INFLUENCE OF KNOWLEDGE MANAGEMENT ORIENTATION ON PERFORMANCE WITH INNOVATIVENESS IN SMEs

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Abstract

The objective of this research was to examine the effect of knowledge management orientation (KMO) on performance for small and medium-sized companies (SMEs) in the Thai food sector via the mediating role of innovativeness. Two hundred and fifty-three SMEs in the Thai food sector participated in providing information for this study. Data analysis included descriptive and inferential statistics, with structural equation modelling (SEM) being used for the latter. The study discovered that KMO, across four dimensions (organizational memory, knowledge sharing, absorption, and receptivity), had a substantial direct influence on innovativeness. In terms of performance, however, the results showed that the effects of KMO on this were not significant and that this orientation must be mediated by innovativeness. All dimensions of KMO must be pursued simultaneously to encourage innovativeness and performance. Thus, entrepreneurs wanting to improve their performance should promote effective KMO involving all four of the above identified dimensions, along with the support of innovativeness.

Keywords: Knowledge management orientation, innovativeness, performance, small and medium-sized companies, SMEs

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1. INTRODUCTION

There have been numerous prior studies in the area of knowledge management in organizations (Patil & Kant, 2014). Knowledge management orientation (KMO) encompasses the organization's behavior in applying Knowledge Management, which consists of four sub-dimensions: organizational memory, knowledge sharing, knowledge absorption, and knowledge receptivity (Wang, Ahmed & Rafiq, 2008). In some industries, which have a rapid change in information, knowledge, and technology, the organizational memory dimension must be separated into organizing memory development and the memory system (Hussein et al., 2016). In previous works, it was found that most studies regarding the influences of KMO examined businesses in a holistic way, covering manufacturing, trade, and many other types of services (Wang et al., 2009; Du, 2011; Wang & Lin, 2013). However, the concept of KMO still lacks a comprehensive literature as it has not been widely investigated through empirical research (Wang & Lin, 2013). According to the extant literature, KMO can be part of internal organizational strategy to improve performance (Wang et al., 2008, 2009; Lin, 2015; Farooq & Vij, 2018). Some researchers have also claimed that it is a source of innovativeness (Kmieciak & Michna, 2018; Hussein, Rosita & Ayuni, 2019). Organizations without innovativeness may invest resources (times, cost, etc.) in researching new information, knowledge, or technology, but they are unable to integrate and use this knowledge in practice (Hult, Hurley & Knight, 2004). Consequently, it is important to identify the factors influencing an organization's innovativeness. Hence, businesses that want to improve innovativeness and performance should pay attention to KMO (Kmieciak & Michna, 2018; Wang & Lin, 2013).

Innovativeness is a precursor to innovation, being defined as the ability of an organization to innovate new things (Hult, Hurley & Knight, 2004). That is, having innovativeness is considered key to the development of effective innovation (Hurley & Hult, 1998). Also, strong innovativeness can result in improved performance (Peng, 2008; Hoq & Ha, 2009). In fact, there are many organizations which have achieved long-term success, where patent submissions have been one of the indicators of innovation (Noble, Sinha & Kumar, 2002). In 2018, the World Intellectual Property Organization (WIPO, 2019) ranked the registration patents of each country, with Thailand being ranked at 38, while the neighbouring countries of Singapore and Malaysia, were ranked at 24 and 36, respectively. To promote the development of the country's future food industry as the First S-Curve, the Thai food industry's development must focus on innovation. It is clear, that effective innovation can lead to improvements in the performance of Thai food SMEs, but this is a complex process driven by many factors (Saigosoom, 2013).

In addition, food entrepreneurs obtain expertise from a variety of sources, the most important of which are suppliers, consumers, and external training. Internal training has proved to be a source of implemented learning and knowledge transfer (Firlej & Zmija, 2017). Entrepreneurs or managers of food industry enterprises frequently wonder how to manage knowledge in order to make optimal use of their organisation's capabilities, as well as to create the right conditions for the development and implementation of plans, which will enable the identification and implementation of necessary innovation, leading to stable development in the long run (Firlej & Zmija, 2014).

The advantage in the production of Thai food industry products comes from the raw materials used in the industry, of which 80% come from domestic production. As a consequence, the Thai food industry has lower production costs than other countries which rely on raw materials from foreign imports. However, it has started to lose its competitiveness, as competitors with cheaper production costs and wages have started to compete more in the market (Office of Small and Medium Enterprise Promotion, 2013). There is a lack of technology, research and development, and innovation, due to the fact that SMEs have limited resources in both knowledge and finance. As a result, they are unable to develop sufficient knowledge, which could be one of the factors impacting negatively on long-term success. Innovativeness is the starting point which leads to innovation and the ability of an organization to innovate (Hurley & Hult, 1998); this also results in improved performance of the organization and can support the achievement of long-term success (Noble, Sinha & Kumar, 2002).

Consumers are shifting toward more sustainable manufacturing and consumption. Changing patterns are becoming more prevalent, in order to meet client demands in an environmentally sustainable manner (White, Habib & Hardisty, 2009). Developments in consumption habits and lifestyles, along with new product and business management in the food sector, have required the adoption of a new business model, one that prioritizes innovation as a means of adding value (Per-ola, Pia & Joakim, 2019). Other important challenges are the lack of food personnel development; timely transfer of modern knowledge; and the lack of in-depth knowledge. Moreover, the technology for sustainable performance in these SMEs is falling behind due to a lack of research, product development, and failing to adapt to the changing environment, thereby threatening the survival of some of these businesses. Hence, entrepreneurs must develop their potential and upgrade their performance with increased knowledge and innovativeness. The researchers, thus, investigated KMO in relation to its influence on business performance through the innovativeness of SMEs in the Thai food industry.

2. LITERATURE REVIEW

2.1 The Relationship of KMO to Innovativeness and Performance

Knowledge management can play a significant role in helping an organization to survive by improving its ability to compete in a changing business environment. Also, it is necessary to have a process of combining the capability of information technology systems in processing data with human resources management (Malhotra, 2005). This involves getting the right information to the right people at the right time, to exchange and use information by applying knowledge to enhance and improve the organization's operations (O'Dell & Grayson, 1998).

Wang, Ahmed & Rafiq (2008) defined KMO as the behaviour of an organization which demonstrates effective knowledge management by implementing it systematically, setting standards for organizational memory. It is a combination of multidisciplinary practices. In addition, KMO has been defined as an organization's relative propensity to build on its achieved wisdom, as well as the capability to share, assimilate, and be receptive to new wisdom (Wang et al., 2009). Previous studies have indicated that KMO is the second order of four latent variables, namely organizational memory, knowledge sharing, knowledge absorption, and knowledge receptivity (Wang et al., 2008; 2009; Wang & Lin, 2013; Lin, 2015; Kmieciak & Michna, 2018).

Organizational memory refers to the mechanism for collecting, storing (Gray, 2001), processing and categorizing knowledge (Hult et al., 2003) to be applied to future decisions with the use of information technology (Hansen, Nohria & Tierney, 1999). In addition to system maintenance, bringing in new information to improve the existing knowledge base is essential (Leonard, 1992; Wang, et al., 2008; 2009).

Knowledge sharing is the promotion of knowledge transfer between members of the organization at all levels. This is not only top-down and bottom-up, but also horizontally across the organization (Mom et al., 2007). Knowledge sharing is facilitated by social interaction, which allows people to interact face-to-face (Nonaka & Takeuchi, 1995), or by information technology, which facilitates knowledge exchange (Wang et al., 2008; 2009).

Knowledge absorption refers to the receipt of new knowledge from outside and its utilization within the business organization (Cohen & Levinthal, 1990). The combination of new knowledge from outside sources and existing knowledge from within the organization can lead to the creation of more sophisticated forms of knowledge (Wang et al., 2008; 2009).

Knowledge receptivity refers to the attitude people in an organization hold towards new knowledge, i.e., the degree to which they are prepared to incorporate it into their operations (Davenport, Delong & Beers, 1998). When there is good receptivity,

people evaluate their thoughts regularly, assess the benefits of ideas regardless of the identity of the person who contributed to the idea (Popper & Lipshitz, 1998) and provide opportunities for those who proposed the new knowledge to develop it further (Wang et al., 2008; 2009).

Table 1 Most recent articles with the keywords KMO

Authors	Subject	Organization type	[1]	[2]
Wang et al. (2008)	Knowledge management orientation: Construct development and empirical validation	Retailing, manufacturing industries and services		✓
Wang et al. (2009)	Knowledge Management Orientation, Market Orientation, and Firm Performance: An Integration and Empirical Examination	Service industries and manufacturing industries		✓
Du (2011)	An Empirical Study on the Relationships of Knowledge management orientation, market orientation, and firm performance	Service industries and manufacturing industries		✓
Wang & Lin (2013)	An empirical research on knowledge management orientation and organizational performance: the mediating role of organizational innovation	Manufacturing, merchandising and service	✓	✓
Lin (2015)	Linking knowledge management orientation to balanced scorecard outcomes	Manufacturing, retail/wholesale, and service		✓
Hussein et al. (2018)	Knowledge Management Orientation, Market Orientation, and SME's Performance: A Lesson from Indonesia's Creative Economy Sector	SMEs in the sector of creative economy		✓
Kmieciak & Michna (2018)	Knowledge management orientation, innovativeness, and competitive intensity: evidence from Polish SMEs	SMEs associated in the Employers' Organization of Polish Copper (EOPC)	✓	
Hussein et al. (2019)	Knowledge Management Orientation Behaviour and Innovation: A Lesson From Indonesia Creative Economy Sector	SMEs in the sector of creative economy	✓	

[1] Innovativeness; [2] Performance

As shown in Table 1, previous studies on KMO frequently begin by considering the various presumed underpinning benefits of this, such as improved innovativeness or business performance.

2.2 Innovativeness

Innovativeness is a prerequisite for a business's capacity to create new goods and/or services (Hult et al., 2004). It is described by Nybakk et al. (2009) as the proclivity to develop and/or embrace new products, processes, and business systems. Innovativeness differs from innovation in that it refers to having the appropriate personal or organizational characteristics to carry out ideas, whilst innovation is the result of effective innovativeness. Wang and Ahmed (2004) described an organization's innovativeness as its capacity to introduce new products or penetrate new markets by focusing on strategies that promote behaviour and innovative processes. The studies of the composition of innovativeness are relatively limited and most have not involved systematic measurement procedures, tending, instead, to have a relatively narrow perspective. For instance, Rainey's (1999) study of only behavioral measurement and strategic aspects of innovativeness failed to provide a comprehensive understanding of the phenomenon. In contrast, Wang and Ahmed (2004) established five aspects of innovativeness, which are discussed below: product, market, process, behavior, and strategy.

The product of innovativeness, that of new and unique offerings, which are useful, valuable, and different from previous products introduced to the market (Henard & Szymanski, 2001), leads to expansion into new markets or new areas (Danneels & Kleinschmidt, 2001). The novelty of the product in the market, the use of technology in the product launch, and/or new marketing programs for promoting existing products, are all considered as aspects of market innovativeness (Wang & Ahmed, 2004). The process of innovativeness refers to the introduction of novel production methods and/or management practices, which include the use of technology to simplify operations (Avlonitis, Kouremenos & Tzokas, 1994). In addition, there is resource utilization management and the ability of the organization to integrate innovativeness to meet its needs creatively (Wang & Ahmed, 2004). Behavior innovativeness refers to the intention of administrators to make a change and their determination or willingness to promote concepts or new work options (Rainey, 1999), both for individuals and teams, thereby creating a culture of openness to new ideas and innovation (Avlonitis et al., 1994; Lovelace, Shapiro & Weingart, 2001). Strategic innovativeness pertains to deploying different methods of operation that can create value for the organization, as well as managing the organization in accordance with commitment to organizational objectives and the available resources (Wang & Ahmed,

2004). Furthermore, executives should accept the risk of searching for growth opportunities for the organization (Miller & Friesen, 1983) and recognize the need for change as well as being able to respond to any shifts in market conditions (Markides, 1998).

Wang et al. (2008) developed a structure for KMO, which supports firm performance. Subsequently, Wang et al. (2009) found that each dimension of KMO is important, but to varying degrees. However, all four dimensions must perform together to create KMO of a higher quality, which may eventually have a beneficial effect on the company's performance, and this must be accompanied by market orientation. Other researchers' findings support the findings of Wang et al. (2009) that the relationship of KMO and performance requires market orientation as a mediating effect (Du, 2011; Hussein et al., 2018). In summary, focusing on KMO could promote company performance. Wang & Lin (2013) stated that there are positive links between KMO, organizational innovation, and organizational performance, which not only have direct effects (KMO – innovation; KMO –performance; innovation - performance) but are also mediated by organizational innovation. Kmieciak & Michna (2018) found that even in a situation of competitive intensity, the four dimensions of KMO enhancement can increase a firm's innovativeness. Moreover, their study focused on the dimensions of KMO, finding that only the organizational memory dimension influenced innovativeness. Other dimensions did not play a role in directly improving the organization's innovativeness but rather must be combined in the form of KMO. In addition, previous studies (in table 1) have found that the dimensions of KMO can play a role in improving performance or innovativeness at differential levels. Therefore, the following hypotheses are proposed:

H1: KMO is positively related to innovativeness.

H2: KMO is positively related to performance.

2.3 The Relationship Between Innovativeness and Performance

Performance is an indicator of success in financial terms as well as indicating a good relationship between an organization and its customers, but these are not the most important factors for achieving business goals. What matters most is building future value in collaboration with customers, colleagues, workers, business processes, technologies, and innovations (Kaplan & Norton, 1992). Previous research has demonstrated that innovation directly helps enhance performance. Hareebin (2020) indicated that innovative capability has a positive effect on firm performance, to achieve sustainable tourism, entrepreneurs should focus on strategies for promoting innovative policies. In Thai food SMEs, innovation could lead to improved business performance, but this is a complicated process influenced by a variety of factors, and the degree of

innovation in the majority of such firms remains low (Saigosoom, 2013). As such it is hypothesized that:

H3: Innovativeness is positively related to performance.

Overall performance measurement can also be used to determine an organization's level of innovativeness by examining factors such as patents, the creation of new products or services, the generation of different manufacturing processes and technologies, and the development of new manufacturing processes and technologies (Hagedoorn & Cloodt, 2003). Some studies have suggested that SME entrepreneurs should focus on time and financial factors in their performance measurement (Olsen, 2007; Ruangchoengchum, 2017). However, this study does not focus on objective indicators, such as sales or profits, due to the lack of disclosure of these figures, by organizations, owing to the potential risks entailed. Rather, the interest lies in subjective indicators, by measuring overall performance from the perspective of the balance scorecard, which includes learning and growth, internal processes, customer satisfaction, and financial performance, according to Kaplan & Norton (1996). In this research, business performance objectives were also measured utilizing the indicators of Singer & Edmondson (2008) and Lin (2015), as explained below.

2.4 Theoretical Framework and Hypotheses

In the current study, a research model for investigating the relationships between KMO, innovativeness, and performance, in the food industry was developed as shown in Figure 1.

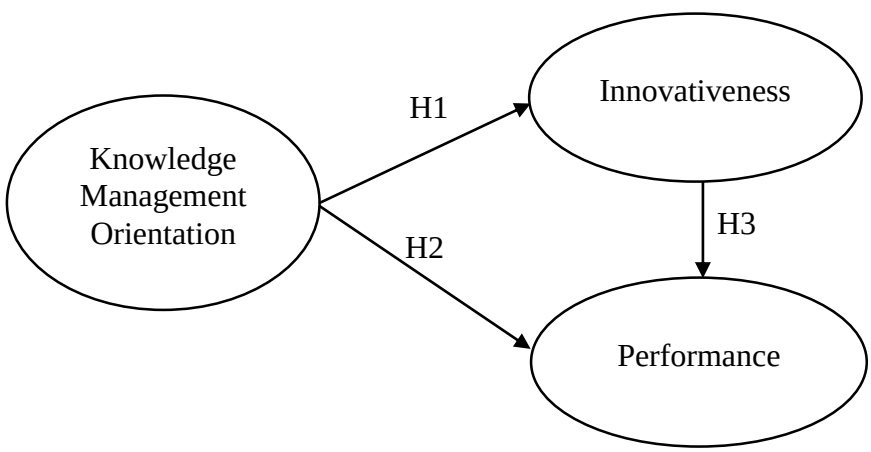

Figure 1 Research Model

3. METHODOLOGY

3.1 Sample and Data Collection

The proposed model was validated through the use of survey data and quantitative approaches from SMEs operating in the food industry in Thailand who were invited to participate in a survey. According to Thailand's Office of Small and Medium sized Enterprise Promotion, SMEs are defined as companies with no more than 200 employees or 200 million baht in assets. To meet the objectives of the research. The stipulations for participants were: 1) the owner or supervisor should answer the questionnaire; 2) the business operations should relate to the fields of production, trade, or services in the food industry; and 3) the employment and assets are in line with the characteristics of SMEs as listed above. Data collection was carried out between January and March 2020. The questionnaires were distributed to Thai food SMEs via two different sources. Questionnaires were first delivered via email to SMEs registered with the Ministry of Commerce's Department of Business Development; a total of 1,200 accounts were emailed, with 162 surveys being received. The second source was SMEs who attended the Thai Franchise & SME Expo 2020 (14th edition), with 102 surveys being returned through this channel.

A total of 264 answered questionnaires were received from respondents, 253 of which were complete and valid for data analysis (159 through email and 94 from the expo). Hair et al. (2010) proposed a sample size of 10-20 times the number of observed variables for statistical analysis using structural equation modelling (SEM). There were 25 observed variables in this study, including 15 items for KMO, 5 for innovativeness, and 5 for performance. As a result, the sample size suggested for this study was 250-500 (25x10; 25x20); thus, the sample size recommendation was reached. Regarding the job titles of the respondents, 35.57 percent of the

Table 2 Sample characteristics

Characteristics	Frequency	%	Characteristics	Frequency	%
Age of firm			Amount of assets		
< 1 y	15	5.93	< 30m Baht	106	41.90
1 - 3 y	5	1.98	31–60m Baht	62	24.51
4 - 6 y	150	59.29	61-100m Baht	58	22.92
> 6 y	83	32.80	101- 200m Baht	27	10.67
Firm sector			Number of employees		
Manufacturing	233	92.09	< 15	102	40.32
Retail	7	2.77	16 – 25	34	13.44
Wholesale	10	3.96	26 - 30	47	18.58
Service	3	1.18	31 - 50	43	16.99
			> 50	27	10.67

respondents were executives, 34.78 percent were business owners, 29.65 percent were managers, and 7.51 percent were employees. Regarding the working period of the respondents, 37.94% had been in their position for more than 6 years. The sample characteristics, including firm age, sector, amount of assets, and number of employees, are presented in Table 2.

3.2 Measures of the Survey Data

The first section of the questionnaire asked about the characteristics of the firm, as shown in the above figure, whilst the second section focused on the variables to be tested, namely, knowledge management orientation, innovativeness, and performance. The questionnaire's items shown in Table 6 were measured on a five-point Likert scale, with each item being ranked from 1 = strongly disagree, to 5 = strongly agree. The questions were reviewed by academic experts and amended in line with their suggestions, so as to improve the reliability of the content. A pilot using a sample of 30 respondents was conducted to determine the survey's validity and to finalize the questionnaire for the main study. The issues relating to KMO were adapted from Wang et al. (2008) and Wang et al. (2009). Innovativeness was adapted from Schumpeter (1934), Avlonitis et al. (1994), Miller & Friesen (1983), and Ward (2004). The performance metrics were adapted from Kaplan & Norton (1996), Singer & Edmondson (2008), and Lin (2015). Statistical and data analysis were performed using SPSS version 23.0, while AMOS version 22.0 was utilized for the structural equation modelling (SEM).

The identified factors were labelled as follows: knowledge management orientation (KMO) – 15 items, organizational memory (OM) – 4 items, knowledge sharing (KS) – 4 items, knowledge absorption (KA) – 3 items, and knowledge receptivity (KR) – 4 items. For both innovativeness (INN) and performance (PF) there were a total of 5 items.

4. RESULTS

An independent t-test was performed to compare the means for the items of the three variables for the email and the SME expo collected data. The results of this testing indicated no statistically significant differences between the means of the two groups ($p > 0.05$).

Confirmatory factor analysis (CFA) was performed on the sample to check the validity and reliability of the measurement model. Given the results of the CFA analysis, two items were removed, namely, INN2 (market innovativeness) and PF5 (achieving their own business goals), as the factor loadings were less than the recommended value of 0.50 (Hair et al., 2010). The final version of the questionnaire therefore contained four observed items for both innovativeness and performance.

The descriptive statistics

regarding SMEs in the food industry are provided in Table 3. The findings reveal that KR had the highest level (3.890) within KMO, followed by KA (3.889), KS (3.879), and OM (3.708) respectively, with all found to be at a medium level. The overall average score of INN (3.906) was also positioned at a medium level. In addition, performance (3.896) was reported to be at this level as well. While the standard deviation values for each item range from 0.548 to 0.793, they are not too different.

Table 4 shows the average variance extracted, composite reliability, alpha coefficient, and the range of factor loadings of all the variables. All composite reliability measures of the constructs exceed the recommended level at 0.70 (Fornell & Lacker, 1981). Hence, the results reveal that the measurement model is consistent with empirical data and is reliable. Regarding discriminant validity, however, one innovativeness item had a value of Average Variance Extracted (AVE) lower than 0.5

According to Fornell and Larcker (1981) this is still acceptable, whereby, if AVE is less than 0.5, but the composite reliability (CR) is higher than 0.6, then the convergent validity of the construct is still adequate. The model was evaluated through adequacy indices, including relative chi-square (χ^2/df) = 1.475 (< 3.00), goodness of fit index (GFI) = 0.900 ($\geq$ 0.90), comparative fit index (CFI) 0.967 (> 0.90), incremental fit index (IFI) = 0.967 (> 0.90), Tucker – Lewis index (TLI) = 0.962 (> 0.90) and the root mean square error approximation (RMSEA) = 0.043 (<0.08). The recommended fit statistics are provided in parenthesis; it can be seen that all requirements have been met (Hair et al., 2010; Byrne, 2010; Kline, 2011).

In this paper, a structural equation modelling (SEM) methodology was employed to test the hypotheses. SEM is used to investigate the causal links between variables, including the role of mediators. The proposed model adopted to test hypotheses H1, H2 and H3 consisted of three latent variables as shown in Figure 2. The first stage of analysis yielded the results shown

Table 3 Descriptive statistics

Item	Mean	Standard Deviation
KMO	3.841	0.634
OM	3.708	0.793
KS	3.879	0.746
KA	3.889	0.752
KR	3.890	0.655
INN	3.906	0.548
PF	3.896	0.607

in Table 5; it was found from the hypothesis test for H1 that KMO is positively associated with innovativeness (path coefficient = 0.88, $p < 0.001$). Consequently, organizations that focus more on KMO will also have greater innovativeness.

Table 4 CFA results

Item	Average Variance Extracted	Composite Reliability	Cronbach's alpha	Range of Factor Loading
KMO	0.56	0.95	0.93	0.65-0.81
OM	0.58	0.85	0.86	0.73-0.78
KS	0.57	0.84	0.84	0.69-0.80
KA	0.61	0.82	0.82	0.72-0.81
KR	0.50	0.80	0.79	0.65-0.76
INN	0.41	0.74	0.86	0.73-0.84
PF	0.61	0.86	0.75	0.62-0.66

Table 5 Structural model results

Path	Standardization coefficient	Support
KMO → Innovativeness (H1)	0.880***	Yes
KMO → Performance (H2)	0.137	No
Innovativeness → Performance (H3)	0.748***	Yes

***Significant at $p < 0.001$

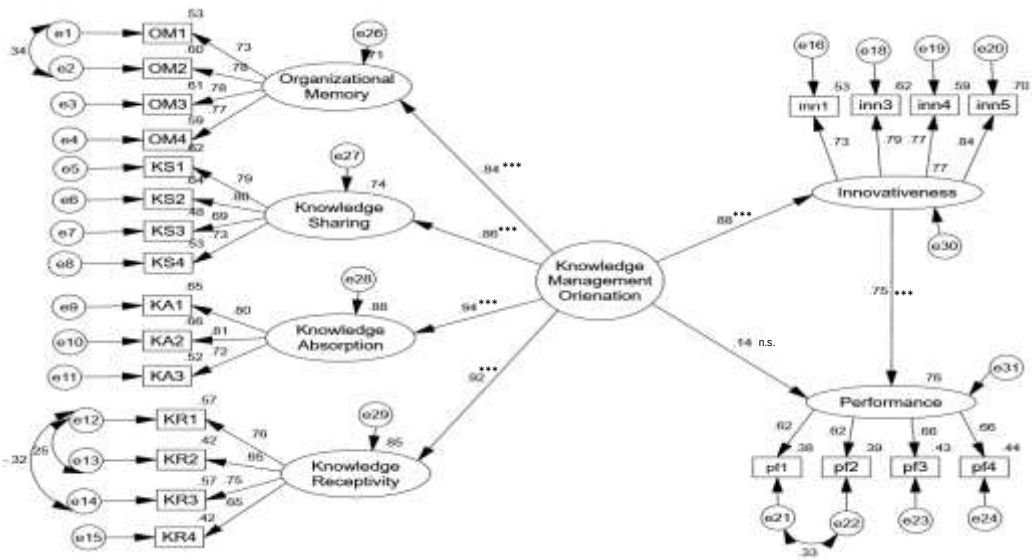

Figure 2: Results of the Structural Equation Model

In terms of H2, based on the results shown in Table 5 (KMO → performance; path coefficient = 0.14, non-significant), this hypothesis was not supported. Orientation toward knowledge management has no apparent effect on performance. Whilst the test for H3 is supported, indicating that innovativeness is positively associated with performance (path coefficient = 0.75, $p < 0.001$), as shown in Table 5. Therefore, the structural model result in Table 5 shows a significant indirect effect of KMO on performance through innovativeness (KMO → innovativeness → performance; $p < 0.001$). When KMO is combined with innovativeness, it produces a more significant effect on performance than KMO alone. Thus, it can be concluded that innovativeness appears to act as a moderator in the link between KMO and performance.

5. DISCUSSION

The objective of this study was to investigate whether there were any relationships between KMO, innovativeness, and performance, as well as the role of innovativeness as a mediator in the relationship between KMO and performance in the context of SMEs in the Thai food sector. The results correspond to the hypothesis regarding the link between KMO and innovativeness. This finding is consistent with prior research done in other countries among larger enterprises and SMEs (Wang & Lin, 2013; Kmieciak & Michna, 2018; Hussein, Rosita & Ayuni, 2018). The results confirm those of a previous study, where a direct relationship between KMO and innovativeness was found (Wang & Lin, 2013). It can be concluded that the positive attitude of an organization's employees regarding new knowledge, and the opportunities they receive to participate in creating new ideas, appear to stimulate innovativeness. Hence, SMEs should focus their attention on KMO.

Regarding the effect of KMO on performance, no direct relationship was found. This result aligns with the findings of Wang et al.'s (2008) study, which stated that the connection between KMO and performance is complicated, and that it is expected that many organizational variables would serve as mediators in the interaction. This finding is in accordance with a previous study that elicited that KMO does not have a direct effect on performance, but rather, often indirectly affects performance through various mediator variables, e.g. market orientation, entrepreneur orientation, and product innovation (Wang, 2008; Du, 2011; Wang & Lin, 2013; Farooq & Vij, 2018; Hussein, Rosita & Ayuni, 2018; Kmieciak & Michna, 2018).

Our findings confirm innovativeness as an important factor in performance, the two being positively related and generally important to the success of an organization (Nybakk, 2009). Previous research has suggested that managers should improve the innovativeness of their businesses in

their efforts to engender superior performance (Hult et al., 2004). Samsir & Andreas (2018) also suggest that SMEs should make improvements to their innovativeness by not only focusing on the search for new ideas from business actors, but also, providing opportunities for their employees to develop their knowledge building activities.

The SEM results show the mediation role of innovativeness in the relationship between KMO and performance. That is, KMO has an indirect effect on performance through innovativeness, which plays a mediator role. Previously, researchers have claimed that there is a "missing link" between knowledge management and performance; the results of this research suggest that this is innovativeness, i.e. innovativeness is the mediator between the two, which aligns with previous research (Wang et al., 2009; Hussein, Rosita & Ayuni, 2018).

6. CONCLUSIONS AND RECOMMENDATIONS

To improve the performance of SMEs in the food industry, entrepreneurs or executives should engage in KMO promotion in pursuit of innovativeness. Enterprises should focus on the merits of new ideas coming from employees by encouraging them to participate in the development or implementation of these. SMEs in the food industry should facilitate employees obtaining information or new knowledge from outside the organization through the use of IT, consequently providing opportunities for its dissemination within the firm. Through this process, Thai SMEs in the food industry can enhance their performance. Moreover, adoption of technology to support knowledge management, including maintenance of information systems, can also help to improve performance. Knowledge sharing by employees, as one dimension of KMO, can also lead to improved innovativeness, thus indirectly impacting performance.

In terms of improving the quality of innovativeness, there should be a focus on strategies that engender product development (strategic innovativeness), thereby enhancing innovativeness (Hareebin, 2020; Farooq & Vij, 2018). At the management level, there should be recognition of the rapidly changing nature of the business environment (behaviour innovativeness). In particular, there should be a keen awareness of new products and processes being introduced to the market (products and processes innovativeness). SMEs in the Thai food industry should be willing to take risks in seeking opportunities for growth by expanding into new markets or choosing to respond to niche markets which large enterprises often have a higher capacity for. In summary, the findings of this research have revealed that innovativeness can be enhanced, by focusing on the dimensions of KMO, in turn, contributing to performance improvement.

The first limitation of this research model is in using only innovativeness as a mediator variable, while other researchers argue that market orientation, entrepreneur orientation, and product innovation can also be mediating variables of the relationship between KMO and performance. Second, the data used for hypothesis testing was undertaken in Thai SMEs in the food industry. Hence, the results cannot be generalized to large enterprises or other industries. Further studies should investigate the influence of each dimension of KMO in terms of the extent to which each of these, impact the product, market, or processes, which has not been addressed in this work. It is also suggested that the influence of KMO on performance should be investigated, using the Balanced Scorecard to ascertain any relationship between KMO and performance through other mediator variables rather than innovativeness. Finally, it would be beneficial to extend the research into the mediating role of potential factors between KMO and performance for SMEs in industries other than the Thai food sector.

REFERENCES

Avlonitis G. J., Kouremenos, A., & Tzokas, N. (1994). Assessing the innovativeness of organizations and its antecedents: Project innovstrat. *European Journal of Marketing. 28 (1),* 5-28.

Byrne, B. M. (2010). *Structural equation modeling with AMOs: Basic concepts, applications, and programming.* 2nd ed. New York: Routlege Taylor and Francis Group.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly. 35 (1),* 128-152.

Danneels, E., & Kleinschmidt, E. J. (2001). Product Innovativeness From the Firm's Perspective: Its Dimensions and Their Relation with Product Selection and Performance. *The Journal of Product Innovation Management. 18*, 357-373.

Davenport, T. H., DeLong, D. W., & Beers, M. C. (1998). Successful knowledge management projects. *Sloan Management Review. 39 (2),* 43-57.

Du, P. (2011). An empirical study on the relationships of knowledge management orientation, market orientation, and firm performance., *Proceedings of the 2011 International Conference on Management and Service Science,* Wuhan, China. Retrieve from https://ieeexplore.ieee.org /document/5998928

Farooq, R., & Vij, S. (2018). Linking Entrepreneurial Orientation and Business Performance: Mediating Role of Knowledge Management Orientation. *Pacific Business Review International. 10 (8),* 174–183.

Firlej, K. & Zmija, D. (2014). *Knowledge Transfer and diffusion of innovativeness a source of competitiveness of food industry enterprises in Poland.* Cracow: Cracow University of Economics.

Firlej, K. & Zmija, D. (2017). The Specificity of Knowledge Management in The Food Industry in Poland. *Ekonomie a Management. 20(1),* 83-97.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research. 18,* 39-50.

Gray, P. H. (2001). The impact of knowledge repositories on power and control in the workplace. *Information Technology and People. 14 (4),* 369–384.

Hagedoorn, J., & Cloodt, M. (2003). Measuring innovative performance: Is there an advantage in using multiple indicators? *Research Policy. 32,* 1365–1379.

Hair J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis.* (7th ed.). United Kingdom: Pearson Education.

Hansen, MT., Nohria N., & Tierney, T. (1999). What's your strategy for managing knowledge? *Harvard Business Review. 77 (2),* 106–116.

Hareebin, Y. (2020). Operational Guidelines for Human Capital and Innovative Tourism Entrepreneurs in Sustainable Tourism Perspectives: An Analysis of Tour Operations in the Andaman Provinces of Thailand. *ABAC Journal. 40(3),* 117-139.

Henard, D. H., & Szymanski, D. M. (2001). Why some new products are more successful than others. *Journal of Marketing Research. 38 (3),* 362– 375.

Hoq, M. Z. & Ha, N. C. (2009). Innovativeness: Its Antecedents and Impact on SME Business Performance. *International Journal of Business and Management. 4 (11),* 100-110.

Hult, G.T.M. (2003). An integration of thoughts on knowledge management. *Decision Sciences. 34 (2),* 189-196.

Hult, G. T. M., Hurley, R. F., & Knight, G. A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management. 33,* 429-438.

Hurley, R. F., & Hult, G. T. M. (1998). Innovation, market orientation, and organizational learning: An integration and empirical examination. *Journal of Marketing. 62,* 42-54.

Hussein, A. S., Rahayu, M., Prabandari, S. P., & Rosita, N. H. 2016. Revisiting the Dimensions of Knowledge Management Orientation Behavior in Indonesia Creative Industry. *International Research Journal of Business Studies. 9 (2),* 63-73.

Hussein, A. S., Rahayu M., Rosita, N. H., & Ayuni, F. (2018).

Knowledge management orientation, market orientation, and SME's performance: A lesson from Indonesia's creative economy sector. *Interdisciplinary Journal of Information, Knowledge, and Management. 13:* 183-199.

Hussein, A. S., Rosita, N. H., & Ayuni, F. (2019). Knowledge Management Orientation Behaviour and Innovation: A Lesson from Indonesia Creative Economy Sector. *International Journal of Sociotechnology and Knowledge Development. 11 (1),* 17-28.

Kaplan, R. S., & Norton, D. S. (1992). The Balanced Scorecard-Measures that Drive Performance. *Harvard Business Review. 70 (1),* 71-79.

Kaplan, R. S. & Norton, D. S. (1996). *The Balanced Scorecard: Translating Strategy into Action.* Boston: Harvard Business School Press.

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling.* New York: Guilford Press.

Kmieciak, R. & Michna A. (2018). Knowledge management orientation, innovativeness, and competitive intensity: evidence from Polish SMEs. *Knowledge Management Research and Practice. 16 (4),* 559-572.

Leonard, B. D. (1992). Core capabilities and core rigidities: a paradox in managing new product development. *Strategic Management Journal 13 (Summer Special Issue),* 111–125.

Lin, H. F. (2015). Linking Knowledge Management Orientation to Balanced Scorecard Outcomes. *Journal of Knowledge Management. 19 (6),* 1-53.

Lovelace, K., Shapiro, D. L., & Weingart, L. R. (2001). Maximizing Cross-functional New Product Teams' Innovativeness and Constraint Adherence: A Conflict Communications Perspective. *Academy of Management Journal. 44 (4),* 779-793.

Malhotra, Y. (2005). Integrating knowledge management technologies in organizational business processes: getting real time enterprises to deliver real business performance. *Journal of Knowledge Management. 9 (1),* 7-28.

Markides, C. (1998). Strategic Innovation in Established Companies. *Sloan Management Review. Spring,* 31-42.

Miller, D. & Friesen, P. H. (1983). Strategy-making and Environment: the Third Link. *Strategic Management Journal. 4 (3),* 221-235.

Mom, T. J. M, Van Den Bosch, FAJ. & Volberda, H. W. (2007). Investigating managers' exploration and exploitation activities: the influence of top-down, bottom-up, and horizontal knowledge flows. *Journal of Management Studies. 44,* 910–931.

Nuryanti Samsir & Prima Andreas. (2018). The Effect of Knowledge Management Orientation, Innovation and Learning Organization on Business Performance and Competitive Advantage on Small and Medium Enterprises Riau Food Products in Pekanbaru City. *International Journal of Scientific & Technology Research. 7 (4),* 260–267.

Noble, C. H., Sinha, R. K., & Kumar, A. (2002). Market orientation and alternative strategic orientation: a longitudinal assessment of performance implications. *Journal of marketing. 66,* 25-39.

Nonaka, I. & Takeuchi, H. (1995). *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation.* New York: Oxford University Press.

Nybakk, E., Crespell, P., Hanson, E., & Lunnan, A. (2009). Antecedents to forest owner innovativeness: An investigation of the Non-timber forest products and services sector. *Forest Ecology and Management. 257*, 608-618.

O'Dell, C. & Grayson, JR, C. J. (1998). *If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice*. New York: The Free Press.

Office of Small and Medium Enterprise Promotion. (2013). *Strategies and action plans for promoting small and medium enterprises by sector.* Retrieve from. https://www.sme.go.th/upload/mod_download/report06-20171031135948.pdf.

Olsen, E. (2007). *Strategic sourcing and lean manufacturing with value stream road mapping.* Retrieved from https://www.ventureoutsource. com/contract- manufacturing/ benchmarksbestpractices/lean-outsourcing/lean-manufacturing-and- outsourcing

Patil, S. K. & Kant, R. (2014). Methodological literature review of knowledge management research. *Tekhne-Review of Applied Management Studies, 12 (1-2),* 3-14.

Peng, C. H. (2008). The Relationships between the Antecedents of Innovativeness and Business Performance. *Proceedings of the 2008 International Symposium on Electronic Commerce and Security,* Guangzhou City, China. Retrieve from https://ieeexplore.ieee.org/document/4606179

Per-ola, U., Pia, U. & Joakim, T. (2019). An overview of sustainable business models for innovation in Swedish agri-food production. *Journal of Integrative Environmental Sciences. 16(1),* 1-22.

Popper, M., & Lipshitz, R. (1998). Organizational learning mechanisms: A structural and cultural approach to organizational learning. *Journal of Applied Behavioral Science. 34(2),* 161-179.

Rainey, H. G. (1999). Using Comparison of Public and Private Organizations to Assess Innovative Attitudes among Members of Organizations. *Public Productivity and Management Review. 23 (2),* 130-149.

Ruangchoengchum, P. (2017). Performance Measurement That Affects SMEs Business Profits: Case study of SMEs in Khon Kaen Province. *ABAC Journal. 37(1),* 26-42.

Saigosoom, Natawat. (2013). *Barriers and opportunities for small and medium-sized Thai food firms in the context of innovation management: The case of processed marine and performance fruit and vegetable sectors* (Doctoral thesis, The University of Manchester, United Kingdom). Retrieve from https://www.research.manchester.ac.uk/portal/files/54529417/FULL_TEXT.PDF

Schumpeter, J. A. (1934). *The Theory of Economic Development.* Cambridge, Massachusetts: Harvard University Press.

Singer, S. J., & Edmondson, A. C. (2008). *When learning and performance are at odds: Confronting the tension. In Kumar P. and Rampsey P. (eds.). Learning and Performance Matter.* Singapore: World Scientific

Wang, C. L. & Ahmed, P. K. (2004). The development and validation of the organisational innovativeness construct using confirmatory factor analysis. *European Journal of Innovation Management. 7(4),* 303-313.

Wang, C. L., Ahmed, P. K., & Rafiq, M. (2008). Knowledge management orientation: Construct development and empirical validation. *European Journal of Information Systems, 17(3),* 219-235.

Wang, C. L., Hult, G. T. M., Ketchen, D. J., & Ahmed, P. K. (2009). Knowledge management orientation market orientation and firm performance: An integration and empirical examination. *Journal of Strategic Marketing. 17 (2),* 147-170.

Wang, Y., & Lin, J. (2013). An empirical research on knowledge management orientation and organizational performance: The mediating role of organizational innovation. *African Journal of Business Management. 7(8),* 604–612.

Ward, T. B. (2004). Cognition, creativity, and entrepreneurship. *Journal of Business Venturing. 19,* 173–188.

White, K., Habib, R., & Hardisty, D. J. (2009). How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. *Journal of Marketing. 83(3),* 22-49.

World Intellectual Property Organization. (2019). *World Intellectual Property Indicators 2019.* Retrieve from https://www.wipo.int/edocs/pubdocs/en/wipo_pub_941_2019.pdf

APPENDIX

Table 6 The questionnaire items for knowledge management orientation, innovativeness, and performance.

Variable	Definition
OM1	Does your company have systems to capture and store ideas and knowledge?
OM2	Does your company have systems to codify and categorize knowledge in a format that is easier to save for future use?
OM3	Does your company have IT facilitates to support in searching, categorization, storage, and retrieval of knowledge?
OM4	Does your company constantly maintain information systems and upgrade knowledge stored in systems?
KS1	Does your company have systems, ventures, or places for employees to share knowledge and learn from each other in the company?
KS2	Your colleagues often share information and knowledge with superiors.
KS3	Your colleagues often share information and knowledge with subordinates.
KS4	Your colleagues share ideas with other people, even if they work in different departments.
KA1	Does your company use IT facilitates to access a wide range of external information and knowledge?
KA2	Your company often comes up with new ideas from the gathering of external information and existing knowledge.
KA3	Does your company often bring new knowledge from external sources to improve work processes within the organization?
KR1	Your colleagues have courage to speak out about their ideas and have a good attitude regarding ideas.
KR2	Your company assesses the ideas of employees, no matter who came up with the ideas.
KR3	Your supervisors evaluate new ideas rapidly on a regular basis.
KR4	People who contribute new ideas are invited to participate in further development and implementation of the new idea.
INN1	1. Your products are often perceived as novel by customers. 2. Your recent new products are very different from existing products. 3. During the past five years, your company has introduced more innovative products.
INN2	1. In new product introductions, your company is often at the cutting edge of technology.

Table 6 The questionnaire items for knowledge management orientation, innovativeness, and performance. (Continued)

Variable	Definition
	2. New products in your company often bring your company up against new competitors.
	3. Your products' most recent marketing program is revolutionary in the market.
INN3	1. Your company is constantly improving business processes.
	2. During the past five years, your company has developed many new development approaches.
	3. Your colleagues can use the available resources and capabilities to meet the demands of the company.
INN4	1. You get a lot of support from managers if you want to try new ways of doing things.
	2. Your superiors encourage employees to think and behave in original and novel ways.
INN5	1. Your company's R&D is adequate to handle the development needs of new products.
	2. Your supervisors constantly seek unusual, novel solutions to problems via the use of idea men.
PF1	Your subordinates have improved their skills. For example, they are able to work faster and with more variety.
PF2	Your company can streamline corporate internal processes.
PF3	Your customers can realize an increase in product quality.
PF4	Your company has reduced/improved costs in the past.
PF5	You are satisfied with the performance of the company over the past year in which the company goals have been accomplished.