

ROLE OF INNOVATION MANAGEMENT RELATIONSHIP BETWEEN COMPETITIVE ADVANTAGE ON OPERATION PERFORMANCE OF SMALL AND MEDIUM ENTERPRISE IN THAILAND

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Abstract

The objective of this study is to examine the role of innovation management to promote operational performance among Small and Medium-sized enterprises (SMEs) in Thailand. Furthermore, the mediating role of competitive advantage is also examined between innovation management and operational performance. Area cluster sampling is used for data collection by using a survey questionnaire. 280 responses were used in data analysis through Partial Least Square (PLS). Results of the study highlighted that innovation management has positive effect on operational performance of SMEs. Furthermore, innovation management has positive effect on competitive advantage which further leads to the operational performance. Additionally, it is observed that competitive advantage transfers the positive effect of innovation management on operational performance. Results of the study are valuable for practitioners to enhance SMEs operational performance through innovative and competitive advantage.

Keywords: Innovation management, competitive advantage, operational performance, SMEs.

1. INTRODUCTION

SMEs are the backbone of any business industry because these firms has significant importance to promote any business industry (Jeong & Chung, 2022). There are several types of SMEs working among various nations; however, there are two important types of SMEs such as service SMEs and manufacturing SMS. The importance of these SMEs can be observed with the help of observing the contribution of these firms to any business industry. In both manufacturing and service industries the role of SMEs cannot be neglected. The SMEs has contribution at local level and it also has major contribution at national level. At local level these firms are generating several business opportunities. Generation of business opportunities provides various income generating activities for the people living in a specific society. Furthermore, it is also generating employment opportunities for the people including the job opportunities as well as labor opportunities for the people. Therefore, at local level SMEs have a central importance to the people welfare. Additionally, along with the local level it also has a significant importance at national level. At national level, these firms contributing to the economic development. With the help of increasing employment opportunities SMEs also has contribution to promote gross domestic product of nation which has contribution to the economic development.

Similar with the other countries SMEs working in Thailand also has major contribution (Boonmalert, Ayasanond, Phoothong, & Chaitorn, 2021; Li, 2021) at local as well as national level. Because SMEs working in Thailand has contribution to the economic development and it also has contribution at local level. The manufacturing SMEs has major importance in business industry of Thailand as it is highlighted in Figure 1. Therefore, these firms are contributing to the economy of Thailand. Therefore, it has major importance for Thailand. However, it is needed to promote operational performance. Among the manufacturing SMEs, operational performance has important role because the product development is based on various operations. The development of a product is based on several processes which require different operations and the accuracy of operations has central importance in the successful development of products. To maintain a quality at certain level and low cost with the production of products on timely basis always require better operational performance. However, SMEs working in Thailand are facing the issues of operational performance. Therefore, it is needed to promote various strategies to enhance operational performance which has long term effects on the company performance.

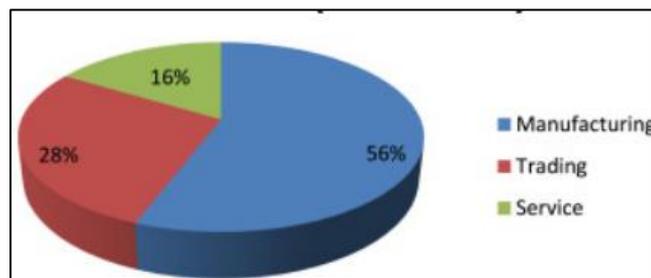


Figure 1: Contribution of Manufacturing, Service and Trading SMEs in Thailand

The innovation activities can promote operational performance among these firms. Innovation always plays central importance among all the operations of companies (Boonmalert et al., 2021; Thatrak, 2021). Manufacturing processes of various products involve various activities which require innovation. As in such innovative environment the innovation management has key importance. The management of various innovative ideas and implementation of these ideas in process of manufacturing of products is important for companies to promote operational performance. Therefore, to enhance operational performance, it is needed to enhance innovation management among SMEs. Additionally, the innovation management is not only element which can promote operational performance. According to the study, competitive advantage is also another important factor which has the ability to enhance operational performance. Among manufacturing companies, competitive advantage related to the process of manufacturing products is important. The innovation in process of manufacturing products can lead to the competitive advantage which has major effect on operational performance. Therefore, the factors, innovation management and competitive advantage have the potential to promote operational performance among SMEs.

Numerous studies in the literature identified the role of innovation management among SMEs (Keizer, Dijkstra, & Halman, 2002; Tian, Dogbe, Pomegbe, Sarsah, & Otoo, 2020), however,

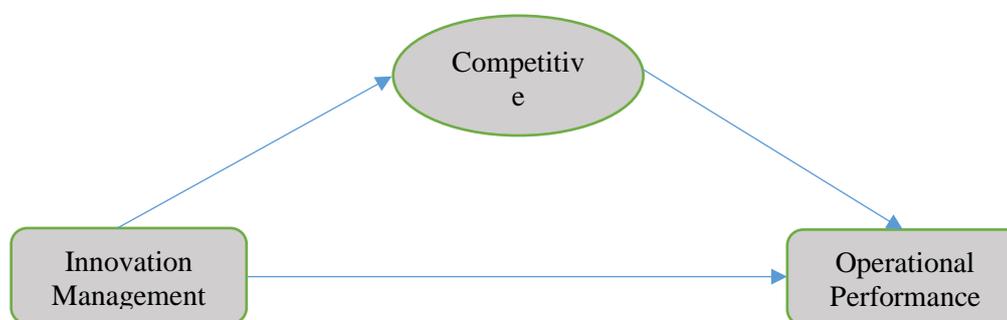
it is not addressed among SMEs of Thailand in relation to the operational performance. Additionally, innovation along with the performance of SMEs is discussed, however, specifically it is not discussed in relation to the competitive advantage and operational performance. Thus, this study examined the role of innovation management and competitive advantage in operational performance of SMEs working in Thailand.

2. LITERATURE REVIEW

2.1 Framework Development

The framework of the current study is shown in Figure 2 in which the relationship between innovation management, competitive advantage and operational performance is highlighted. This relationship is identified with the help of review of previous studies in the literature in relation to the innovation management, operational performance and competitive advantage. The review of literature highlighted that although, there are several studies on SMEs of Thailand, and however, the relationship between innovation management, competitive advantage and operational performance is very rare in the literature. Furthermore, it is also observed in the literature that competitive advantage is not taken as a mediating variable between innovation management and operational performance. Therefore, while developing the relationship between innovation management and operational performance, the current study introduced competitive advantage as mediating variable.

Figure 2: The relationship between innovation management, competitive advantage and operational performance



2.2 Innovation Management and Operational Performance

Innovation management is one of the challenges among the company (Xu et al., 2007). Particularly, it is one of the major challenges among the small businesses such as SMEs. Because limited operations of these organizations could not be promoted with the help of latest technology in the advanced technological environment because it is based on to invest maximum financial resources to adopt latest technology and to implement latest ideas. Innovation management means that the extraction of valuable ideas from the valuable knowledge and based on these ideas' development of new technology and implementation of this technology in the process of manufacturing of various products. Therefore, the management of innovative ideas among the organization from various internal sources as well

as external sources is one of the major issues among the SMEs. Although it has several benefits for the organization because it has important role to promote organizational performance, however, it is one of the crucial tasks.

On the other hand, the operational performance among the companies also has central importance (Prajogo, Toy, Bhattacharya, Oke, & Cheng, 2018) and it has several dimensions. Operational performance is the capability of enterprises to bring products or services to customers using economical procedures. This explanation of operational performance highlights its close association with lean manufacturing as well as Six Sigma methodologies to drive growth. The operational performance can be described as the performance of various procedures adopted to manufacture any product (Dubey et al., 2020). The efficient and effective working of various processes in the manufacturing of products is based on operational performance. Furthermore, operational performance can also be described in the way of manufacturing various products using economical processes. The successful operations could be those operations which has less use of resources and produced the required quality; however, to achieve higher quality with economical processes, it is important to introduce latest technology. Especially in the era of industry 4.0 it is most important to introduce new technology in the manufacturing of various products. However, it is not easy to introduce latest technology among small firms.

There is an important relationship between innovation and company operations (Gomez-Conde, Lunkes, & Rosa, 2019; Hong, Liao, Zhang, & Yu, 2019). The innovation is based on the ideas which can be implemented to manufacturing a product with low cost and high quality by adopting a unique process. In a similar way, operational performance is also based on the process which is based on economical ways to manufacturing a product. Therefore, there is a significant connection between innovation and operational performance (Gomez-Conde et al., 2019). It indicates that better management of innovation can lead to the better operational performance among manufacturing companies. As highlighted in previous studies that innovation and operational performance has significant relationship with each other. Therefore, this study proposed following hypothesis;

Hypothesis 1: Innovation management has significant effect on operational performance.

2.3 Innovation Management and Competitive Advantage

The second important element which has relationship with operational performance is competitive advantage. Competitive advantage denotes to factors that permit a company to yield goods or services better or more cheaply than its rivals (Afraz, Bhatti, Ferraris, & Couturier, 2021; LESTARI, LEON, WIDYASTUTI, BRABO, & Putra, 2020). These factors permit the productive entity to produce more sales or superior margins as compared to its market competitors. It is based on the strength of the company which do not have by the competitor. The SMEs working in a competitive environment must have unique strengths and by using these strengths the companies can overcome their competitors. Strengths can be based on tangible as well as intangible resources. While describing intangible resources it is important to mention the skills of the employees. The unique skills of the employees could be a better

competitive advantage for the companies. Additionally, the competitive advantage can also be based on the new technology, new process and new ways of development of products.

It is observed from the literature that innovation also has contribution to the competitive advantage (Afraz et al., 2021; Kwak, Seo, & Mason, 2018) because competitive advantage is only based on the strength of the company which do not have by the competitor. Innovation is only way to gain various strengths and overcome the issue of competition and achieve higher performance in competitive environment. As it is described that competitive advantage could be in the process of manufacturing various products. It means that there is unique process to manufacture a product is also linked with competitive advantage. Therefore, innovation in the process can also lead to the unique process to manufacture the product which may influence to generate competitive advantage. Therefore, innovation management has central importance to generate competitive advantage. The development of ideas to facilitate the process of manufacturing can lead to the competitive advantage. Hence, it is proposed that;

Hypothesis 2: Innovation management has significant effect on competitive advantage.

2.4 Competitive Advantage and Operational Performance

The strengths of the company are always important to facilitate operations of the organizations (Cantele & Zardini, 2018; Mikalef, Krogstie, Pappas, & Pavlou, 2020).Aforementioned discussion shows that competitive advantage may be based on skills of the employees as well as new technology introduced by a specific company. Both the elements such as skills of the employees or introduction of new technology which do not have by the competitor have significant influence on the operations of the company. For instance, the competitive advantage in shape of skills of the employees also leads to the smooth process of manufacturing. The smooth process of manufacturing always due to the operational performance of the company. Therefore, competitive advantage in form of employee skills has positive effect to provide operational performance. As given in previous studies that competitive advantage as employee skills has influence on operational performance. Furthermore, competitive advantage in form of new technology implementation also has effect on operational performance. As the introduction of new technology always resulted the process of manufacturing various product which can lead to the operational performance. Thus, it is proposed that;

Hypothesis 3: Competitive advantage has significant effect on operational performance.

Hypothesis 4: Competitive advantage mediates the relationship between innovation management and operational performance.

3. METHODOLOGY

3.1 Questionnaire Design and Pre-Test

The current study selected quantitative research rather than qualitative research based on the literature recommendations. Because it is observed that several studies are carried out on quantitative research in relation to the operational performance rather than qualitative research (Naway & Rahmat, 2019; Onofrei, Prester, Fynes, Humphreys, & Wiengarten, 2019; Saleh,

Sweis, & Saleh, 2018). Therefore, by observing the literature the current study also followed quantitative research approach. While applying quantitative research approach to this study, a survey questionnaire was used for data collection. The survey questionnaire is designed by adopting various scale items from previous studies related to the innovation management, competitive advantage and operational performance. The already available scale items revealed by previous studies are used to measure the relationship between innovation management, competitive advantage and operational performance. In this study, innovation management is measured with the help of considering various innovative ideas among the SMEs. It is also considered that how the management of various innovative ideas are fruitful for the company. Competitive advantage is measured by observing the unique skills of the employees. Competitive advantage is also measured by considering the other strengths of the company such as related to the first mover advantage. Introduction of new technology and availability of various resources is also considered. Additionally operational performance is measured with the help of considering elements related to the economical manufacturing process.

Finally, after the development of survey questionnaire, it is shared with the expert in relation to the current field. The experts from the university are provided the feedback on the questionnaire and the questionnaire was refined by removing various errors in the statements and it was ensured that none of the question is confusing. Therefore, this study confirmed content validity and face validity. After that the questionnaire was sent to various respondents in the SMEs of Thailand and pilot study was carried out with the help of 100 responses.

3.2 Sample Size and Sampling

Different studies provided different ways to calculate the sample size. Few studies proposed 300-sample size, however, few studies proposed that there is no limit of sample size; it should be selected by the researcher with the help of population. Additionally, studies also provided various formulas and various rules of thumb to calculate sample size. However, this study observed the sample size of previous studies and it is observed that most of the studies in relation to the operational performance used sample size around 500. Therefore, the current study selected 600 sample sizes for data collection. Furthermore, after the selection of sample size, 600 questionnaires were distributed among the SMEs of Thailand. The employees working in SMEs are considered as the respondents of the current study. While distribution of questionnaires, this study used area cluster sampling which is most suitable to cover wider population.

3.3 Response Rate

From the total distributed questionnaire, this study received 290 from the respondents. Two reminders were also sent to the employees after the gap of seven days. Finally, this study collected 290 questionnaires. From these questionnaires, it is observed that 10 questionnaires are not usable. Therefore, total 280 questionnaires used in data analysis. The response rate in this study remains above 40% which is acceptable to precede further.

4. DATA ANALYSIS

Measurement model assessment is very fast step populace as SEM in which confirmatory factor analysis is carried out (Chairatana, 2021; Hair et al., 2019). Confirmatory factor analysis is carried out to examine the factor loading. The purpose of CFA is to delete or retain the scale items based on the reliability. This study considered 0.5 to retain the items, however the scale items having factor loading less than 0.5 must be deleted. The factor loadings are given in Table 1 which is above 0.5.

4.1 Measurement Model

In order to check the convergent validity, the current study considered composite reliability and average variance extracted (AVE). The minimum level of composite liability in the current study is 0.7. The minimum level of AVE in the current study is 0.5. All the results of composite reliability and AVE are given in Table 1. It is shown that CR is above 0.7 and AVE is above 0.5 for innovation management, competitive advantage and operational performance has confirmed the convergent validity(Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). In the final part of measurement model (Figure 3), this study considered discriminant validity. Although there are several ways to measure the discriminant validity, however this study considered the latest discriminant validity assessment technique. It is shown in Table 2 with the help of HTMT value.

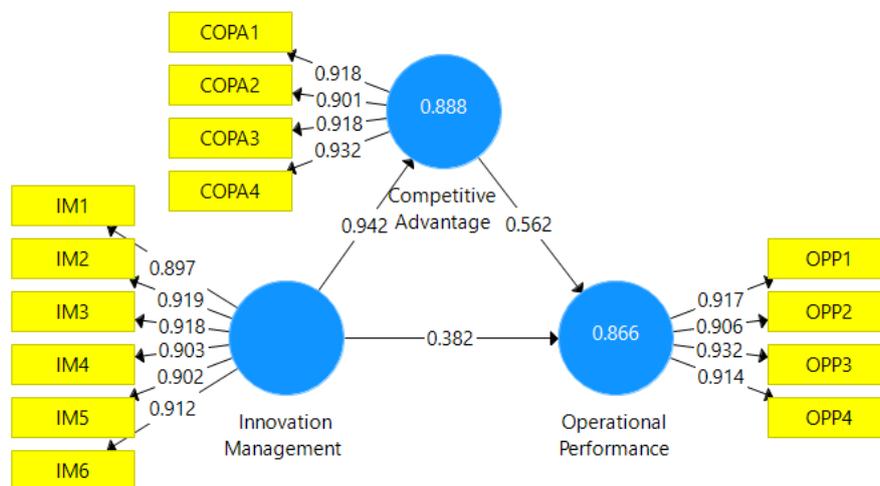


Figure 3: Measurement Model

Table 1: Factor Loadings

| Variables | Items | Loadings | CR | AVE |
|-------------------------|-------|----------|-------|-------|
| Innovation Management | COPA1 | 0.918 | 0.955 | 0.842 |
| | COPA2 | 0.901 | | |
| | COPA3 | 0.918 | | |
| | COPA4 | 0.932 | | |
| Competitive Advantage | IM1 | 0.897 | 0.958 | 0.825 |
| | IM2 | 0.919 | | |
| | IM3 | 0.918 | | |
| | IM4 | 0.903 | | |
| | IM5 | 0.902 | | |
| | IM6 | 0.912 | | |
| Operational Performance | OPP1 | 0.917 | 0.955 | 0.841 |
| | OPP2 | 0.906 | | |
| | OPP3 | 0.932 | | |
| | OPP4 | 0.914 | | |

Table 2: Discriminant Validity

| | Competitive Advantage | Innovation Management | Operational Performance |
|-------------------------|-----------------------|-----------------------|-------------------------|
| Competitive Advantage | | | |
| Innovation Management | 0.895 | | |
| Operational Performance | 0.782 | 0.762 | |

4.2 Structural Model

The second most important part of PLS is structural model which is also recommended by previous studies to examine the relationship between variables with help of primary data (Hair et al., 2017; Khan et al., 2019). In this process, the current study examined four hypotheses. In these hypotheses, the effect of innovation management is considered in relation to the operational performance. The effect of innovation management is also considered in relation to the competitive advantage. The effect of competitive advantage is examined in relation to the operational performance. Finally in fourth hypothesis, this study examined the mediating role of competitive advantage between innovation management and operational performance. The structural model is given in Figure 4 and the results of structural model are presented in Table 3. Table 3 shows the direct effect results which indicate that all the hypotheses are supported. As the t-value of the relationship between innovation management and competitive advantage is above 1.96 which shows that the hypothesis is significant and positive. The t-value of the relationship between innovation management and operational performance is also about 1.96 which also shows the significant and positive relationship. Finally, in direct hypothesis, it is found that competitive advantage and operational performance are significant

and positive because the t-value is above 1.96. Beta value of all these relationships is positive which shows the direct relationship between variables. Finally, the mediation effect of competitive advantage is given in Table 4 which was that mediation effect of comparative advantage between innovation management and operational performance a significant and positive.

Figure 4: Structural Model

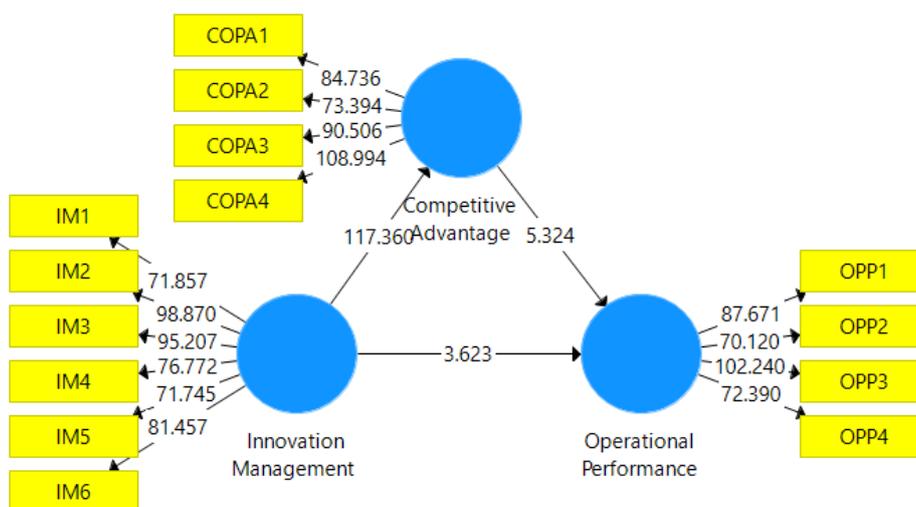


Table 3: Direct Effect

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (O/STDEV) | P Values |
|--|---------------------|-----------------|----------------------------|--------------------------|----------|
| Competitive Advantage -> Operational Performance | 0.562 | 0.558 | 0.106 | 5.324 | 0 |
| Innovation Management -> Competitive Advantage | 0.942 | 0.943 | 0.008 | 117.36 | 0 |
| Innovation Management -> Operational Performance | 0.382 | 0.386 | 0.105 | 3.623 | 0 |

Table 4: Indirect Effect

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (O/STDEV) | P Values |
|---|---------------------|-----------------|----------------------------|--------------------------|----------|
| Innovation Management -> Competitive Advantage -> Operational Performance | 0.529 | 0.526 | 0.101 | 5.257 | 0 |

5. DISCUSSION AND CONCLUSION

To examine the effect of innovation management on operational performance with the help of mediating effect of competitive advantage, the current study developed three direct effects and one indirect effect. Hypothesis 1 shows that innovation management has relationship with operational performance. The result of hypothesis 1 shows that innovation management has positive effect on operational performance among SMEs. It indicates that the ideas management to generate innovation among the organizations can lead to the betterment of various operational activities among the organizations. It is also in line with other studies as various studies shows that innovation has positive effect on operational performance of the companies. Furthermore, in the second research hypothesis, this study proposed the relationship between innovation management and competitive advantage. The results of hypothesis two indicated a positive effect of innovation management on competitive advantage. Therefore, it shows that the generation of various innovative ideas has the ability to enhance competitive advantage. Therefore, the competitive advantage of the SMEs can be attained through innovative ideas. Similar with previous studies also reported that innovation has positive effect on competitive advantage. Hypothesis 3 shows the relationship between competitive advantage and operational performance. This hypothesis also significant and positive which shows various strengths of the company can promote better performance of various manufacturing operations. Therefore, it is observed that to promote operational performance of SMEs in Thailand, it is important to promote innovation management and competitive advantage. Both these elements have the ability to enhance and improve the process of manufacturing of products which lead to the efficiency and effectiveness in the operations of the company with economical cost. In addition to this, the current study also observed the mediating role of competitive advantage between innovation management and operational performance in hypothesis four. It is observed that mediation effect is significant and positive which indicates that competitive advantage has the potential to transfer the positive effect of innovation management on operational performance of SMEs. It is concluded that the combination between innovation management and competitive advantage can promote manufacturing process among SMEs which has positive effect on operational performance.

6. LIMITATIONS AND FUTURE DIRECTIONS

To examine the influence of various factors on operational performance of SMEs, this study considered only two factors namely innovation management and competitive advantage. However, there are several other factors which have influence on operational performance of SMEs. It is needed to introduce other factors having influence on the operational performance. Furthermore, the current study considered the whole term competitive advantage, but the competitive advantage can be considered through different ways such as competitive advantage related to the skills as well as capabilities of the employees and competitive advantage in relation to the latest technology and competitive advantage in relation to the various other strengths of the company. Furthermore, this study carried out research on manufacturing SMEs but the operational performance of service SMEs also has equal importance. Thus, future

studies should also consider service SMEs operational performance along with the innovation and competitive advantage.

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