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The Impact of Knowledge Management on Business Performance: A Case Study of Door Manufacturers in Vietnam*

Ky NGUYEN[1], Ha Hong NGUYEN[2]

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Abstract

The objective of this study was to examine the relationship between knowledge management and business performance through the role of innovation capabilities in door manufacturing companies in Ho Chi Minh City, Vietnam. The study proved the importance of knowledge management as well as the important role of innovation capacity in affecting the business performance of door manufacturing companies. The study was conducted by surveying 400 managers/CEOs who are members of the Board of Directors who directly run door manufacturing and trading businesses in Ho Chi Minh City collected from March 2021 to October 2021. The authors used confirmatory factor analysis (CFA) to determine the most common observed variables of each factor. Research findings indicated that knowledge management orientation and innovation capability impacted business performance and confirmed the mediating role of innovation capability towards previous variables. These results kindly contribute to theoretical and practical bricks of building determinants of business performance as well as knowledge management indoor manufacturers for future consideration. From the above results, the study has suggested managerial implications to further improve the investment in developing knowledge management elements and innovation capacity to achieve high business results in enterprises door production in Ho Chi Minh City, Vietnam in the future.

Keywords: Knowledge Management, Innovation Capability, Business Performance, Door Manufacturing Companies

JEL Classification Code: L74, M11, M51, O31, P25

1. Introduction

Small and medium-sized enterprises (SMEs) play an important role in economic development because they are one of the primary contributors to economic growth (Saad et al., 2017; Nguyen, 2021). In fiercely competitive environment environments, innovation is very important not just for survival but for seizing new opportunities, seeking to protect knowledge assets, and trying to gain a competitive advantage in the market (Hurmelinna-Laukkanen et al., 2008; Teece et al., 1997; Samson & Gloet, 2014). The ability to develop as well as launch innovative new products utilizing cutting-edge technology before or shortly after foreign competitors is critical to gaining first-mover advantages, accomplishing product success, obtaining market share, steadily rising return on investment, and long-term survivability (Allocca & Kessler, 2006; Cakar & Ertürk, 2010). An organization must develop its innovation capability (IC) to become creative (Saunila & Ukko, 2013). Innovation is an evolutionary process within an organization that involves the adoption

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[1]First Author. [1] Ph.D. Student, Tra Vinh University, Vietnam [2] Lecturer, Faculty of Business Administration, Nguyen Tat Thanh University, Vietnam. Email: nguyenkymba@gmail.com

[2]Corresponding Author. Associate Professor, Vice Dean, School of Economics and Law, Tra Vinh University, Vietnam. ORCID ID: 0000-0001-7404-0599. [Postal Address: 126 Nguyen Thien Thanh Street, Ward 5, Tra Vinh City, Tra Vinh Province, 940000, Vietnam]
Email: honghaicbtv@yahoo.com.vn; hongha@tvu.edu.vn

of any new product, mechanism, legislation, or service (Calantone et al., 2002; Saunila & Ukko, 2013). As a result, innovation can be considered an organizational capability because it is a process that implements resources with a new capacity to create value (Yang et al., 2006; Saunila & Ukko, 2013).

Because of the significance of innovation, researchers have sought to identify various driving forces of innovation (Becheikh et al., 2006; Kim et al., 2012). Quality and innovation management are rapidly increasing activities for all types of businesses, and they are often associated with gaining a competitive advantage (López-Mielgo et al., 2009; Kumar & Sharma, 2017; Psomas et al., 2018). Both can be viewed as dynamic organizational capabilities based on learning, advancement, and keep changing (López-Mielgo et al., 2009). Because of the significance of innovation, researchers have sought to identify various driving forces of innovation (Becheikh et al., 2006; Kim et al., 2012). Equally as important, innovativeness is critical for superior quality performance, and this defining feature of market research and development capability helps companies gain a competitive advantage due to its nature of provoking the success of the innovation (Zehir et al., 2015; Yi et al., 2018). As a result, it is not surprising that many forward-thinking manufacturing and service companies around the world focus on innovation capability, an example of Vinfast and Viettel of Vietnam.

Knowledge management (KM) capabilities are operational methods for continually creating knowledge; they can stimulate knowledge acquisition, knowledge storage, knowledge protection, and knowledge sharing in an organization (Gold et al., 2001). The need of establishing knowledge repositories and creating a knowledge-sharing environment for greater innovativeness is emphasized by KM capabilities. Successful door manufacturing firms must understand how to form, manage, and control inter-organizational collaborations and collaborative relationships with construction partners (Lee et al., 2005; Pisano & Verganti, 2008; Ha, 2020). However, there has been a very little empirical study conducted to examine the KM skills and innovativeness that impact the business success of the doors manufacturing industry.

Currently, Vietnam has more than 30,000 large and small door manufacturing enterprises along with the rapid development of the construction industry. It is no longer limited to small production facilities with carpenters, bricklayers, mahogany, mahogany, etc. Door production materials are getting richer and richer to meet market demand, from aluminum to PVC, iron doors, all kinds of glass, composite, HDF, etc. High-rise buildings, and large urban areas, with clear design, require door products to have stable quality, higher resistance to water infiltration, and many new features such as sound insulation, heat insulation, and anti-corrosion resistance. This also requires door manufacturers to have a larger and larger scale, professional equipment to ensure quality and construction progress. Another limitation of not having a quality standard system is when the domestic door industry competes with foreign enterprises in its own country. Foreign enterprises often provide documents, technical standards, and standards when bidding, confirming the quality of their country's products, while domestic enterprises are very confused in this regard. In addition, door manufacturing enterprises with design units and investors have not been able to link together, so they have not created a strong enough brand to compete in the market.

2. Literature Review

2.1. Resource-Based Theory (RBT) and Theory Dynamic Capabilities

RBT views a firm as a bundle of resources, including tangible and intangible assets and capabilities, i.e., the firm's ability to efficiently use its resources to accomplish its objectives (Barney and Clark, 2009). RBT emphasizes idiosyncratic firm attributes, i.e., different firms have different resources and capabilities (Eisenhardt & Martin, 2000; Leiblein, 2011). As a result, a company's business strategy should be built around its unique resources and capabilities. The uniqueness of a firm's resources and capabilities will start driving superior performance if the firm can respond appropriately to its external environment (Barney & Clark, 2009; Feng et al., 2017; Helfat & Martin, 2015). The firm's resources and capabilities are distinguished by their value, rarity, inimitable nature, and non-substitutability (Eisenhardt & Martin, 2000; Leiblein, 2011).

RBT has been used by researchers in recent years to describe the relationship between firm resources and capabilities and performance (Feng et al., 2017; Song et al., 2005). Marketing capability and innovativeness capability are among the most important firm capabilities for firm competitive advantage, as Peter Drucker has stated that "any business enterprise has two – and only two – basic functions: marketing and innovation."

2.2. Knowledge Management Orientation (KMO)

Capabilities in knowledge management Many researchers have proposed influencing KMO capabilities as prerequisites or organizational resources for effective KM (Lee & Choi, 2003; Gold et al., 2001; Lee & Kim, 2007). KMO capabilities, described as a company's ability to acquire, store, transfer, and protect organizational knowledge, are indeed an important foundation for a company's innovative capability, which is based on integrating new and existing knowledge (Gold et al., 2001). Tanriverdi (2005) contended that organizations with well-developed KM capabilities could indeed endorse

and encourage the evolution of innovativeness. This study comprises four critical KMO capabilities where there is the most agreement: knowledge acquisition, knowledge storage, knowledge dissemination, and knowledge protection. KMO capabilities include managerial efforts to obtain and generate useful knowledge (i.e. knowledge acquisition), a store that knowledge in an archive so that employees can easily access knowledge (i.e. knowledge storage), share and disseminate knowledge throughout the organization (i.e. knowledge dissemination), and prevent adverse knowledge use (i.e. knowledge protection).

Various KM capabilities may have an impact on the progression of e-business through the various diffusion stages (Alhawamdeh, 2007). KMO capabilities that broaden the creative envelopes, for example, are assumed to enable the firm to assess its stance and build an e-business strategy during the initiation stage. As the organization enters the e-business adoption phase and makes an attempt to tailor e-business activities to its specific environment, KMO capabilities help to reduce redundancy and respond quickly to the changing environments (Basadur & Gelade, 2006; Fosfuri & Tribo, 2008). More notably, the importance of KMO capabilities in the e-business routinization and infusion stages cannot be overstated. By establishing excellent KMO capabilities, a company can internalize acquired knowledge and combine it with existing knowledge, allowing them to gain e-business management experience and achieve their organizational innovation goals.

Furthermore, once e-business is first tried to introduce, firms place a significant burden on the adopter in terms of the knowledge required to effectively adopt and disseminate it (Lin & Lee, 2005). Firms that effectively acquire and integrate knowledge, for example, can reduce uncertainty while increasing administrative and technological distinctiveness (Zheng et al., 2010). Employees benefit from being able to easily capture and share tangible experiences and accumulated knowledge, which fosters creativity and innovation (Kamaşak & Bulutlar, 2010). Greater creativity and innovation in organizational processes are required to facilitate effective decision-making in business initiatives. The resilience of knowledge protection allows the firm to profit from its creations for a longer period of time, while also increasing the controllability of intangible assets (Hurmelinna-Laukkanen et al., 2008). As a result, this research proposed that knowledge management capabilities in terms of knowledge acquisition, knowledge storage, knowledge dissemination, and knowledge protection contribute positively to business performance.

2.3. Innovation Capability (IC)

Organizations with well-developed innovativeness show a willingness to introduce innovations and develop mechanisms for their application (Samson & Gloet, 2014). The ability to use a set of interconnected procedures to develop and implement new products and improve the quality of existing products is referred to as innovation capability (Wang, 2016). In other words, it is a continuous improvement philosophy that plays an important role in business development (Subramaniam & Nilakanta, 1996). It is the ability to generate and implement new ideas that result in innovation, the spread of which benefits the enterprise. Furthermore, Tsai et al. (2001) define innovation capability in terms of product innovation, process innovation, and managerial innovation. In our research, we take this approach. Much study has been conducted on the impact of absorptive capacity on innovation (or innovation capability). Nonetheless, few empirical studies, if any, have been conducted to confirm the impact of absorptive capacity on product innovation, process innovation, and managerial innovation.

2.4. Relationship between KMO and IC

Research and development are defined as systematic creative work undertaken to increase the stock of knowledge, including knowledge of man, culture, and society, including the use of this knowledge to develop new applications (Maistry et al., 2017). Innovation can occur unless a company is capable of innovating (Laforet, 2011). According to Adler and Shenbar (1990), IC consists of four aspects: the ability to develop new products that meet market needs; the ability to apply appropriate process technologies to produce new products; the ability to develop and adopt the new product and process technologies to meet future needs; and the ability to respond to accidental technological activities and unexpected opportunities created by competitors. As a result, the firm's IC is its ability to mobilize employee knowledge and combine it to create new knowledge, resulting in product and/or process innovation (Çakar & Ertürk, 2010; Nguyen et al., 2020). The achievement of organizational goals such as profitability, growth, market share, sales, and other strategic objectives is referred to as business performance (Homburg & Jensen, 2007; Hult et al., 2005).

H1: *In door manufacturing enterprises, there is a positive relationship between KMO and IC.*

H3: *In door manufacturing enterprises, there is a relationship between SC and IC.*

2.5. Relationship Between IC and BP Towards the Mediation Role of IC

According to Vicente et al. (2015), IC is the firm's capacity to develop a new product through a combination of innovation behavior, strategic capability, and internal technological process. Saunila (2014) proposed a research framework

for the measurement of IC based on a meta-analysis, which contains seven dimensions, notably interactive leadership culture, ideation and organizing structures, work climate and well-being, know-how development, regeneration, external knowledge, and individual activity, which are also used in the current study.

IC is one of the most important dynamics that allows SMEs to achieve high levels of competitiveness in both the domestic and international markets (Çakar & Ertürk, 2010). Organizations that invest in the development of their IC have a better chance of success in the future (Saunila & Ukko, 2013). There is a plethora of evidence in the academic literature indicating a positive relationship between a firm's IC and firm performance in the manufacturing industry (Cheng et al., 2010; De Clercq et al., 2011). Conversely, some studies show a negative relation or no connection at all (Capon et al., 1990; Chandler & Hanks, 1994; Zhang, 2011). Nevertheless, considerable practitioner-oriented literature suggests that innovation is the only way to survive and prosper in increasingly super-competitive markets (Rosenbusch et al., 2011). Based on these assertions, this study proposes that the development of IC by SMEs may improve business performance.

H2: *In door manufacturing enterprises, there is a positive relationship between IC and BP.*

H4: *In door manufacturing enterprises, IC takes a mediating role towards KMO and BP.*

3. Research Methods

3.1. Sample

To collect the data used for validating the measures and investigating the net effects as well as the level of necessity of one condition – innovativeness capability – for business performance. To ensure a high level of reliability, in this study the author used over 400 survey questionnaires in the Ho Chi Minh City area. The valid answer sheets were recorded by 385, with a successful ratio of surveys was 96.25%. Face-to-face interviews and a key informant approach (a senior manager) were used. Self-completed questionnaires are sent to mail/ Zalo (with phone or text before texting to contact them before) to leaders/CEOs who directly run businesses in the door industry in Ho Chi Minh City. The questionnaire was carried out from December 12th, 2021 to April 12th, 2022. To ensure a high level of reliability, in this study the author used over 400 survey questionnaires in Ho Chi Minh City.

3.2. Measures

Constructs examined were business performance, knowledge management orientation, and innovativeness capability. Based on the work of Tho and Trang (2011), five items were used to assess business performance. Knowledge management orientation was a second-order construct comprising four components, i.e., knowledge acquisition (measured by three items), knowledge storage (measured by four items), knowledge sharing (measured by three items), and knowledge protection (measured by four items) (Figure 1). The items were borrowed from Alavi and Leidner (2001), Gold et al. (2001), and literature review studies. Finally, innovativeness capability was measured by twenty-one items (Raghuvanshi et al. 2019). All items were measured by a five-point Likert scale, anchored by 1: strongly disagree and 5: strongly agree. The origin of the questionnaire was cited in English through research articles.

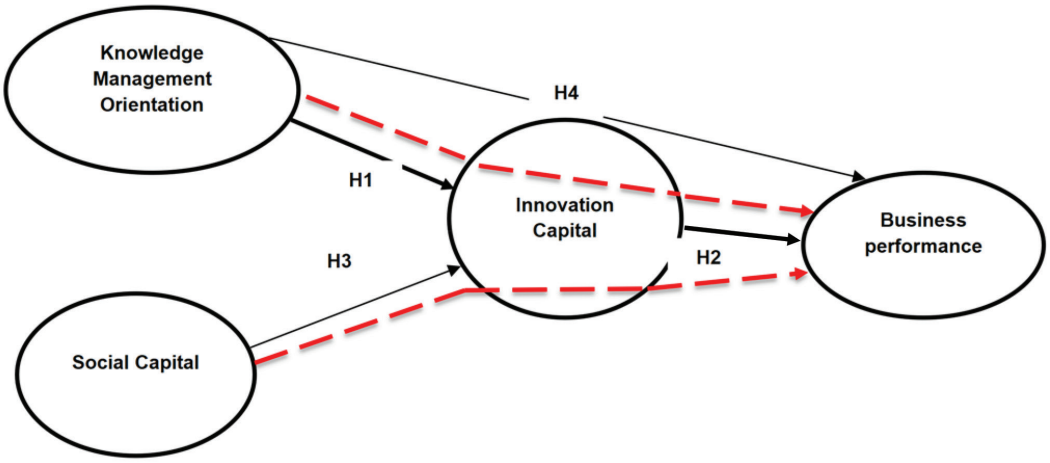

Figure 1: Conceptual Framework

3.3. Data Analysis

Tho and Trang (2011) modified and tested the construct measures used in this study with Vietnamese firms. Using confirmatory factor analysis, this study borrowed these measures and reconfirmed their reliability and validity (CFA). Measure validation was carried out in two steps. The CFA model of marketing capability was first evaluated before being combined with two first-order constructs (i.e., innovativeness capability and firm performance) to form a final measurement model.

4. Results and Discussion

4.1. Construct Validity of KMO

Construct validity was evaluated using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Hair et al., 2017). The primary objective of factor analysis throughout this study is to investigate how various items within each construct interact with one another and to create scales (by combining numerous closely correlated items) for use in the subsequent linkage analysis. The EFA was used to extract the loadings of factors utilizing varimax rotation. The eigenvalues, percent of the variance, and cumulative percent of variance are explained by factor analysis.

As shown in Table 1, all principal components loadings for KMO are greater than 0.651, accomplishing the minimum loading criteria. KMO accounts for 72.257 percent of the total variance. Index of KMO = 0.764 > 0.5 and Sig (Bartlett test) = 0.00 < 0.05. The mean of each component of KMO has a higher value than 3 and implied that these CEOs tend to have an agreement with this variable. Furthermore, the consistency of the measurement scale also was investigated by using Cronbach Alpha. Cronbach Alpha of each component is recorded at least 0.776 that evaluation of respondents for each item is consistent.

Each item loading must be higher than 0.5 for adequate validity and 0.7 for precise validity due to convergent validity. Furthermore, the Average Variance Extracted (AVE) indexes of each factor must be greater than 0.5 to ensure reliability and validity. The square root of the AVE for a component must be greater than the shared variance among all constructs in the conceptual framework due to discriminant validity.

Table 2 displays the items imply for each construct with Cronbach's alpha, Composite Reliability (CR), and AVE scored and reports that all constructs are completely

Table 1: Mean, Reliability Test, and Factor Analysis of KMO

	Knowledge Acquisition	Knowledge Storage	Knowledge Dissemination	Knowledge Protection
KA1	0.843			
KA2	0.834			
KA3	0.877			
KS1		0.838		
KS2		0.838		
KS3		0.813		
KS4		0.844		
KP1				0.885
KP2				0.651
KP3				0.781
KP4				0.795
KSH1			0.722	
KSH2			0.795	
KSH3			0.879	
Eigenvalue	4.679	2.873	2.000	1.558
% of variance	33.418	20.519	14.282	11.132
Cumulative %	33.418	53.938	68.220	79.352
Mean	3.32	3.05	3.26	3.48
Cronbach alpha	0.837	0.855	0.776	0.817

Table 2: Construct Validity of KMO

	CR	AVE	MSV	MaxR(H)	KSH	KS	KP	KA
KSH	0.843	0.643	0.207	0.855	**0.802**			
KS	0.934	0.825	0.207	0.734	0.455	**0.908**		
KP	0.871	0.628	0.62	0.875	0.628	0.734	**0.792**	
KA	0.875	0.701	0.51	0.888	0.598	0.717	0.643	**0.837**

CMIN/DF = 2.974, TLI = 0.949, CFI = 0.96.

Table 3: Construct Validity

	Mean	Alpha	CR	AVE	MSV	MaxR(H)	BP	KS	KP	KA	KSH	IC
BP	3.32	0.978	0.978	0.897	0.486	0.979	**0.947**					
KS	3.05	0.855	0.926	0.807	0.486	0.927	0.697	**0.898**				
KP	3.48	0.817	0.871	0.628	0.091	0.875	0.302	0.043	**0.792**			
KA	3.32	0.837	0.875	0.701	0.208	0.888	0.456	0.317	0.044	**0.837**		
KSH	3.26	0.776	0.843	0.643	0.309	0.854	0.556	0.456	0.428	0.299	**0.801**	
IC	3.41	0.981	0.981	0.797	0.246	0.982	0.496	0.42	0.167	0.334	0.313	**0.893**

Cmin/DF = 3.403; p = 0.001; TLI = 0.882; CFI = 0.912; RMSEA = 0.079.

accurate for this study, with Cronbach Alpha values greater than 0.7, CR greater than 0.7 (Nunnally & Bernstein, 1994), and AVE significantly larger than 0.5. (Fornell & Bookstein, 1982). Furthermore, Table 2 displays the correlations among internal constructs to evaluate discriminant validity and asserts that all standardized factor loadings are greater than the recommended > 0.50 threshold (Gefen et al., 2000). Finally, convergent or discriminant invalidity issues are discovered. As a result, the data is particularly adequate for further investigation.

After determining the construct's validity, model fit was evaluated using five incremental fit indices: chi-square/degree of freedom (CMIN/DF), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSA) (RMSEA). It is recommended that the following thresholds be met for a good model fit: CMIN/DF = 3, TLI = > 0.80, CFI = > 0.95, and RMSEA = 0.08. (Hair et al., 2010). Following that, the model achieved a good model fit with the following indices: CMIN/DF = 2.974, TLI = 0.949, CFI = 0.96, and RMSEA = 0.061; thus, strong support for KMO confirmatory factor analysis.

4.2. Structural Model Results

Table 3 displays the standard deviation, mean, and bivariate correlation, as well as Cronbach's and KMO values for the IC, KMO, and business performance constructs. IC has a mean value of 3.41, while BP has a mean value of 3.32. This result implied that these CEOs tend to agree with IC and BP.

The composite reliabilities (CR) ranged from 0.843 to 0.981, all of which exceeded the recommended cut-off value of 0.7. The average variance extracted (AVE) for all constructs was greater than 0.628, exceeding the 0.5 minimum threshold for convergent validity. Cronbach's alphas ranged from 0.784 to 0.914, exceeding the threshold of 0.7, indicating good internal consistency and scale stability.

Table 3 shows that discriminant validity was achieved by comparing the square root of AVE to the correlations of the constructs. Because the correlations between the latent constructs' composite and all the other constructs were less than 0.7, the diagonal insertions of the matrix (in bold), representing the square root of AVEs, were all higher than the corresponding inter-construct correlations, indicating discriminant validity and constructs were sufficiently different from one another. Furthermore, discriminant validity was established by inspecting the cross-loadings and confirming that all indicator loadings were greater than their respective cross-loadings.

The resulting measurement model fit well: CMIN/DF = 3.403, p = 0.001, TLI = 0.882, CFI = 0.912, and RMSEA = 0.079, and was thus deemed suitable for further structural equation.

The results support most of the hypotheses and are in line with previous formulation and subsequent testing of various hypotheses (Table 4). The findings support the majority of the empirical findings connected to the resource-based paradigm.

Table 4: Structural Model Results

Hypothesis	Effect	Coefficient	*P*-value	Conclusion
H1	KMO → IC	0.212	0.000	Supported
H2	IC → BP	0.161	0.000	Supported
H3	SC → IC	0.327	0.000	Supported
H4	IC mediate KMO & BP	0.034	0.000	Supported

Knowledge management emerged as the most dominant hypothesis in this investigation, which is consistent with earlier empirical findings connected to the resource-based approach (Lin, 2013).

These findings established the relationship between manufacturing organizations' innovation capability and business success, as well as the function of innovation capability in mediating the relationship between knowledge management approach and business performance. These findings are consistent with earlier research (Sahoo, 2019). The second strongest hypothesis reveals a positive relationship between knowledge management orientation and innovation aptitude, demonstrating that if manufacturing organizations have an efficient technique to manage their information, their innovation in production will improve.

4.3. Discussion and Implications

Firstly, knowledge management orientation (acquisition, storage, sharing, and preservation of information) has a substantial and direct influence on corporate performance. Managers should focus on personalizing KM skills (encouraging person-to-person knowledge exchange) to establish KM as a key organizational capability when the organization's purpose is to enable the growth of door production. Knowledge distribution activities take place not just inside organizations but also between enterprises and their business partners in the framework of this construction. Employees can use knowledge sharing to create unique solutions to challenges that vastly improve on present procedures. As a result, the growing relevance of the area of information.

Secondly, managers should be aware that technologically focused KM skills (such as knowledge storage and retrieval techniques) are prerequisites for door manufacturing firms. Managers should try to improve knowledge storage capabilities, such as by providing knowledge repositories or data warehouses (used to store and retrieve knowledge) and customer data, thereby facilitating the handling of diverse knowledge from diverse sources and enabling easy access to it in the building installation.

Thirdly, to improve innovation capability. The following is a summary of the managerial implications for door manufacturing business owners: Manufacturing firms must develop a quality-driven culture that can motivate innovation behavior, instill a concern for improvement, and improve internal coordination with employees to encourage innovation to develop and achieve IC - a problem-solving mindset that converts ideas and customer-centric concepts into a successful product/service, process, business model, or system. This study offers advice on how a small manufacturing company can use technology and its internal knowledge base to improve innovation outcomes and performance.

5. Limitations

This study has significant shortcomings that must be addressed. This study concentrated on two crucial contextual aspects impacting company success (e.g., KMO capabilities and innovation capability), which might serve as a possible restriction to this study. Future research can determine whether additional elements impact diverse organizational performance. Second, due to time restrictions, each target business is represented by a single respondent in this study. Researchers typically seek response data from informants within companies when studying organizational phenomena. Using several informants from the same company enhances data quality and finding validity. In the future, efforts should be made to poll numerous informants from each answering organization. Finally, this study concentrated solely on the link between independent and dependent variables, as well as mediation tests.

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