	RI3	0.891***	23.2			
	RI4	0.840***	20.5			
	RI5	0.902***	33.8			
<b>Incremental innovation (II)</b>	5	-	-	0.82	0.95	0.95
	II1	0.922***	38.1			
	II2	0.874***	23.7			

Construct	Item	Standardize loading	t-value	AVE	CR	C $\alpha$
	II3	0.918***	26.4			
	II4	0.904***	25.3			
	II5	0.921***	38.0			
<b>Market turbulence (MT)</b>	3	-	-	0.88	0.95	0.95
	MT1	0.956***	32.7			
	MT2	0.933***	33.0			
	MT3	0.929***	32.6			

Notes:  $Ca \geq 0.7$ ;  $CR \geq 0.7$ ;  $AVE \geq 0.5$ ; \*\*\* Significant at  $p < 0.001$ .

**Convergent validity:** With respect to convergent validity, Table 2 shows that statistical indicators satisfy important standards of convergent validity suggested by Hair et al. (2006). Specifically, factor loadings range from 0.749 to 0.980, CR values range from 0.92 to 0.96, and the AVE values range from 0.67 to 0.88.

**Discriminant validity:** This study continues checking the discriminant validity of the factors by examining criteria recommended by Fornell and Larcker (1981). As shown in Table 3, the AVE's square root of each variable is higher than the inter-construct correlations. Thus, the discriminant validity condition is satisfied. Consequently, these findings show secure support for both latent reliability and discriminant validity of measurements.

**Table 3. Descriptive statistics and constructed correlations**

Constructs	Mean	SD	HRM	KD	KC	RI	II	MT
High-involvement HRM practices (HRM)	3.44	0.55	<b>0.81</b>					
Knowledge donating (KD)	3.52	0.61	0.61***	<b>0.83</b>				
Knowledge collecting (KC)	3.58	0.54	0.44***	0.40***	<b>0.92</b>			
Radical innovation (RI)	3.69	0.65	0.62***	0.68***	0.47***	<b>0.86</b>		
Incremental innovation (II)	3.64	0.62	0.57***	0.59***	0.48***	0.57***	<b>0.90</b>	
Market turbulence (MT)	3.42	0.79	0.04	0.06	-0.05	0.05	0.1	<b>0.93</b>

Notes: S.D: standard deviation; Diagonal elements (in bold) are the square root of the AVE; \*\*\*  $p < 0.001$ .

**Satisfaction of the measurement model:** This study judged the good fit of measurement by investigating incremental and absolute fit values. Table 4 manifests that all fit indicators of the measurement are acceptable. Hence, the model is consistent with the data and reliable.

**Table 4. The fit indicators of the CFA model**

Fit index	Scores	Proposal threshold values
<i>Absolute fit values</i>		
Chi-square/df - (CMIN/df)	1.223	$\leq 2^a$ ; $\leq 5^b$
Goodness of fit index - (GFI)	0.915	$\geq 0.90^a$ ; $\geq 0.80^b$
Root mean square error of approximation - (RMSEA)	0.027	$\leq 0.08^a$ ; $\leq 0.10^b$
<i>Incremental fit values</i>		
Incremental fit measures including normed fit index - (NFI)	0.958	$\geq 0.90^a$ ;

Adjusted goodness of fit index - (AGFI)	0.886	≥ 0.90 <sup>a</sup> ; ≥ 0.80 <sup>b</sup>
Comparative fit index - (CFI)	0.992	≥ 0.90 <sup>a</sup> ;

Notes: a and b: good and acceptable fit.

### STRUCTURAL MODEL AND FINDINGS

Previous research suggests that the structural equation model (SEM) is appropriate to demonstrate and explain the flexible regression correlations on a sole model (Kline, 2015). According to P. B. Le and Lei (2019), SEM is also practical and fits to examine the mediation and interaction effects. The fit indicators of the structural model are good enough ( $\chi^2=473.30$ ;  $df = 385$ ;  $RMSEA = 0.049$ ;  $GFI = 0.865$ ;  $CFI = 0.991$ ;  $TLI = 0.990$ ), advocating that correlation coefficients among research variables fit the data.

#### Test direct effects

The results of SEM shown in Figure 2 and Table 5 indicate that standardized regression coefficients of direct influences are significant and compatible with the stated hypotheses. Specifically, regarding H1a and H1b, the results in Table 5 show the positive effects of high-involvement HRM practices on radical innovation ( $\beta = 0.270$ ;  $p < 0.001$ ), and incremental innovation ( $\beta = 0.254$ ;  $p < 0.001$ ). Thus, hypotheses H1a and H1b are empirically supported.

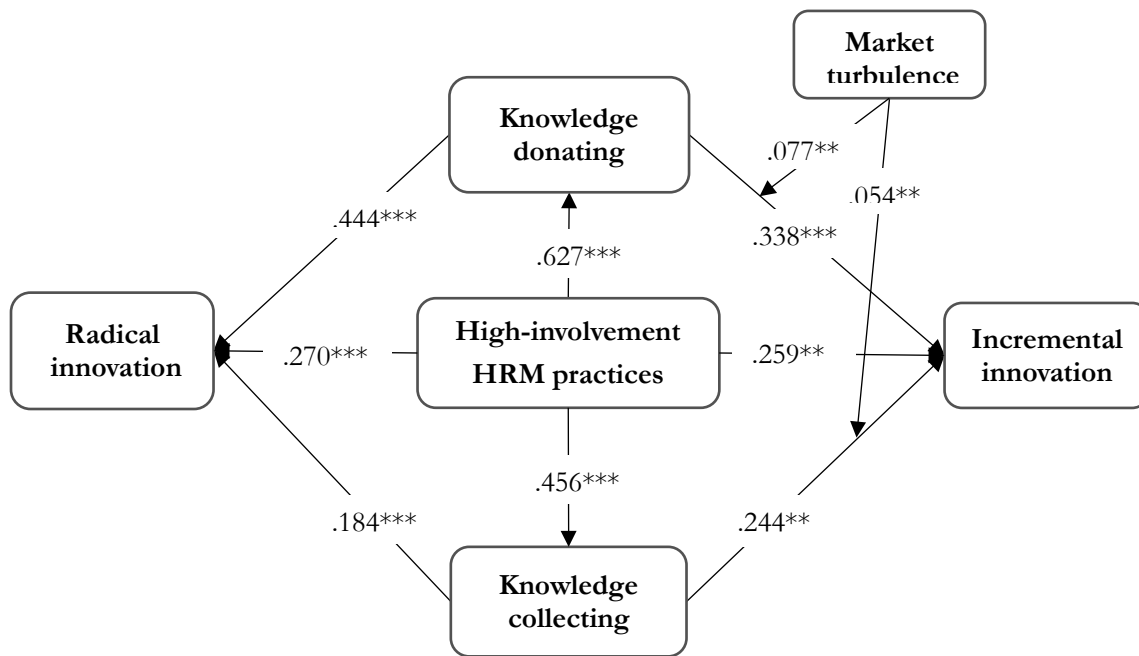


Figure 2. Results of structural model

Notes: \*\*\* $p < .001$ ; \*\* $p < .05$ ; --- non-significant paths

Table 5. Results of the direct relationship and moderation

Relationship	Beta	Standard error	t-value	Results
HRM → Radical innovation	0.270***	0.078	4.048	Supported
HRM → Incremental innovation	0.259***	0.077	3.730	Supported
HRM → Knowledge donating	0.627***	0.069	10.358	Supported
HRM → Knowledge collecting	0.456***	0.061	7.953	Supported

Relationship	Beta	Standard error	t-value	Results
KD → Radical innovation	0.444***	0.065	7.049	Supported
KD → Incremental innovation	0.338***	0.063	5.245	Supported
KC → Radical innovation	0.184***	0.053	3.759	Supported
KC → Incremental innovation	0.244***	0.053	4.740	Supported
Industry type → Radical innovation	-0.001	0.056	-0.018	Not Supported
Industry type → Incremental innovation	-0.011	0.056	-0.198	Not Supported
MT*KD → Radical innovation	0.031	0.019	1.584	Not Supported
MT*KD → Incremental innovation	0.077***	0.020	3.854	Supported
MT*KC → Radical innovation	0.002	0.020	0.126	Not Supported
MT*KC → Incremental innovation	0.054**	0.019	2.854	Supported

Notes: \*\*\* $p < 0.001$ ; \*\* $p < 0.05$

With reference to hypotheses H2a and H2b, the findings support the positive and significant influences of high-involvement HRM practices on knowledge donation and collection. Specifically, the effect of high-involvement HRM practices on knowledge donation ( $\beta = 0.627$ ;  $p < 0.001$ ) is more significant than its influences on knowledge collection ( $\beta = 0.456$ ;  $p < 0.001$ ).

Regarding the correlation between KS behaviors and innovation capabilities, findings also verify the hypotheses H3a, H3b, H3c, and H3d. Particularly, the findings reveal that knowledge donation has greater effects on both radical innovation ( $\beta = 0.444$ ;  $p < 0.001$ ) and incremental innovation ( $\beta = 0.338$ ;  $p < 0.001$ ) in comparison with the effects of knowledge donation on radical innovation ( $\beta = 0.184$ ;  $p < 0.001$ ) and incremental innovation ( $\beta = 0.244$ ;  $p < 0.001$ ). It highlights the significant role of knowledge donation in fostering organizational capability for incremental and radical innovation.

With respect to the control role of the industry type, the findings do not favor its control role on the innovation capability of the organization because regression coefficients are insignificant statistically. Hence, industry type does not signal a difference in innovation capability among organizations.

### Test mediating effects

As shown in Table 6, to evaluate proofs reflecting the mediating role of KS in the HRM practice-innovation relationship, this paper applies the method of bootstrap confidence intervals with 5,000 repetitions to affirm the statistical significance of the indirect influences as recommended by Preacher and Hayes (2008).

**Table 6. Confidence intervals of the indirect effects**

Path	Direct effects	Indirect effects	Total effects	Bias-corrected confidence intervals	
				Lower confidence level	Upper confidence level
HRM → KC & KD → RI	0.270***	0.363***	0.633***	0.294	0.442
HRM → KC & KD → II	0.259***	0.323***	0.583***	0.244	0.405

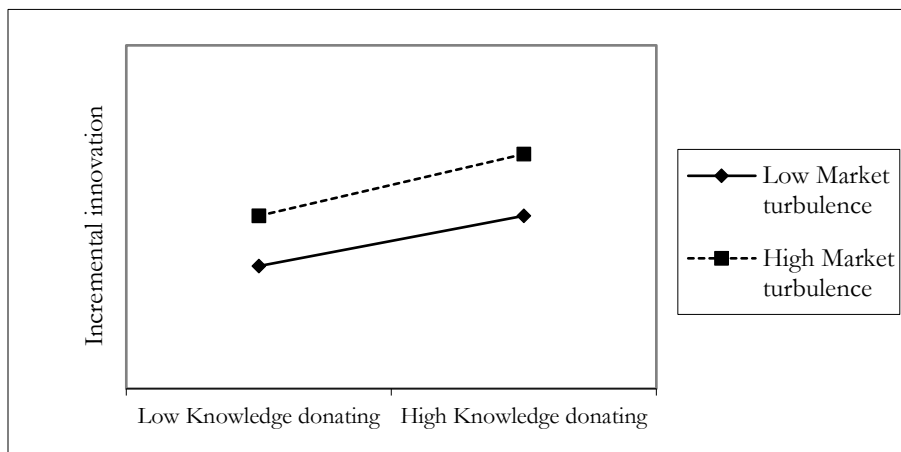
Note: \*\*\* $p < 0.001$

Findings in Table 6 point out that the indirect impact of high-involvement HRM practices on radical innovation ( $\beta = 0.363$ ;  $p < 0.001$ ) and incremental innovation ( $\beta = 0.323$ ;  $p < 0.001$ ) are statistically significant and within the allowed confidence interval. Thus, these findings show that KS behaviors

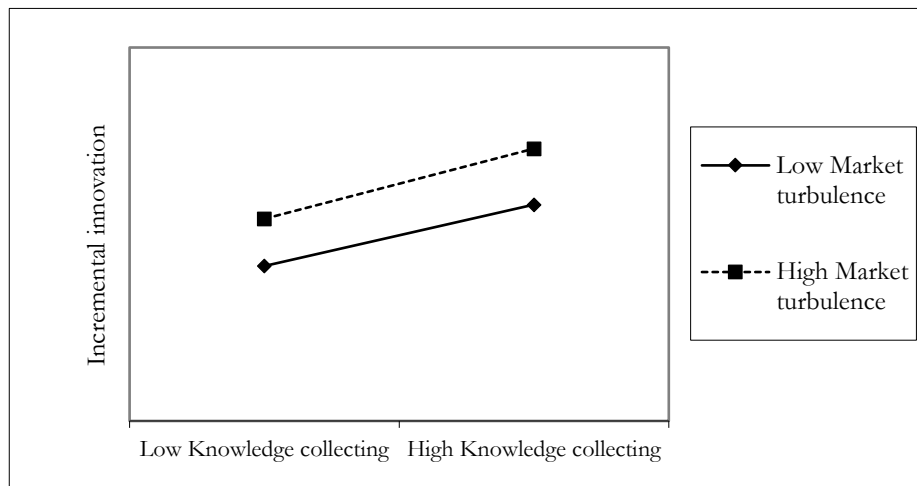
serve as a partial mediation in the relationship between high-involvement HRM practices and innovation capabilities.

**Test moderating effects**

To examine the moderating role of market turbulence in the KS-innovation correlation, we estimate the impact of MT\*KD interaction on each form of innovation. The findings manifest that this impact is insignificant ( $\beta = 0.031; p > 0.1$ ) and H5a is not supported. In contrast, the effect of MT\*KD interaction on incremental innovation is significant ( $\beta = 0.077; p < .001$ ), and H5b is supported (Figures 3). Similarly, H5c is not supported because the results do support arguments about the impact of MT\*KC interaction on radical innovation ( $\beta = 0.002; p > 0.1$ ) while supporting its effect on incremental innovation ( $\beta = 0.054; p < 0.05$ ). In this case, hypothesis H5d is confirmed (Figures 4). Generally, our findings disclose that market turbulence significantly and positively impacts KS behaviors on incremental innovation.



**Figure 3. Moderating effect of MT between KD and incremental innovation**



**Figure 4. Moderating effect of MT between KC and incremental innovation**

## DISCUSSIONS AND IMPLICATIONS

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Improving innovation capability is a primary concern of academics and leaders of firms in emerging markets because of its remarkable benefits in creating adaptive capacity and competitive advantage (Phan, 2019; Van et al., 2018; Yi et al., 2021; Zapata-Cantu, 2020). However, V. Z. Chen et al. (2014) indicated that it is a real challenge for firms in an emerging market to foster innovation if they rely on external support due to “inadequate external institutions, associated with market failures, highly bureaucratic and corrupt legal-political governance, and weak property-rights regimes” (p. 2). By investigating and showing evidence of the positive effects of a firm’s internal strategic factors (such as high-involvement HRM practice and KS) on its capability to innovate under the moderating effect of market turbulence, this study points out the right direction to pursue innovation for firms in developing and emerging nations. It highlights that enhancing innovation capacity must originate mainly from internal resources and factors that they can control. The positive contributions of this paper in terms of theory and practice of innovation are reflected in the following specific aspects.

First, this study has confirmed the benefits of high-involvement HRM practices as the key antecedent for firms in emerging markets to follow innovation. Although there have been few studies on KS and innovation (Khan et al., 2019; Vladić et al., 2021), they still have confusion in identifying the core factors affecting specific aspects of innovation, such as incremental and radical innovations (P. T. Le & Le, 2022; Shehzad et al., 2022). In addition, effective HRM practices are widely recognized as a decisive precursor to fostering innovation and organizational outcomes but studies on the role and impact of high-involvement HRM practice on the innovation competence of enterprises are still fairly modest and limited (Cao et al., 2022; Chang et al., 2011; Waheed et al., 2019). Than et al. (2021) indicated that “several scholars proposed the relationship between HRM and knowledge management capability based on the literature. However, stronger empirical confirmation is required.” Accordingly, by paying attention to clarifying the antecedent role of high-involvement HRM practice in predicting innovation outcomes, this study has brought insights and causal mechanisms of this relationship. The findings have verified the significant and positive impacts of high-involvement HRM practice on incremental and radical innovation and disclosed that high-involvement HRM practice might be the most appropriate means of advancing organizational capability for incremental and radical innovations.

Second, the literature highlighted the important role of fostering KS activities as an effective method to enhance knowledge capital and organizational innovation (T. T. Le & Le, 2023; Yi et al., 2021). However, the empirical research clarifying this impact is still sparse (Than et al., 2021; Yao et al., 2020). By examining the effect of knowledge donation and collection on incremental and radical innovations, this study endorses the crucial role of KS behaviors in predicting innovation capability. It also reveals and affirms the significant role of knowledge donation behaviors in inducing more influences on both types of innovations. These findings are meaningful and valuable because it helps academia to have detailed insights into effective pathways to drive innovation. Being consistent with the findings of Than et al. (2021), we demonstrate that promoting KS is the right choice and opens up opportunities for firms in emerging nations to make fundamental changes in technological trajectory and operation, hence improving competitive advantage for better penetration into existing markets.

Third, scholars argue that innovation capability might be formed as the HRM-related impacts (Kaabi et al., 2018), especially KS activities were found to actively mediate the effects of organizational factors such as transformational leadership (Al-Husseini et al., 2021), organizational justice (Akram et al., 2020) and organizational culture (P. B. Le et al., 2020). However, with the exception of the work by Cao et al. (2022), very few studies have potential intermediating roles of KS activities for HRM practice-innovation relationships. The result from this paper has asserted that KS behaviors significantly mediate the influence of high-involvement HRM practice on incremental and radical innovations. It also reports that high-involvement HRM practice would positively predict firms’ innovation competence as a result of its influence on employees’ enthusiasm and KS behaviors.

Fourth, scholars highlight the need of determining mechanisms of how market turbulence drives the correlations between behavior variables and organizational factors, such as the KS-innovation correlation (P. T. Le & Le, 2022; Li, 2022). By investigating this linkage in Vietnam, we have provided a theoretical basis and shown proof for its moderating role, and indicates that market turbulence might act as a situational variable and create a reciprocal effect to drive incremental and radical innovations. Consistent with the work of Shehzad et al. (2022), the paper reveals the crucial contingent role of market turbulence in affecting innovation outcomes.

Finally, the paper increases the understanding of the correlations among HRM practice, KS, and innovation in emerging markets. Vietnam is known as a promising country with stable economic growth in recent years. Yet, Vietnamese enterprises are facing many challenges for renovation in terms of physical, financial, and technological resources (Cao et al., 2022; P. B. Le, 2020; Pham & Hoang, 2019). Such status requires greater motivation to discover less expensive and more viable solutions to innovate for organizations (Gui et al., 2021; P. T. Le & Le, 2022). Therefore, the findings have opened a pathway for organizations in emerging markets to promote innovation with limited resources, such as focusing on high-involvement HRM practices, motivating employees to share explicit and tacit knowledge, and concerning the impact of contextual factors.

## LIMITATIONS AND RECOMMENDATIONS

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Besides contributing to improving the understanding of the relationship between latent variables, the research has certain constraints. First, although the research utilizes the cross-sectional approach for testing the relations among the latent factors, it might not rule out that the correlations might change in the long run. Hence, a longitudinal study is necessary to address this restriction. Second, this study is implemented in a developing country context and implications might only be applied to developing nations. Therefore, we recommend that future studies should persist in developed countries to clarify and strengthen research results. Finally, the innovation effort and strategy of organizations in developing markets tend to be influenced by environmental turbulences and resource constraints (P. B. Le et al., 2022). The paper suggests that future works should focus on exploring available constructs such as HRM practices and knowledge resources to promote frugal innovation models dealing with resource scarcity.

## CONCLUSIONS

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With the continuing high growth rates of emerging markets, firms in these nations increasingly face pressures to innovate because an understanding of innovation is less readily available in emerging markets and that access to such knowledge is plagued by market inefficiencies, information problems, and skilled labor shortages (Than et al., 2023; Zapata-Cantu, 2020). By developing a research model that emphasizes the mediating role of knowledge donation and collection in linking HRM practice-innovation relationship as well as moderating the role of market turbulence in fostering the influences of KS behaviors on incremental and radical innovation, this paper has provided valuable initiatives for firms in the developing and emerging markets on the effective pathway to leverage the strategic and internal resources of the organization for enhancing innovation.

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## REFERENCES

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- Akram, T., Lei, S., Haider, M. J., & Hussain, S. T. (2020). The impact of organizational justice on employee innovative work behavior: Mediating role of knowledge sharing. *Journal of Innovation & Knowledge*, 5(2), 117-129. <https://doi.org/10.1016/j.jik.2019.10.001>



- Al-Bahussin, S. A., & El-Garaihy, W. H. (2013). The impact of human resource management practices, organisational culture, organisational innovation and knowledge management on organisational performance in large Saudi organisations: Structural equation modeling with conceptual framework. *International Journal of Business and Management*, 8(22). <https://doi.org/10.5539/ijbm.v8n22p1>
- Al-Husseini, S., El Beltagi, I., & Moizer, J. (2021). Transformational leadership and innovation: The mediating role of knowledge sharing amongst higher education faculty. *International Journal of Leadership in Education*, 24(5), 670-693. <https://doi.org/10.1080/13603124.2019.1588381>
- Aman, Q., Noreen, T., Khan, I., Ali, R., & Yasin, A. (2018). The impact of human resource management practices on innovative ability of employees moderated by organizational culture. *International Journal of Organizational Leadership*, 7(4), 426-439. <https://doi.org/10.33844/ijol.2018.60434>
- Anderson, N., Potočník, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. *Journal of Management*, 40(5), 1297-1333. <https://doi.org/10.1177/0149206314527128>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120. <https://doi.org/10.1177/014920639101700108>
- Barney, J. B., & Wright, P. M. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management*, 37(1), 31-46. [https://doi.org/10.1002/\(SICI\)1099-050X\(199821\)37:1<31::AID-HRM4>3.0.CO;2-W](https://doi.org/10.1002/(SICI)1099-050X(199821)37:1<31::AID-HRM4>3.0.CO;2-W)
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research*: Guilford Publications.
- Byrne, B. M. (2016). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (3rd ed.). Routledge. <https://doi.org/10.4324/9781315757421>
- Calantone, R., Garcia, R., & Dröge, C. (2003). The effects of environmental turbulence on new product development strategy planning. *Journal of Product Innovation Management*, 20(2), 90-103. <https://doi.org/10.1111/1540-5885.2002003>
- Camelo-Ordaz, C., Garcia-Cruz, J., Sousa-Ginel, E., & Valle-Cabrera, R. (2011). The influence of human resource management on knowledge sharing and innovation in Spain: The mediating role of affective commitment. *The International Journal of Human Resource Management*, 22(7), 1442-1463. <https://doi.org/10.1080/09585192.2011.561960>
- Cao, T. T., Le, P. B., & Nguyen, N. T. M. (2022). Impacts of high-involvement HRM practices on organizational innovation capability: The mediating mechanism of tacit and explicit knowledge sharing. *International Journal of Innovation Science*, 14(5), 733-749. <https://doi.org/10.1108/IJIS-05-2021-0091>
- Chang, S., Gong, Y., & Shum, C. (2011). Promoting innovation in hospitality companies through human resource management practices. *International Journal of Hospitality Management*, 30(4), 812-818. <https://doi.org/10.1016/j.ijhm.2011.01.001>
- Chen, C.-J., & Huang, J.-W. (2009). Strategic human resource practices and innovation performance – The mediating role of knowledge management capacity. *Journal of Business Research*, 62(1), 104-114. <https://doi.org/10.1016/j.jbusres.2007.11.016>
- Chen, V. Z., Li, J., Shapiro, D. M., & Zhang, X. (2014). Ownership structure and innovation: An emerging market perspective. *Asia Pacific Journal of Management*, 31(1), 1-24. <https://doi.org/10.1007/s10490-013-9357-5>
- Choi, S. B., Kim, K., Ullah, S. E., & Kang, S.-W. (2016). How transformational leadership facilitates innovative behavior of Korean workers: Examining mediating and moderating processes. *Personnel Review*, 45(3), 459-479. <https://doi.org/10.1108/PR-03-2014-0058>
- De Winne, S., & Sels, L. (2010). Interrelationships between human capital, HRM and innovation in Belgian start-ups aiming at an innovation strategy. *The International Journal of Human Resource Management*, 21(11), 1863-1883. <https://doi.org/10.1080/09585192.2010.505088>
- Diaz-Fernandez, M., Bornay-Barrachina, M., & Lopez-Cabrales, A. (2017). HRM practices and innovation performance: A panel data approach. *International Journal of Manpower*, 38(3), 354-372. <https://doi.org/10.1108/IJM-02-2015-0028>

## Determinants of Incremental and Radical Innovation

- Dost, M., Pahi, M. H., Magsi, H. B., & Umrani, W. A. (2019). Effects of sources of knowledge on frugal innovation: Moderating role of environmental turbulence. *Journal of Knowledge Management*, 23(7), 1245-1259. <https://doi.org/10.1108/JKM-01-2019-0035>
- Drucker, P. (2014). *Innovation and entrepreneurship*: Routledge. <https://doi.org/10.4324/9781315747453>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
- Gong, L., Liu, Z., Rong, Y., & Fu, L. (2021). Inclusive leadership, ambidextrous innovation and organizational performance: the moderating role of environment uncertainty. *Leadership & Organization Development Journal*, 42(5), 783-801. <https://doi.org/10.1108/loj-06-2020-0253>
- Gope, S., Elia, G., & Passiante, G. (2018). The effect of HRM practices on knowledge management capacity: A comparative study in Indian IT industry. *Journal of Knowledge Management*, 22(3), 649-677. <https://doi.org/10.1108/JKM-10-2017-0453>
- Gui, L., Lei, H., & Le, P. B. (2021). Determinants of radical and incremental innovation: The influence of transformational leadership, knowledge sharing and knowledge-centered culture. *European Journal of Innovation Management*, 25(5), 1221-1241. <https://doi.org/10.1108/EJIM-12-2020-0478>
- Gui, L., Lei, H., & Le, P. B. (2022). Fostering product and process innovation through transformational leadership and knowledge management capability: The moderating role of innovation culture. *European Journal of Innovation Management*. Advance online publication. <https://doi.org/10.1108/EJIM-02-2022-0063>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Pearson Education.
- Haneda, S., & Ito, K. (2018). Organizational and human resource management and innovation: Which management practices are linked to product and/or process innovation? *Research Policy*, 47(1), 194-208. <https://doi.org/10.1016/j.respol.2017.10.008>
- Iqbal, S., Rasheed, M., Khan, H., & Siddiqi, A. (2021). Human resource practices and organizational innovation capability: Role of knowledge management. *VINE Journal of Information and Knowledge Management Systems*, 51(5), 732-748. <https://doi.org/10.1108/VJIKMS-02-2020-0033>
- Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52(1), 1661-1674. <https://doi.org/10.1287/mnsc.1060.0576>
- Jiménez-Jiménez, D., & Sanz-Valle, R. (2008). Could HRM support organizational innovation? *The International Journal of Human Resource Management*, 19(7), 1208-1221. <https://doi.org/10.1080/09585190802109952>
- Kaabi, A. A. A., Elanain, H. A., & Ajmal, M. M. (2018). HRM practices and innovation performance with the mediating effect of knowledge sharing: Empirical evidence from Emirati ICT companies. *International Journal of Innovation Learning*, 24(1), 41-61. <https://doi.org/10.1504/IJIL.2018.092922>
- Khan, Z., Lew, Y. K., & Marinova, S. (2019). Exploitative and exploratory innovations in emerging economies: The role of realized absorptive capacity and learning intent. *International Business Review*, 28(3), 499-512. <https://doi.org/10.1016/j.ibusrev.2018.11.007>
- Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford Press.
- Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, 28(1), 227-261. <https://doi.org/10.1111/isi.12131>
- Le, B. P., Lei, H., Phouvang, S., Than, T. S., Nguyen, T. M. A., & Gong, J. (2018). Self-efficacy and optimism mediate the relationship between transformational leadership and knowledge sharing. *Social Behavior and Personality: An International Journal*, 46(11), 1833-1846. <https://doi.org/10.2224/sbp.7242>
- Le, P. B. (2020). How transformational leadership facilitates incremental and radical innovation: The mediating role of individual psychological capital. *Asia-Pacific Journal of Business Administration*, 12(3/4), 205-222. <https://doi.org/10.1108/APJBA-04-2020-0129>

- Le, P. B. (2021). Determinants of frugal innovation for firms in emerging markets: The roles of leadership, knowledge sharing and collaborative culture. *International Journal of Emerging Markets*. Advance online publication.
- Le, P. B., & Le, T. T. (2023). Transformational leadership and innovation capability: Roles of knowledge-centered culture and knowledge sharing. *The Journal of Asian Finance, Economics and Business*, 10(1), 111-121. <https://doi.org/10.13106/jafeb.2023.vol10.no1.0111>
- Le, P. B., & Lei, H. (2017). How transformational leadership supports knowledge sharing: Evidence from Chinese manufacturing and service firms. *Chinese Management Studies*, 11(3), 479-497. <https://doi.org/10.1108/CMS-02-2017-0039>
- Le, P. B., & Lei, H. (2019). Determinants of innovation capability: The roles of transformational leadership, knowledge sharing and perceived organizational support. *Journal of Knowledge Management*, 23(3), 527-547. <https://doi.org/10.1108/JKM-09-2018-0568>
- Le, P. B., Lei, H., Le, T. T., Gong, J., & Ha, A. T. (2020). Developing a collaborative culture for radical and incremental innovation: The mediating roles of tacit and explicit knowledge sharing. *Chinese Management Studies*, 14(4), 957-975. <https://doi.org/10.1108/CMS-04-2019-0151>
- Le, P. B., & Nguyen, D. T. N. (2023). Stimulating knowledge-sharing behaviours through ethical leadership and employee trust in leadership: the moderating role of distributive justice. *Journal of Knowledge Management*, 27(3), 820-841. <https://doi.org/10.1108/jkm-06-2021-0462>
- Le, P. B., Tran, D. T., Phung, T. M. T., & Vu, K. D. (2022). Leadership and knowledge management practices for frugal innovation of firms in the emerging market: Moderating role of collaborative culture. *Asia-Pacific Journal of Business Administration*. Advance online publication. <https://doi.org/10.1108/APJBA-03-2021-0130>
- Le, P. T., & Le, P. B. (2022). Influence of knowledge-oriented leadership and knowledge sharing on radical and incremental innovation: The moderating role of market turbulence. *VINE Journal of Information and Knowledge Management Systems*. Advance online publication. <https://doi.org/10.1108/VJIKMS-07-2022-0238>
- Le, T. T., & Le, P. B. (2023). High-involvement HRM practices stimulate incremental and radical innovation: The roles of knowledge sharing and market turbulence. *Journal of Open Innovation: Technology, Market, Complexity*, 9(1), 100006. <https://doi.org/10.1016/j.oiotmc.2023.02.003>
- Lei, H., Khamkhoutlavong, M., & Le, P. B. (2021). Fostering exploitative and exploratory innovation through HRM practices and knowledge management capability: The moderating effect of knowledge-centered culture. *Journal of Knowledge Management*, 25(8), 1926-1946. <https://doi.org/10.1108/JKM-07-2020-0505>
- Lei, H., Leungkhamma, L., & Le, P. B. (2020). How transformational leadership facilitates innovation capability: The mediating role of employees' psychological capital. *Leadership & Organization Development Journal*, 41(4), 481-499. <https://doi.org/10.1108/LODJ-06-2019-0245>
- Li, L. (2022). Digital transformation and sustainable performance: The moderating role of market turbulence. *Industrial Marketing Management*, 104, 28-37. <https://doi.org/10.1016/j.indmarman.2022.04.007>
- Naranjo-Gil, D. (2009). The influence of environmental and organizational factors on innovation adoptions: Consequences for performance in public sector organizations. *Technovation*, 29(12), 810-818. <https://doi.org/10.1016/j.technovation.2009.07.003>
- Ndlela, L. T., & Du Toit, A. (2001). Establishing a knowledge management programme for competitive advantage in an enterprise. *International Journal of Information Management*, 21(2), 151-165. [https://doi.org/10.1016/S0268-4012\(01\)00007-X](https://doi.org/10.1016/S0268-4012(01)00007-X)
- Nguyen, D. K., Phong, L. B., & Hui, L. (2019). Creating Competitive Advantage for Vietnamese Manufacturing and Service Firms: The Role of Collaborative Culture and Innovation Capability. *International Journal of Business Administration*, 10(2), 32-42. <https://doi.org/10.5430/ijba.v10n2p32>
- Nguyen, T. N., Shen, C. H., & Le, P. B. (2022). Influence of transformational leadership and knowledge management on incremental and radical innovation: The moderating role of collaborative culture. *Kybernetes*, 51(7), 2240-2258. <https://doi.org/10.1108/K-12-2020-0905>

- Nunnally, J. C., & Bernstein, I. (1994). Elements of statistical description and estimation. *Psychometric theory* (3rd ed., pp. 114-158). McGraw-Hill.
- Pham, L. T., & Hoang, H. V. (2019). The relationship between organizational learning capability and business performance: The case of Vietnam firms. *Journal of Economics and Development*, 21(2), 259-269. <https://doi.org/10.1108/jed-10-2019-0041>
- Phan, T. T. A. (2019). Does organizational innovation always lead to better performance? A study of firms in Vietnam. *Journal of Economics and Development*, 21(1), 71-82. <https://doi.org/10.1108/JED-06-2019-0003>
- Phong, L. B., & Son, T. T. (2020). The link between transformational leadership and knowledge sharing: Mediating role of distributive, procedural and interactional justice. *Journal of Information Knowledge Management*, 19(3), 1-19. <https://doi.org/10.1142/S0219649220500203>
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531-544. <https://doi.org/10.1177/014920638601200408>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891. <https://doi.org/10.3758/BRM.40.3.879>
- Rubel, M. R. B., Kee, D. M. H., Rimi, N. N., & Yusoff, Y. M. (2017). Adapting technology: Effect of high-involvement HRM and organisational trust. *Behaviour Information Technology*, 36(3), 281-293. <https://doi.org/10.1080/0144929X.2016.1222552>
- Sáenz, J., Aramburu, N., & Blanco, C. E. (2012). Knowledge sharing and innovation in Spanish and Colombian high-tech firms. *Journal of Knowledge Management*, 16(6), 919-933. <https://doi.org/10.1108/13673271211276191>
- Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research*, 3(7), 749-752.
- Shehzad, M. U., Zhang, J., Le, P. B., Jamil, K., & Cao, Z. (2022). Stimulating frugal innovation via information technology resources, knowledge sources and market turbulence: A mediation-moderation approach. *European Journal of Innovation Management*. Advance online publication. <https://doi.org/10.1108/EJIM-08-2021-0382>
- Sheng, M. L., & Chien, I. (2016). Rethinking organizational learning orientation on incremental and radical innovation in high-tech firms. *Journal of Business Research*, 69(6), 2302-2308. <https://doi.org/10.1016/j.jbusres.2015.12.046>
- Shin, S. J., Jeong, I., & Bae, J. (2018). Do high-involvement HRM practices matter for worker creativity? A cross-level approach. *The International Journal of Human Resource Management*, 29(2), 260-285. <https://doi.org/10.1080/09585192.2015.1137612>
- Silva, M. R., & Caetano, A. (2014). Organizational justice: What changes, what remains the same? *Journal of Organizational Change Management*, 27(1), 23-40. <https://doi.org/10.1108/JOCM-06-2013-0092>
- Singh, S. K., Mazzucchelli, A., Vessal, S. R., & Solidoro, A. (2021). Knowledge-based HRM practices and innovation performance: Role of social capital and knowledge sharing. *Journal of International Management*, 27(1), 100830. <https://doi.org/10.1016/j.intman.2021.100830>
- Soliman, F., & Spooner, K. (2000). Strategies for implementing knowledge management: Role of human resources management. *Journal of Knowledge Management*, 4(4), 337-345. <https://doi.org/10.1108/13673270010379894>
- Son, T. T., Phong, L. B., & Loan, B. T. T. (2020). Transformational leadership and knowledge sharing: Determinants of firm's operational and financial performance. *Sage Open*, 10(2). <https://doi.org/10.1177/2158244020927426>
- Sung, S. Y., & Choi, J. N. (2021). Contingent effects of workforce diversity on firm innovation: High-tech industry and market turbulence as critical environmental contingencies. *The International Journal of Human Resource Management*, 32(9), 1986-2012. <https://doi.org/10.1080/09585192.2019.1579243>
- Tabachnick, B. G., & Fidell, L. (1996). *Using multivariate statistics*. Harper Collins.

- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2013). *Using multivariate statistics*. Pearson.
- Tan, C. L., & Nasuridin, A. M. (2011). Human resource management practices and organizational innovation: Assessing the mediating role of knowledge management effectiveness. *Electronic Journal of Knowledge Management*, 9(2), 155-167.
- Than, S. T., Le, P. B., Le, T. P., & Nguyen, D. T. N. (2023). Stimulating product and process innovation through HRM practices: The mediating effect of knowledge management capability. *Evidence-based HRM*, 11(1), 85-102. <https://doi.org/10.1108/EBHRM-04-2021-0068>
- Than, S. T., Le, P. B., & Le, T. T. (2021). The impacts of high-commitment HRM practices on exploitative and exploratory innovation: The mediating role of knowledge sharing. *VINE Journal of Information Knowledge Management Systems*, 53(3), 430-449. <https://doi.org/10.1108/VJIKMS-10-2020-0196>
- Tsai, C. T., Huang, K. L., & Kao, C. F. (2001). The relationships among organizational factors, creativity of organizational members and organizational innovation. *Journal of Management*, 18(1), 527-566.
- Van, N. T., Phong, L. B., & Loan, L. T. (2018). Antecedents of Innovation Capability: The Role of Transformational Leadership and Organizational Learning. *International Journal of Business Administration*, 9(5), 1-10. <https://doi.org/10.5430/ijba.v9n5p1>
- Van den Hooff, B., & De Ridder, J. A. (2004). Knowledge sharing in context: The influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management*, 8(6), 117-130. <https://doi.org/10.1108/13673270410567675>
- Vladić, N., Maletić, D., & Maletić, M. (2021). Determinants of innovation capability: An exploratory study of inclusive leadership and work engagement. *Quality Innovation Prosperity*, 25(2), 130-152. <https://doi.org/10.12776/qip.v25i2.1596>
- Waheed, A., Miao, X., Waheed, S., Ahmad, N., & Majeed, A. (2019). How new HRM practices, organizational innovation, and innovative climate affect the innovation performance in the IT industry: A moderated-mediation analysis. *Sustainability*, 11(3), 621. <https://doi.org/10.3390/su11030621>
- Wang, C., & Hu, Q. (2020). Knowledge sharing in supply chain networks: Effects of collaborative innovation activities and capability on innovation performance. *Technovation*, 94, 102010. <https://doi.org/10.1016/j.technovation.2017.12.002>
- Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115-131. <https://doi.org/10.1016/j.hrmr.2009.10.001>
- Yang, Z., Nguyen, V. T., & Le, P. B. (2018). Knowledge sharing serves as a mediator between collaborative culture and innovation capability: An empirical research. *Journal of Business & Industrial Marketing*, 33(7), 958-969. <https://doi.org/10.1108/jbim-10-2017-0245>
- Yao, J., Crupi, A., Di Minin, A., & Zhang, X. (2020). Knowledge sharing and technological innovation capabilities of Chinese software SMEs. *Journal of Knowledge Management*, 24(3), 607-634. <https://doi.org/10.1108/JKM-08-2019-0445>
- Yasir, M., & Majid, A. (2020). High-involvement HRM practices and innovative work behavior among production-line workers: Mediating role of employee's functional flexibility. *Employee Relations: The International Journal*, 42(4), 883-902. <https://doi.org/10.1108/ER-02-2018-0061>
- Yi, L., Wang, Y., Upadhaya, B., Zhao, S., & Yin, Y. (2021). Knowledge spillover, knowledge management capabilities, and innovation among returnee entrepreneurial firms in emerging markets: Does entrepreneurial ecosystem matter? *Journal of Business Research*, 130, 283-294. <https://doi.org/10.1016/j.jbusres.2021.03.024>
- Zapata-Cantu, L. (2020). Boosting innovation in emerging markets: The moderating role of human capital. *International Journal of Emerging Markets*, 16(3), 604-624. <https://doi.org/10.1108/IJOEM-01-2019-0015>



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