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Unlocking HR's Hidden Treasure on Innovation Capability: The Mediating Role of Knowledge Management Capacity

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Abstract: Effective innovation is possible when one can innovate. Malaysia has serious problems due to a lack of R&D and innovation skills. Furthermore, small and medium-sized firms (SMEs) in developing nations have received less attention in past research on Malaysian innovation. A quantitative strategy is employed to meet the study's goals. A survey approach is used to collect data from the owners, chief executives, and management of ICT SMEs. The research collected and analyzed a total of 200 respondents. The research models and hypotheses were assessed using the Partial Least Squares (PLS) technique. This research comprises the difference between Innovative Centric Human Resource Management (ICHRM) (Acquisition; Development; Egalitarian; Collaborative; Documentation, Information System) and Innovation Capability (Radical; Incremental), also the relationship between ICHRM and Innovation Capability, using Knowledge Management Capacity as a mediator. Based on the findings of this study, the majority of HRM practices are suitable for SMEs' incremental innovation capabilities. This study also presents empirical evidence of the impact of ICHRM on knowledge management capacity on innovation, focusing on the impact of each dimension in ICHRM components that were linked to organizational processes, with a focus on the influence on incremental and radical innovation.

Keywords: *ICHRM, Development, Egalitarian, Collaborative; Documentation, Information System, Innovation Capability, SMEs*

1. Introduction and Background

Innovation is considered a vital factor in advancing Malaysia toward achieving developed nation status with a high-income classification (Inovasi Malaysia, 2022). The presence of innovative and competitive SMEs is essential for the success and future advancement of nations, particularly Malaysia (Cakar & Erturk 2010). Due to the essential nature of innovation for a firm's existence and development, possessing innovation capabilities has become increasingly vital (Francis & Bessant, 2005). Companies with enhanced innovation capabilities are likely to be more adept at managing innovation than their competitors and more effective in capitalizing on new ideas (Francis & Bessant, 2005).

Innovation is a crucial element for Malaysia to achieve developed nation status and a high level of living by 2020. (Hilmi, Pawanchik, Mustapha, & Mahmud, 2012; Sulaiman, Muhamad, & Sanusi, 2012). The future prosperity and expansion of Malaysia hinge on the presence of creative and competitive small and medium-sized enterprises (SMEs) (Cakar & Erturk, 2010). For a company to prosper and expand, enhancing its capacity for innovation is becoming increasingly essential (Francis & Bessant 2005). A corporation with a high degree of innovation aptitude is likely to manage and implement new ideas more effectively than its competitors (Francis & Bessant 2005).

The critical factor in maximizing innovation is the necessity of a creative idea or vision, whether it pertains to new business processes, organizational changes, or modifications in products and services. Innovation serves both the user's and the business's interests. Comprehending innovation typically involves a certain level of imagination, albeit not all innovations require it. Innovative developers implement creative ideas to effectuate definite and substantial changes in the area of innovation inside an organization (Hertog, Aa & Jong, 2010). Small and medium-sized enterprises (SMEs) encounter difficulties in attracting and retaining human resources; therefore, the success of SME-ICT firms in Malaysia necessitates the efficient management of human resources essential for facilitating technology and knowledge transfers, ultimately fostering the growth of Malaysian ICT SMEs. Furthermore, the function of market sensing as a moderator is crucial, as it is essential to answer client expectations. Innovation, knowledge management, and human resource management challenges are critical in

the context of SME-ICT Malaysia. This indicates the necessity for a comprehensive examination of the relationship among HRM, knowledge, and innovation in SME-ICT Malaysia.

Numerous studies acknowledge the pivotal function of ICT in enhancing the corporate environment by generating exceptional chances for growth, job expansion, and innovation acceleration. Few SMEs are fully harnessing the potential of digitalization. The paper 'Accelerating Malaysian Digital SMEs: Escaping the Computerization Trap', produced by SME Corp, examined the present state of innovation within the Malaysian SME sector and determined that the majority have only minimally engaged with technology as a catalyst for growth. The growth and success of small and medium-sized enterprises (SMEs) are crucial in today's global ICT landscape, irrespective of economic conditions (Abdullah & Beal, 2003). Small and medium-sized enterprises (SMEs) throughout the information and communication technology industry, especially in Malaysia, encounter intense competition and a dynamic worldwide market. They must continually pursue novel methods to enhance their capacity for innovation to achieve sustained growth and improved company success. Calantone, Cavusgil, and Zhao (2002) assert that a company's innovative capacity is essential for its competitiveness and performance, but Hurley and Hult (1998) and Terziovski (2008) contend that innovation competence is a vital component of successful innovation.

SMEs need to generate exceptional new goods or services to use emerging technologies (Hadjimanolis 1999). Small and medium-sized firms (SMEs) have a historical record of innovation despite constrained resources (Rosenbusch, Brinckmann & Bausch 2011). Companies' competitiveness and economic performance decline when their potential for innovation fails to expand and be maintained (Capaldo, Landoli, Raffa & Zollo 2003). Therefore, a company's capacity for innovation must be enhanced to remain competitive in the marketplace.

In the global information and communications technology (ICT) landscape (Abdullah & Beal, 2003), small and medium-sized enterprises (SMEs) are regarded as vital to the economic well-being of any nation, including Malaysia. Small and medium-sized enterprises in the ICT sector, especially in Malaysia, encounter heightened rivalry and a dynamic business landscape as a result of globalization. To achieve sustained development and enhanced business performance, they must continually explore new methods to enhance their capacity for effective innovation. Calantone, Cavusgil, and Zhao (2002) and Hurley and Hult (1998) assert that innovation and the capacity to innovate are the paramount aspects influencing an organization's competitiveness.

To compensate for the decline of conventional revenue streams, firms used digital initiatives. A corporation that fails to adopt digital practices is unlikely to survive, let alone prosper. Small and medium-sized enterprises (SMEs) constitute 99 percent of Malaysia's 920,624 firms. In 2018, small and medium-sized firms (SMEs) comprised 66.2 percent of Malaysia's workforce and contributed RM522.1 billion, representing 38.3 percent of the nation's GDP. Small and medium-sized enterprises can be categorized into micro, small, and medium classifications based on their industry, revenue, and employee count. Seventy-six-point-five percent of Malaysian SMEs are classified as micro-enterprises. Conversely, merely 2.3% of SMEs qualify as medium-sized enterprises (Amos & Rachel, 2020).

Human resource functions have already been examined concerning knowledge management competence (Lengnick-Hall et al., 2009). Research predominantly centers on Human Resource (HR) tasks that emphasize innovation, specifically recruiting, selection, and performance evaluation. However, there seems to be insufficient study about the influence of HR functions within the framework of Innovation Centric HR on knowledge management and innovation. This research will analyze two forms of innovation: radical and incremental. This study seeks to address the existing gap in the literature through investigation. Therefore, the objective of this thesis is to examine the relationship between the human resource management of Malaysian ICT SMEs and their capacity to manage knowledge. Also, This study investigates innovative-focused HRM practices and knowledge management capabilities, which have not been extensively explored in Malaysian ICT SMEs.

2. Literature Review

HRM Practices and Knowledge Management Capacity

Acquisition through the creation, sharing, and implementation of radical new concepts, HRM practices help businesses enhance their ability to manage knowledge (Baer, 2007, Kang, et al., 2007). Organizations have access to a wider range of information and resources the more diversified the external networks that people have built, which broadens their understanding of the most recent institutional and technological developments. Collaborative HRM practices improve knowledge acquisition, knowledge sharing, and application by promoting better teamwork and collaboration among stakeholders (Youndt and Snell, 2004). Unrestricted HRM practices that eliminate hierarchical differences in the organization have been found to encourage employees to acquire, share, and apply knowledge.

Employee knowledge acquisition, sharing, and application are supported by HRM practices by requiring employees to create and populate knowledge storage devices such as information systems, manuals, and standard operating procedures (Davenport & Prusak, 1998). Using information technology infrastructure, technological HRM practices aid in the codification, capture, and management of organizational knowledge (Youndt & Snell, 2004). In this case, various technologies such as online databases, groupware, data warehouses, and information processing software help a company's KM function (Kamhawi, 2010).

Therefore, the relationship between a firm's HRM practices and knowledge management appears to be straightforward, as existing literature provides compelling evidence that innovation-centric HRM approaches directly impact knowledge management capabilities. Thus, the following hypotheses are proposed:
H1: *The Acquisition HRM practices directly and positively influence its Knowledge Management Capacity.*
H2: *The Development of HRM practices directly and positively influences its Knowledge Management Capacity.*
H3: *The Egalitarian HRM practices directly and positively influence its Knowledge Management Capacity.*
H4: *The Collaboration HRM practices directly and positively influence its Knowledge Management Capacity.*
H5: *The Documentation HRM practices directly and positively influence its Knowledge Management Capacity.*
H6: *The Information HRM practices directly and positively influence its Knowledge Management Capacity.*

Mediating Relationships between Constructs

Human Resource Practices, Knowledge Management Capacity and Radical Innovative Capability

According to Damodaran and Olphert (2010), knowledge management systems (KMS) are defined as "information systems that are believed to enhance organizational learning by capturing both content and process knowledge and making this knowledge accessible to all employees." As stated by Abubakar et al. (2017), "Knowledge Management encompasses various components, including human resource practices, technology, culture, and organizational structures; hence, it represents a systematic approach to optimizing a firm's knowledge economy and fostering innovations" (pg.13). The deployment of KMS encompasses not only technological aspects but also human factors (Shrafat, 2018). This may be interpreted as knowledge-based human resource management strategies enhancing the rate of radical innovation adoption. The implementation of radical innovations should also influence the profundity of organizational knowledge. An increased number of professionals facilitates the comprehension of novel technical concepts and the formulation of methods for their implementation. This approach, however, presupposes that the professionals are sufficiently concentrated to facilitate effective communication among themselves. The concentration fosters a greenhouse effect for the cultivation and sustenance of innovative ideas, particularly when these ideas signify substantial alterations in the conceptualization of a manufacturing process.

They asserted that a proactive strategy enhances industry performance by fostering flexibility, innovation, improved opportunity recognition, and superior foresight of market fluctuations. Abernathy and Clark (1985) delineated the difference between gradual and radical innovation. Radical innovations are characterized by a significant divergence from current technical pathways. The extent of technological novelty—a novelty to enterprises, the industry, and the consumer—dictates whether an innovation is classified as radical. The corporation can utilize the knowledge that affects the nature of innovation generated, whether gradual or drastic (Subramaniam & Youndt, 2005). The research serves as a significant reference in this study, as it is among the limited empirical investigations that assess inventive capability. In conclusion, the examined

literature indicates that both radical and incremental inventive capacities are established notions that warrant additional examination due to their significant business ramifications. The inquiry into how organizational knowledge might yield varying outcomes in radical or incremental innovation remains unresolved.

It is essential to highlight that knowledge inside organizations resides with employees. The subsequent section will explore the topic of human resource management (HRM), which focuses on the management of employees inside organizations. This conversation aims to explore how Human Resource Management might affect an organization's capacity for innovation. In organizations, "knowledge management" (KM) denotes a strategy for effectively utilizing individuals' knowledge and experience to generate value (Scarborough, 2003). The resource-based theory of the organization is often cited as a primary reference in numerous KM studies, including those by Chen and Huang (2009) and Seleim and Khalil (2007), which acknowledge knowledge as a vital organizational resource (Nonaka & Takeuchi, 1995). In addition to the resource-based theory, knowledge management academics sometimes reference the firm's knowledge-based theory.

The knowledge-based theory of the firm posits that organizations function as systems for the development, utilization, and dissemination of knowledge, with positive performance reliant on their capacity to process knowledge (Seleim & Khalil, 2007). The resource-based theory posits that organizations get advantages from distinctive resources, but the knowledge-based theory extends this notion by asserting that knowledge is the paramount organizational resource (Nonaka & Takeuchi, 1995).

The knowledge-based theory is an addition to the resource-based theory of the company (Seleim & Khalil, 2007; Nonaka & Takeuchi, 1995). In conclusion, the firm's resource-based and knowledge-based theories assert that innovation is closely associated with 2 organizational resources: knowledge and employees, which serve as fundamental repositories of information. Knowledge is a major asset essential for attaining competitive advantage in organizations, as it fulfills the criteria of being rare, valuable, distinctive, and inimitable (de Pablos, 2004). Multiple studies have demonstrated that HRM strategies can be employed to acquire and retain human resources possessing unique and hard-to-replicate attributes, subsequently enhancing their competencies into organizational capabilities that generate sustainable competitive advantage for organizations. Consequently, in this investigation of organizational innovation, the theories function as foundational principles.

Nonetheless, despite the substantial contributions of both resource-based and knowledge-based models of the company, academics caution that evidence indicates organizational resources alone may not inherently provide competitive benefits to organizations (Ray, Barney & Muhanna, 2004). Employees and knowledge must be cultivated, underpinned by management processes, and utilized to attain specified objectives that confer a competitive advantage to the organization. To improve the organization's innovation performance, they need to be effectively managed.

This research aims to thoroughly document the resources and organizational procedures that facilitate innovation in companies. This section examines how social ties and learning processes within organizations facilitate innovation. Knowledge Management Capability (KMC) is typically defined as the organization's capacity to generate, disseminate, and utilize knowledge resources to produce principles of competitive advantage. KMC allows organizations to discover, analyze, and manage necessary and available knowledge to enhance knowledge resources and attain organizational objectives (Chawla & Joshi, 2010). Most scholars concur that KMC encompasses the processes of acquiring, sharing, and applying knowledge (Chen & Huang, 2009). Knowledge acquisition pertains to a firm's capacity to seek and obtain new information and knowledge from pre-existing knowledge. Also, Knowledge sharing is the process by which people share their knowledge and experience to improve and produce insightful new ideas (Liao & Wu, 2009).

Numerous research has substantiated the correlation between knowledge management capability and innovation aptitude. Le and Lei (2019) assert that a firm's capacity for innovation is significantly contingent upon its proficiency in knowledge transformation and implementation. Innovation is not the only focus of knowledge management; it also creates an atmosphere that encourages innovation. Ling and Nasurdin (2010) assert that good knowledge management enhances a firm's organizational capacity for innovation by perpetually evolving its administrative processes, information systems, and organizational structure into

innovative frameworks. Costa and Monteiro (2016) assert that knowledge management capability substantially enhances innovation by transforming tacit knowledge to explicit knowledge, also improving the capacity to identify knowledge gaps, subsequently making this knowledge available and accessible. Costa and Monteiro (2016) evidenced the substantial impact of knowledge management capability on diverse types of innovation through a rigorous analysis of 45 seminal works. KMC enables organizations to deliberately control knowledge inflows and outflows, facilitating the effective execution of external exploitation and internal innovation. Naqshbandi and Jasimuddin (2018) found that Knowledge Management Capabilities (KMC) enhance and expedite the acquisition and application of knowledge, hence augmenting the innovation capacity of 172 French enterprises.

Recent research indicates that the primary factors influencing an organization's innovation processes are the acquisition, diffusion, and application of knowledge resources (Le & Lei, 2019). Additionally, regarding the relationship between KMC and ambidextrous innovation, Andriopoulos and Lewis (2009) asserted that KMC enables organizations to leverage existing knowledge and experiences for incremental innovation while simultaneously enhancing their capacity to explore new knowledge to promote radical innovation. Organizations with a higher KMC are anticipated to exhibit greater efficiency in striking a balance between exploitative and exploratory technological innovations in an ambidextrous manner. The findings indicated that KMC has a positive correlation with exploitative practices and ERIs. Despite the acknowledged positive link between Knowledge Management Capability(KMC) and innovation, empirical research examining the relationship between KMC, and several facets of innovation remains insufficient.

H7: *The KMC Mediates the Relationship between Acquisition and Radical Innovation Capability.*
H8: *The KMC Mediates the Relationship between Development and Radical Innovation Capability.*
H9: *KMC Mediates the relationship between Egalitarian and Radical Innovation Capability.*
H10: *The KMC Mediates the Relationship between Collaboration and Radical Innovation Capability.*
H11: *The KMC Mediates the relationship between Documentation and Radical Innovation Capability.*
H12: *The KMC Mediates the Relationship between Information and Radical Innovation Capability*

Human Resource Practices, Knowledge Management Capacity and Incremental Innovative Capability

Businesses have recognized the importance of knowledge management (KM) due to its capacity to facilitate innovation through effective knowledge utilization. Numerous multinational enterprises (MNEs) are currently using Knowledge Management (KM) to optimize the value of the knowledge possessed by their existing and prospective customers and shareholders. Lichtenthaler (2017) posits that a company's ability to acquire, retain, and utilize knowledge in open innovation is most accurately characterized by the notion of organizational learning. Collaboration, innovative initiatives, and efficient knowledge management frameworks are crucial for multinational enterprise innovation endeavors. Both internally and externally, a company's innovative concepts can proliferate rapidly due to the dissemination of information across several locations. A company's knowledge management practice encompasses a range.

Knowledge management capacity is crucial for innovation as it identifies knowledge deficiencies, amalgamates internal and external knowledge, and enhances its availability and accessibility for the innovation practice (du Plessis, 2007). Multinational enterprises can enhance their innovative endeavors by adopting the open innovation paradigm, which involves obtaining external knowledge and utilizing external channels for the commercialization of new insights. A benefit of knowledge management is that it enhances the organization's open innovation initiatives. Tan and Nasurdin (2011) assert that knowledge management capacity functions not only as a prelude to organizational innovation but also as an intermediary mechanism linking organizational elements, such as human resource management practices, to innovation outcomes. These authors assert that HRM strategies empower organizations to improve employees' capacity to generate expertise in their field and maximize the influence of group knowledge on organizational innovation. This study aims to elucidate the mediation mechanism by which knowledge management capacity influences the effects of Human Resource Management (HRM) practices on exploitative and Employee Retention Intention (ERI) behaviors, thereby addressing existing research gaps.

An organization's knowledge management capacity denotes the degree to which knowledge resources are generated, disseminated, and utilized across functional boundaries. The KM capability is dynamic, allowing organizations to manage their knowledge bases by reorganizing and realigning the processes of knowledge

exploration, retention, and exploitation both internally and externally (Lichtenthaler & Lichtenthaler, 2009). The pace of invention is exceedingly rapid, and the intense battle for market share is escalating daily. Innovators, business executives, and specialists often concentrate on developing groundbreaking breakthroughs to generate new markets and categories for technologies, products, and services, thereby securing a substantial advantage over competitors. Although this is accurate, the significance of incremental innovation must not be disregarded. The market impact can be substantial, even if it is not immediately evident or quantifiable at the time of introduction. Therefore, this research posits that:

H13: *The KMC mediates the relationship between Acquisition and Incremental Innovative Capability.*
H14: *The KMC mediates the relationship between Development and Incremental Innovative Capability.*
H15: *The KMC mediates the relationship between Egalitarian and Incremental Innovative Capability.*
H16: *The KMC mediates the relationship between Collaboration and Incremental Innovative Capability.*
H17: *The KMC mediates the Relationship between Documentation and Incremental Innovative Capability.*
H18: *The KMC mediates the relationship between Information and Incremental Innovative Capability.*

3. Methodology

Research Design

This research aims to investigate how factors correlate to one another (constructs), such as distributive human resource practices, KM, and organizational innovation, quantitative research is appropriate. The variables were measured with a research instrument, and the data gathered was then analyzed statistically (IBM SPSS Statistics and PLS-SEM). In terms of data collection, a survey was used because it is associated with the deductive approach and has been cited as one of the most prominent data collection strategies in business-related research (Sekaran & Bougie, 2010). The survey is appropriate because many respondents were needed for this study, and it is highly economical practically.

Population and Sample

This study approach is supported by research findings which have found that subjective self-reports, in terms of organization perception employee perception of their organizational practices. As such, to understand the HR practices for knowledge flow and innovation from the perspective of individual employees, an organization the research population identified all SME-ICT in Malaysia.

Sampling Design

SME Corp., Malaysia provided a list of companies from which to sample for this thesis. As the secretariat for the National SME Development Council (NSDC), SME Corp serves as the primary source of information and advice for all Malaysian small and medium enterprises (SMEs). An alphabetical list of small and medium-sized enterprises (SMEs) is available on the website. It was necessary to obtain the list of businesses included in the ICT sector for this investigation. At the time of access in August 2020, there were 500 companies on the list, which served as a population frame. Businesses in Malaysia's Greater Kuala Lumpur/Klang Valley region, which includes the city of Kuala Lumpur as well as its surrounding suburbs, cities, and towns in the state of Selangor, were selected.

Survey Instruments

The survey questionnaire for this study was created by modifying and compiling a number of survey instruments that had been used by other researchers in the past. As indicated in Table 1, the study's questionnaire was modified from previous research.

Table 1: Survey Items

	Constructs	Dimensions	Sources of Measurement Scales	Adopt/Adapt	No of items
1	Innovative capability	Incremental innovative capability	Subramaniam & Youndt (2005)	Adapt	3
		Radical innovative capability			4
2	Knowledge management capacity	Knowledge management capacity	Chen & Huang (2009)	Adapt	7

3	Innovative-centric HRM practices	Acquisition HR Egalitarian HR Documentation HR Information System HR Collaborative HR Development HR	Youndt & Snell (2004) Kang, Morris, & Snell (2007)	Adapt	34

Data Analysis

This paper suggests that a partial least squares (PLS) technique is frequently more appropriate when there is a relatively fresh or evolving model, or when the theoretical model or measurements are not well-formed (Chin & Newsted,1999). Partial Least Square (PLS) has gained attention among behavioral researchers to explore a new theory or research model in the studies.

4. Results and Discussion

Demographic

The research population comprised SMEs from the ICT sector in Malaysia. Data were collected from the SMEs in Selangor, the Federal Territory, Cyberjaya, and Putrajaya. The minimum sample size for this study is 160, as determined by the G-Power analysis. This study successfully gathered 200 replies following data collection. This thesis was derived from a list of companies on the SME Corp, Malaysia website. SME Corp serves as the secretariat for the National SME Development Council (NSDC) and acts as the primary source of information and consulting services for all SMEs in Malaysia. The website offers an alphabetical listing of SMEs categorized by several industry groupings. The list of firms in the ICT industrial sector was obtained for this research. In December 2020, the access point had a list of 6,594 companies, serving as the population frame. The demographic information of the respondents included gender, age, educational attainment, work position, tenure, and the number of employees in the SME company.

Table 2 indicates that there were 110 male respondents, constituting 55 percent, and 90 female respondents, representing 45 percent. The respondents' ages varied, with the predominant group being 36 to 45 years old (49.8 percent), followed by 25 to 35 years old (29.9 percent) and 46 to 55 years old (15.4 percent). Only 8 employees were above 55 years old, constituting 4.0 percent, while those under 25 years old represented 1 percent. Most respondents possess a degree (85.0 percent), a diploma (7 percent), or a master's degree (8 percent). The employees represented four distinct job levels. Most respondents possess a degree (85.0 percent), a diploma (7 percent), or a master's degree (8 percent). The workforce comprised four managerial job levels (85.5 percent), management/director positions (8.9 percent), the owner (4.0 percent), and top executives (5 percent). The duration of services is categorized as follows: 5 to 10 years (73.5 percent), 3 to 5 years (19.0 percent), less than one year (5.0 percent), and more than 10 years (2.5 percent). The employee distribution across 200 organizations was as follows: more than 75 employees (71 percent), 10 to 30 employees (12.5 percent), 30 to 60 employees (10 percent), and fewer than 10 employees (6.0 percent).

Table 2: Demographic factors

Demographic Profile		Frequency	Percentage
Gender	Male	110	55.00
	Female	90	45.00
Age	below 25 years old	2	1.0
	25-35 years old	60	29.9
	36-45 years old	100	49.8
	46-55 years	31	15.4
	More than 55 years	8	4.0

Level of Education	Diploma Degree	14	7.0
	Master	170	85.0
		16	8.0
Job Level	Owner Top	8	4.0
	Management/Direct or	5	2.5
	Managerial	16	8.0
		171	85.5
How long have you been in the organization	Less than 1 year 3-5 years	10	5.0
	5-10 years	38	19.0
	More than 10 years	147	73.5
		5.	2.5
How many employees are in your company organization	Less than 10	12.0	6.0
	10-30	25	12.5
	30-60	21	10.0
	More than 75	142	71.0

Data Screening

Missing Data

There were 10 variables including six independent variables, two dependent variables 1 mediating variable, and 1 moderating variable. Overall, the total items for 10 variables were 48 items. The number of cases was 200 cases, and the total value was 7600. Therefore, there were no missing values in this study.

Outliers

In assessing the outliers, Mahalanobis distance is one measure of that multivariate distance. The values, then there are issues with the outliers. The findings showed that the Mahalanobis distance values (D2) ranged from a minimum of 0.364 to a high of 12.403. D2 values for 21 of the cases were evaluated, and the results showed that the report contained multivariate outliers. Thus two-one of the data was deleted. As a result, there was no outlier, as the highest Mahalanobis value decreased from 24.93 to 12.403.

Common Method Bias (CMB)

For this study, since the total variance explained was 6.39 percent, which is less than 50 percent, it can be concluded that there were no issues with common method variance in this study.

Descriptive Statistic

This study conducted a descriptive analysis that included mean, standard deviation, minimum, maximum, kurtosis, and skewness for each dimension. In the realm of egalitarianism, the least answer value was 1.0, while the maximum was 5.0. The mean value is 3.741, and the standard deviation is 0.688, indicating a high level of egalitarian behavior among the respondents in this study. The five elements of egalitarian exhibited a skewness of -0.429 and a kurtosis of 1.211. Kline (2011) states that the appropriate range of normalcy is characterized by skewness values below 3 and kurtosis values below 10. Therefore, this signifies that the data for this investigation was normally distributed.

The minimal value for collaboration was 1.25 and the maximum value was 5.0. The mean value was 3.917, and the standard deviation was 0.643, indicating a high level of collaborative practice among the respondents in this study. The eight components of collaboration exhibited a skewness of -0.936 and a kurtosis of 2.866, indicating that the data for this study was normally distributed.

The lowest value for the development of HRM practice was 1.00, while the highest value was 5.00. The mean value was 3.936, and the standard deviation was 0.667, indicating a high level of HRM practice growth among the respondents in this study. The eight components of HRM development exhibited a skewness of -0.936 and a kurtosis of 2.866, indicating that the data for this study was normally distributed.

The lowest value for the documentation of HRM practice was 1.00, while the maximum value was 5.00. The mean score was 4.018, and the standard deviation was 0.692, indicating a high level of HRM practice growth

among the respondents in this survey. The four components of HRM development exhibited a skewness of -1.236 and a kurtosis of 3.556, indicating that the data for this study was normally distributed.

The subsequent step was the descriptive analysis of the information system. The minimum value for information system practice was 1.00, while the maximum value was 5.00. The mean value was 3.75, and the standard deviation was 0.692, indicating a high level of information system practice among the respondents in this survey. The four components of the information system revealed a skewness of -0.723 and a kurtosis of 1.829, indicating that the data for this investigation was normally distributed.

The four acquisition elements reveal that the least acquisition practice value was 1.00, while the maximum value was 5.00. The mean value was 3.59, and the standard deviation was 0.648, indicating a high level of information system practice among the respondents in this study. In the four acquisition items, the skewness was -0.641 and the kurtosis was 1.576, indicating that the data for this study was normally distributed.

The six components of knowledge management capacity demonstrate that the minimal value for its practice was 1.00, while the highest value was 5.00. The mean value was 3.89, and the standard deviation was 0.659, indicating a high degree of knowledge management capability practice among the respondents in this study. In the six acquisition items, the skewness was -0.987 and the kurtosis was 3.136, indicating that the data for this study was normally distributed.

The three components of incremental innovation capabilities demonstrate that the minimal value for its practice was 1.00, while the highest value was 5.00. The mean score was 3.69, and the standard deviation was 0.791, indicating a high level of incremental innovation capability among the respondents in this study. The three market sense capability items had a skewness of -0.443 and a kurtosis of 0.280, indicating that the data for this study was normally distributed. The minimal value for radical innovation capabilities practice was 1.00, while the maximum value was 5.00. The mean score was 4.07, and the standard deviation was 0.805, indicating a high level of incremental innovation capability among the respondents in this study. The three market sense capability items had a skewness of -1.410 and a kurtosis of 3.479, indicating that the data for this study was normally distributed.

Assessment of Measurement Model

Factor Loading for Endogenous Constructs

According to Hair et al. (2014), To be regarded as having high internal consistency reliability, the loading needs to be more than 0.7. To extract the average variance with a minimum value of 0.50 and greater than 0.7, the item should be removed from the construct if the loading is less than the threshold value. The result for PLS revealed that all of the 48 items have a high factor loading with values that are greater than 0.5 and above 0.7.

The evaluation of composite reliability (CR) was conducted to ascertain dependability following the removal of components. Hair et al. (2014) assert that composite reliability should exceed 0.70, and the average variance extracted should be above 0.50 to ensure excellent internal consistency reliability and validity. Table 3 demonstrated the composite validity for the following values: acquisition (0.81), collaboration (0.902), development (0.889), documentation (0.851), egalitarian (0.881), information system (0.839), incremental innovation capability (0.846), knowledge management capability (0.902), and radical innovation capability (0.891). All indicators exhibit strong internal consistency values exceeding 0.7 for the evaluation of composite dependability. The findings validated the reliability of the 51 items.

Table 3: Assessment of measurement model

Construct	Number of Items	Item Deleted	Loadings for Retained Items	Composite Reliability	Average Variance Extracted (AVE)
1. Egalitarian	5	EGA1	0.577	0.881	0.601
		EGA2	0.700		
		EGA3	0.857		
		EGA4	0.844		
		EGA5	0.857		

2. Collaborative	8	COLAB1	0.718	0.902	0.536
		COLAB2	0.718		
		COLAB3	0.782		
		COLAB4	0.735		
		COLAB5	0.809		
		COLAB6	0.638		
		COLAB7	0.705		
		COLAB8	0.776		
3. Documentation of HRM Practice	4	DOCU1	0.711	0.851	0.588
		DOCU2	0.798		
		DOCU3	0.828		
		DOCU4	0.725		

The evaluation of average variance extracted (AVE) was conducted to ascertain reliability following the removal of components. Hair et al. (2014) assert that the variance extracted must exceed 0.50 to ensure excellent internal consistency reliability and validity. The composite validity for the values of acquisition (0.519), collaboration (0.536), development (0.538), documentation (0.588), egalitarian (0.601), information system (0.571), incremental innovation capability (0.647), knowledge management capability (0.571), and radical innovation capability (0.673) is presented. All indicators exhibit strong internal consistency values exceeding 0.7 for the evaluation of composite dependability. The findings validated the reliability of the items.

Table 4: Assessment of measurement model (continued)

Construct	Number of Items	Item Deleted	Loadings for Retained Items		Composite Reliability	Average Variance Extracted (AVE)
4. Development of HRM Practice	8	DEVELOP2	DEVELOP1	0.545	0.889	0.538
			DEVELOP3	0.74		
			DEVELOP4	0.81		
			DEVELOP5	0.746		
			DEVELOP6	0.822		
			DEVELOP7	0.66		
			DEVELOP8	0.774		
5. Information System	4		INFO1	0.748	0.839	0.571
			INFO2	0.866		
			INFO3	0.815		
			INFO4	0.557		
6. Acquisition	4		ACQU1	0.740	0.81	0.519
			ACQU2	0.816		
			ACQU3	0.723		
			ACQU4	0.583		

Table 5: Assessment of measurement model (continued)

Construct	Number of Items	Item Deleted	Loadings for Retained Items		Composite Reliability	Average Variance Extracted (AVE)
7. Knowledge Management Capacity	7		KMC1	0.669	0.902	0.571
			KMC2	0.828		
			KMC3	0.799		
			KMC4	0.818		
			KMC5	0.674		
			KMC6	0.780		
			KMC7	0.701		

8. Radical Innovative Capability	4	RADIC1	0.871	0.891	0.673
		RADIC2	0.805		
		RADIC3	0.899		
		RADIC4	0.691		
9. Incremental Innovative Capability	4	INNOC1	0.835	0.846	0.647
		INNOC2	0.728		
		INNOC3	0.846		

Discriminant Validity

Additional analysis was conducted to ascertain the discriminant validity. The Fornell and Larcker criterion was employed to assess the cross-loadings among the other constructs (Fornell & Larcker, 1981). Table 6 indicates that the cross-loadings of the construct exceed those of the other constructions, hence satisfying the requisite assumption. The cross-loadings of all objects in the reflecting model range from 0.695 to 0.839. Consequently, this outcome indicates that no item was loaded more significantly on constructs that were not intended for measurement.

Table 6: Discriminant model

Constructs	1	2	3	4	5	6	7	8	9	10
1. Acquisition	**0.721**									
2. Collaboration	0.717	**0.732**								
3. Development	0.627	0.698	**0.734**							
4. Documentation	0.600	0.668	0.717	**0.767**						
5. Egalitarian	0.622	0.743	0.55	0.592	**0.775**					
6. Information System	0.711	0.702	0.681	0.753	0.593	**0.756**				
7. Incremental Innovation Capability	0.603	0.622	0.718	0.503	0.522	0.608	**0.804**			
8. Knowledge Management Capability	0.634	0.864	0.62	0.625	0.944	0.626	0.571	**0.755**		
9. Radical Innovation Capability	0.536	0.596	0.929	0.652	0.468	0.577	0.457	0.527	0.597	**0.82**

Assessment of Structural Model (Hypotheses Testing)

R Square

The R^2 values of the incremental innovation capability are 0.589 (58.9%), radical innovation capability was 0.873 (87.3%), and knowledge management capability 0.956 (95.6 %), which suggested highly explained by eight exogenous constructs of acquisition, collaboration, development, documentation, egalitarian, information system, and knowledge management capability.

Direct Relationship Human Resources Practice with Knowledge Management Capacity

Correlation between human resources and knowledge management capacity in terms of collaboration (β= 0.446), development (β= 0.029), and egalitarianism (β= 0.675). The path coefficient was negative for acquisition (β= -0.091), documentation (β= -0.017), and information system (β= -0.029), whereas it was positive for knowledge management capacity (β= 0.424) and market sense capability (β= 0.765). The subsequent stage is to ascertain the significance of the link. Bootstrapping is necessary for each data collection, necessitating a minimum of 500 samples. The p-value and t-value must be below 0.05 ($p < 0.05$) to accept the hypotheses on the link. The subsequent stage is to ascertain the significance of the link.

Each data set necessitates bootstrapping, which requires a minimum of 500 samples. The p-value and t-value must be below 0.05 ($p < 0.05$) to accept the hypotheses on the link. The findings indicate that acquisition

(t=2.603, p <0.05), collaboration (t=10.61, p <0.05), and egalitarianism (t=16.03, p <0.05) significantly influence knowledge management capacity since the t-values surpass 1.96 and the p-values are less than 0.05. Consequently, the hypotheses on the link (H1, H3, & H4) were validated. The other construct did not significantly affect radical innovation capability, since the t-values were below 1.96 and the p-values exceeded 0.05.

Mediating Effect of KMC on HRM and Radical Innovation Capability

The results indicate that the path coefficients for acquisition (β= 0.039), documentation (β= -0.007), and information system (β= 0.012) were positive. The path coefficients for collaboration (β= -0.189), development (β= -0.012), and egalitarian (β= -0.286) were negative. The subsequent step is to evaluate the importance of the link. The data necessitate bootstrapping with a total of 500 samples per data set. To validate the importance of the association, the p-values must be below 0.05 (p<0.05) and the t-value must surpass 1.96 to accept the hypotheses regarding the link. The findings indicate that knowledge management capability did not mediate the association between human resources and radical innovation capability, as the t-value was below 1.96 and the p-value exceeded 0.05. Consequently, the assumptions regarding the association (H7-H12) were not substantiated.

Mediating Effect of KMC on HRM and Incremental Innovation Capability

The results indicate that the route coefficients for collaboration (β = 0.465), development (β = 0.03), and egalitarian (β = 0.704) were positive. Conversely, the route coefficients were negative for acquisition (β= -0.095), documentation (β= -0.018), and information system (β= -0.03). The subsequent step is to evaluate the importance of the link. The data necessitate bootstrapping with a total of 500 samples per data set. To validate the importance of the relationship, the p-values must be below 0.05 (p<0.05), and the t-value should surpass 1.96 to accept the relationship hypotheses.

The findings indicate that information management mediates the association between collaboration and incremental innovation capability (t=2.617, p<0.05) as well as egalitarianism (t=2.576, p<0.05), with the t-values above 1.96 and p-values being less than 0.05. Consequently, the hypotheses regarding the link (H15 and H18) were validated. The outcomes of H13, H14, H16, and H17 were not corroborated.

5. Discussion and Conclusion

In this section, the findings from the data analysis are further discussed and compared with the previous findings. The purpose of the discussion is to compare and verify the findings with the other studies. In the next subsection discussion according to the objectives of this study.

Direct Relationship Innovative Centric Human Resources Practices with KMC

The findings of the study indicate that human resources practices have substantial knowledge management capabilities. The practices of acquisition, egalitarianism, and collaboration (H1, H3, H4) are crucial for enhancing knowledge management ability in human resources. This outcome (H1, H3, H4) aligns with the findings of Sheng and Chien (2016), who addressed the acquisition of new knowledge and the development of new goods for new clients or emerging markets in the context of exploration.

The principles of acquisition, egalitarianism, and collaboration can be elucidated through ongoing organizational learning. The acquisition enables the individual to learn from peers and acquire new experiences. Furthermore, egalitarianism enables employees at all levels to acquire knowledge within the organization. Collaboration across several departments facilitates the flow of information and experiences among personnel. Consequently, human resources practices are vital to the organization since they enhance opportunities and benefits for organizational performance. The organization's continuous learning orientation enhances its competencies and bolsters the competitive advantage of its human capital (Sheng & Chien, 2016).

The adoption of HRM techniques enables organizations to improve their ability to manage knowledge through the generation, dissemination, and implementation of innovative concepts. According to Zheng et al., (2010), organizations derive greater benefits from diversified external networks developed by employees, as these networks provide varied information kinds and resources, hence enhancing their understanding of recent

technological and institutional advancements. HRM strategies facilitate knowledge sharing, acquisition, and application by promoting improved teamwork and cooperation among stakeholders (Youndt and Snell, 2004). Also, Egalitarian HRM approaches that reduce or eliminate hierarchical disparities have been shown to promote employee engagement in the acquisition, dissemination, and application of knowledge.

Documentation HRM approaches facilitate employee sharing, acquisition, and application of knowledge by mandating the creation and completion of knowledge storage devices, including information systems, manuals, and standard operating procedures (Davenport & Prusak, 1998). Technological HRM methods facilitate the formulation, capture, and management of organizational knowledge by using information technology infrastructure (Youndt & Snell, 2004). A firm's knowledge management role is enhanced by approaches including online databases, groupware, data warehouses, and information processing software (Kamhawi, 2010).

Collaborative HRM strategies facilitate knowledge sharing, acquisition, and application by promoting improved cooperation and collaboration among stakeholders (Youndt and Snell, 2004). Egalitarian HRM approaches that reduce or eliminate hierarchical disparities have been shown to promote employee engagement in the acquisition, sharing, and application of knowledge (Youndt and Snell, 2004). Consequently, human resources practices are crucial to the organization since they enhance opportunities and benefits for organizational performance. The organization's continuous learning orientation enhances its competencies and augments the competitive advantage of its human capital (Sheng & Chien, 2016).

Consequently, human resources practices are crucial to the organization since they enhance opportunities and benefits for organizational performance. The organization's continuous learning orientation enhances its competencies and strengthens the competitive advantage of its human capital (Sheng & Chien, 2016). Thus, the amalgamation of acquisition, egalitarianism, and cooperation has enhanced knowledge management capabilities.

Nonetheless, the development, documentation, and information were not substantial about knowledge management capacity (H2, H5, H6). This has been attributed to inadequate administration of the database system. An SME company is a small enterprise that is unable to consistently maintain its collection of papers. They must allocate substantial resources for an effective database management system. Furthermore, the development necessitates an investigation of novel concepts that are currently absent among the personnel. The employees require exposure and training, rendering development inconsequential to knowledge management capabilities.

Hypothesis H5 posits that documentation does not influence knowledge management. Capabilities in Documentation and Knowledge Management. These indicated that the absence of an adequate documentation system in the majority of small and medium-sized firms may account for the ineffectiveness of organizational learning capability and its correlation with other factors. The standardization of procedures and documents inside the SME is not yet highly developed. The potential for information integration and document standardization among firms is significant, given that the cluster has been functioning for less than five years. Moreover, the predominant proportion of respondents (73.5%) engaged in this study had been employed at the organization for a duration of 5 to 10 years, so limiting their ability to establish an effective documentation system that enhances their knowledge management capabilities.

Among these challenges include the lack of standardization and regulations for document management, along with the restricted utilization of electronic documents and Electronic Document Management Systems (EDMS). Certain criteria evaluated, including executive management commitment and a favorable opinion of document management methodologies and practices, are regarded as strengths for the cluster. Consequently, SMEs will be more proficient in standardizing documents and processes and executing an EDMS. The overwhelming majority of surveyed SMEs engage in document management. A position such as this indicates a company's dedication to investing. Although these investments seem inadequate for the implementation expenses of EDMS, prevailing management practices in this sector, which depend on the administration of paper and electronic documents, validate this assertion. Despite the rapid evolution of document formats in recent years,

corporations continue to depend on conventional techniques, as demonstrated by their storage tools and the limited adoption of electronic documents for information dissemination.

An information system was determined to be not significant for knowledge management competence. Research indicates that the accessibility of information and knowledge management steers corporate innovation processes towards enhanced competitive advantage (Mao, Liu, Zhang, & Deng, 2016). Owners and managers of small and medium-sized enterprises may derive advantages from some findings of our research. Our research yields two key findings: This research indicates that Information Technology capabilities significantly facilitate the development of higher-order capabilities. Surpasses the performance of tiny enterprises. The allocation of finances alone is insufficient for the integration of Information Technology into their processes; nonetheless, it is essential to acknowledge that Information Technology can yield beneficial outcomes if they opt to apply or enhance its more advanced or complex capabilities.

The Mediating Effect of KMC between Human Resource Management Practices and Radical Innovation Capability

The findings indicate that knowledge management capacity did not moderate the association between human resources and radical innovation capability, since the t-value was below 1.96 and the p-value was below 0.05. The suggestions regarding the link from H7 to H12 were not substantiated. This may be elucidated by the inclination of SME ICT enterprises in Malaysia towards radical innovation. Most organizations typically encounter difficulties in handling the introduction of products founded on radical innovations. They lack the proficiency to navigate the hurdles and capitalize on the commercial opportunities associated with the introduction of disruptive or discontinuous technology (Alfawaire & Atan, 2021). The unpredictability of outcomes and market applications for a novel concept renders the function of knowledge management capabilities a significant challenge in forecasting the new product. It became harder to evaluate an innovation's potential and market acceptance the more radical it is. There is a substantial knowledge gap between theory and practice due to the growing complexity and market dynamics. Numerous organizations lack the structure to foster innovative ideas, identify critical market trends, swiftly react to evolving market conditions, or initiate market reforms. This case elucidates why knowledge management capability did not mediate the association between human resource management practices and radical innovation capability. Implementing radical innovation is inherently tough.

The Mediating Effect of KMC between HRM Practices and Incremental Innovation Capability

The study reveals that knowledge management capacity moderates the association between egalitarian and incremental innovation capabilities, and the relationship between cooperation and incremental innovation potential is mediated by knowledge management capacity. Collaboration within teams enables all members to acquire new information and experience from one another, and the principle of equality effectively facilitates knowledge management capacity for incremental innovation. The integration of new knowledge with existing knowledge facilitates the reconfiguration of organizational capacities and competencies, resulting in value-added products. Knowledge management skills are crucial for organizations and SMEs to foster product and process innovation capabilities, attaining competitive advantage.

However, knowledge management capacity did not mediate the interaction between acquisition, development, documentation, and information, and both radical and incremental innovation capability. Acquisitions in SMEs facilitate business expansion through the purchase of an existing enterprise, leading to a substantial increase in resources and knowledge, which often enhances diversity and transforms a company's resource and knowledge foundation. However, in the absence of resource sharing throughout the broader organization, novel combinations and opportunities may remain unreal.

The mediation effect of KMC did not influence the connection between development approaches and innovative capabilities. This occurs in SMEs because KMC did not moderate the relationship between development practices and innovation capability. Training and development activities can enhance alignment between employees' existing and necessary knowledge and skills, fostering knowledge creation and advancing human capital. However, skills may decline and become outdated, and the capacity for knowledge management did not mediate the relationship between acquisition and innovative capabilities.

Poor record management in documentation processes hinders KMC procedures and leads to business innovation failures. Insufficient planning, design, coordination, and assessment are factors that hinder KMC from mediating the relationship between information systems and innovation capabilities. The insufficient expertise of knowledge managers and staff leads to the use of the information system for fostering innovative capabilities. Furthermore, SMEs face difficulties with inadequate planning and inflated expenses associated with the implementation of new information technology. Therefore, the capacity for knowledge management did not mediate the relationship between acquisition and innovative capabilities.

Conclusion

Research has shown that innovation is a crucial driver of growth and competitive advantage for organizations. However, Malaysia's level of innovation is still low, and studies on factors affecting innovation capability and corporate innovation are scarce. Human capital is the primary resource for fostering innovation, as it provides expertise, knowledge, and skills that can transform an organization. Common practices in human capital management include acquisition, collaboration, development, documentation, egalitarianism, and information systems.

Malaysian ICT SMEs possessing significant social capital promote collaboration both internally and externally among firms. Employees with exceptional competence, creativity, and intelligence are considered essential for enhancing innovation capabilities. These employees enhance the organization's innovation capacity by delivering services and products that offer unique advantages over competitors, addressing client challenges with innovative methods, proposing creative solutions and ideas, presenting original solutions to clients, and pursuing unconventional solutions to problems.

Knowledge management (KMC) is a vital resource that affects innovative capabilities. KMCs promote collaboration both internally and externally among firms, allowing employees to acquire proficiency in collaboration, identify and resolve issues, engage in dialogue and idea exchange, disseminate information, learn collectively, and establish partnerships with customers, suppliers, alliance partners, and others.

In conclusion, further research is needed to ensure the growth of local businesses in Malaysia through organizational innovation. The HR framework of a Malaysian company can be structured to promote knowledge acquisition, information exchange, and knowledge application to enhance innovative skills within Malaysian organizations.

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