Influences of Collaboration Strategy towards Firm Performance of Logistics Business in Thailand

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This study aimed to study whether the structural equation model has a significant impact toward firm performance of logistics business in Thailand or not and how its significance was. Questionnaire was implemented in this study by collecting the data from 720 entrepreneurs in logistics business in Thailand. The results of the study reveal that firm performance gets a direct impact on the competitive advantage in competitive differentiation, cost leadership, and quick response aspects. Furthermore, it showed that it had an indirect impact between collaboration strategy and logistics capability aspects; however, the competitive advantage in differentiation, cost leadership, and quick response had direct impacts on logistics capabilities. Furthermore, based on indirect impacts of collaboration strategy factor, the collaboration strategy could contribute higher firm performance when each business promoted logistics capability and competitive advantage efficiently.

Key words: *Collaboration strategy, Logistics capability, Competitive advantage, Firm performance.*

Introduction

In the world of current high-competitive world, organizations having higher firm performance than other competitors can contribute competitive advantage and opportunity from any threats. Firm performance results from the operational systems and organizational goals achievement or organizational successes from human resource usage together with goals of competitive capabilities and cost production, flexibility, speediness, quality, and competence trust including achievements and organizational activities (Najafizadeh & Kazemi, 2019). Conversely, the economic volatility may have an impact on business environment, both in the invasion of social media usages and styles of selling product and service, changing from selling at the showroom shopping to online shopping. Furthermore, in pandemic Covid-19 situation, many customers focus on purchasing and selling products and service via e-commerce markets or via each online-shopping website higher. This causes the quantities of purchase and distribution figures higher. The trends of logistics business values count on 20,603.24 million baths, higher than the values in 2019 at 82.10%. The magnitude of revenues initiates large legal entities (66.33%) and the small legal entities (33.66%) (Department of Business Development, 2020).

Logistics business is a sort of business having the product and service distribution system to the customers that is highly changed from that of the past. This business sounds like the mainstream of entire fields of industries that gives changes of country partners to take 70% of market shares in logistics businesses. Therefore, the entrepreneurs in logistics businesses in Thailand have to cope with the investment of large logistics business entrepreneurs having large amount of their capitals, technologies, whole one-stop service, and specific specialties. More specifically, competitive pricing also has an impact on middle and small businesses which cannot cope with the large logistics counterparts (Yimsiri & Chamsuk, 2016). Consequently, logistics businesses in our country must adjust their firm performance, evaluated by supplying quick and accurate products and service. This includes the timeliness of product delivery, standardized packaging service, punctuality and correctness in both quality and quantities of product distributions without any damages, all of these aspects must depend on many factors, i.e. collaboration strategy, logistics capability, competitive advantage, and so forth to contribute the effectiveness of firm performance (Bae, 2016; Meathawiroon, 2017; Helmy et al., 2018; Bagais & Aljaaidi, 2020; Onditi, 2018). Moreover, the study of Kirono & Hadiwidjojo (2019) stated that collaboration strategy reflects to the contribution of the supply chains which can strengthen the logistics capability higher. Additionally, when the organization has good collaboration strategy together with logistics capability, this can contribute higher effectiveness of firm performance (Bae, 2016; Meathawiroon, 2017). According to the study of Helmy et al. (2018), it suggested that when logistics capability has developed the transportation excellence in customer, supply chain

management, pre- and post- product service, low-cost distribution, positive information sharing aspects, it can promote the dominant competitive advantage as well (Liu & Luo, 2012; Bagais & Aljaaidi, 2020). That is to say, when the organizations contribute positive competitive strategy to increase competitive advantage in differentiation, cost leadership, quick response aspects, it can contribute good firm performance in the long term and the organization survivability in competitive crises (Onditi, 2018; Potjanajaruwit, 2018; Phornlaphatrachakorn, Ngamsutti & Ketchompu, 2020).

Hence, based on the various above-mentioned issues and relationships of each factor, this study focuses on the influences of collaborative strategy toward firm performance of logistics business in Thailand. This study aims to investigate structural equation model toward firm performance in logistics business in Thailand. Most of all data focus on the factors influencing on its firm performance. The results of this study can be a guideline in planning and adjusting collaboration strategy to promote logistics capability and competitive advantage to provide the efficiency and effectiveness of firm performance further.

Literature Review

Business Strategy Development is considered to be a significant factor to measure the variety of effectiveness and efficiency of each organization. Likewise, the organizational performance, its effectiveness is differentiated by the width of organizational structure effectiveness (Wang & Wang, 2012). This organizational effectiveness depending on strategic property management in analyzing firm performance that must cover effects of input resources, production, and operational outcomes, compared with expected aims or objectives (Santos & Brito, 2012). Based on the literature review in concepts, theories, and related studies, it could be concluded as follows:

Collaboration Strategy

It is regarded as a strategy of supply chain management in developing the effectiveness of their supply chains that can promote the manufacturer's collaboration in product and service development and increase the product performance to gradually promote operational cost savings (Arvitrida et al., 2017). Furthermore, collaboration strategy is a process to promote organizational success and adjust itself to cope with the complicated business environment, especially when more than two organizations collaborate each together to enhance their long-term strategic goals and contribute the collaboration between the organizations to enhance their organizational competitive advantages further (Adnan et al., 2017). According to the study of

Kirono & Hadiwidjojo (2019), it shows that collaboration strategy is a factor reflecting the mobility of internal organizational network qualities, both in the network of business partnerships and in business agreement network can enhance information resources of each department, causing by supply chains to create and strengthen the logistics capability. When organizations have good collaboration strategy and logistics capability, it can contribute the firm performance to achieve its profitability effectively. Likewise, Bae (2016) confirmed that collaboration strategy emerging among organizations could contribute the logistics capability to increase organizational performance further (Meathawiroon, 2017). Thus, to make it clear and understandable for the influences, the researcher defined the hypotheses as follows:

Hypothesis 1: Collaboration strategy has an influence on the logistics capability.
Hypothesis 2: Collaboration strategy has an influence on the firm performance.

Logistics Capability

It is an organizational resource that signifies in strategic planning, in accordance with organizational process capability, organizational characteristics, knowledge, and so forth, these factors can manage and apply to be strategies to increase the organizational efficiency and effectiveness (Kirono & Hadiwidjojo, 2019). Logistics capability comes from internal organizational works to plan, coordinate, and integrate activities across different fields of works which is a significant factor and among the external organizations, together with customers and suppliers, to promote profitability (i.e., productivity, firm performance, and achievement to increase values of customers, and so forth) (Najafizadeh & Kazemi, 2019). According to the study of Helmy et al. (2018), it shows that when logistics can develop the customer excellence, supply chains and positive information sharing, it can increase competitive advantage in differentiation, cost leadership, and quick response. Likewise, the study of Bagais & Aljaaidi (2020), it suggests that logistics capability in distribution capability both in marketing, pre-and post-service, and low-cost distribution and prompt delivery can attain the remarkable competitive advantage and can increase level of logistics performance of industries in the kingdom of Saudi Arabia (Liu & Luo, 2012). Thus, to make it clear and understandable for the influences, the researcher defined the hypotheses as follows:

Hypothesis 3: Logistics capability has an influence on the competitive advantage of differentiation.
Hypothesis 4: Logistics capability has an influence on the competitive advantage of cost leadership.
Hypothesis 5: Logistics capability has an influence on the competitive advantage of quick response.

Competitive Advantage

Competitive advantage sounds like the mainstream of strategic and marketing management by integrating management and expertise capability which have specific features to increase more values and cost savings than that of their competitors. It includes knowledge, skills, and innovation to increase higher performance and service quality (Boonyoo, 2018). It also uses its own available resources and organizational capability to maximize the benefits and change from the infrastructure to specific characteristic resources to enhance its values and to decrease the movement and increase the difficulty of its transferable resources and not easy for the business counterparts to duplicate. Also, the business counterparts cannot keep up with the organization. Moreover, this can contribute and attain the competitive advantage in differentiation, cost leadership, and quick response aspects that can achieve organizational performance (Kang & Na, 2020). Furthermore, Onditi (2018) finds that those positive competitive strategies can influence on the organizational performance. The outcomes of each strategic aspect can contribute the variety of its organizational performance in each industry. Like Phornlaphatrachakorn, Ngamsutti & Ketchompu (2020), it suggests that the organization has characteristics of organizational behaviors, focusing on the sustainability of competitive advantage in the uniqueness of differentiation, service values, and lower-cost leadership than those of the business counterparts, can continually benefit the long-term organizational performance (Potjanajaruwit, 2018). Thus, to make it clear and understandable for the influences, the researcher defined the hypotheses as follows:

Hypothesis 6: Competitive advantage of differentiation has an influence on the firm performance.

Hypothesis 7: Competitive advantage of cost leadership has an influence on the firm performance.

Hypothesis 8: Competitive advantage of quick response has an influence on the firm performance.

Firm performance

Firm performance is considered to the initiation of business management because the environmental management can increase the significant organizational performance of financial management. Organizational performance can be a concept to mobilize higher organizational efficiency and effectiveness than the standardized measurement in the present business sectors (Mihaela, 2017). The outcomes of organizational performances have to cover 3 aspects, including (1) financial performance (such as profitability, return on asset (ROA), return on investment (ROI), and etc.); (2) marketing performance (such as sales, market shares, and so forth; and (3)

return on equity (such as return on shares, and economic value added (EVA). Although the organizational performance may get impact on competition in the industry, the monopoly can increase the high return (Wang et al, 2014). This can promote the management of organizational process performance continually to measure the performance development and performance management by using organizational strategic goals both in financial perspective and non-financial perspective to promote sustainability of organizational growth further (Tomic et al., 2018)

Research Framework

From the above previous literary reviews to investigate the accuracy of the conceptual framework in business contexts in logistics in Thailand, the researcher developed the research framework by adapting the conceptual frameworks of Adnan et al. (2017); Najafizadeh & Kazemi (2019); Boonyoo (2018); Wang et al. (2014). Based on the aforementioned literature review; the researcher has created the conceptual framework of this study as the following:

Figure 1. Conceptual Framework
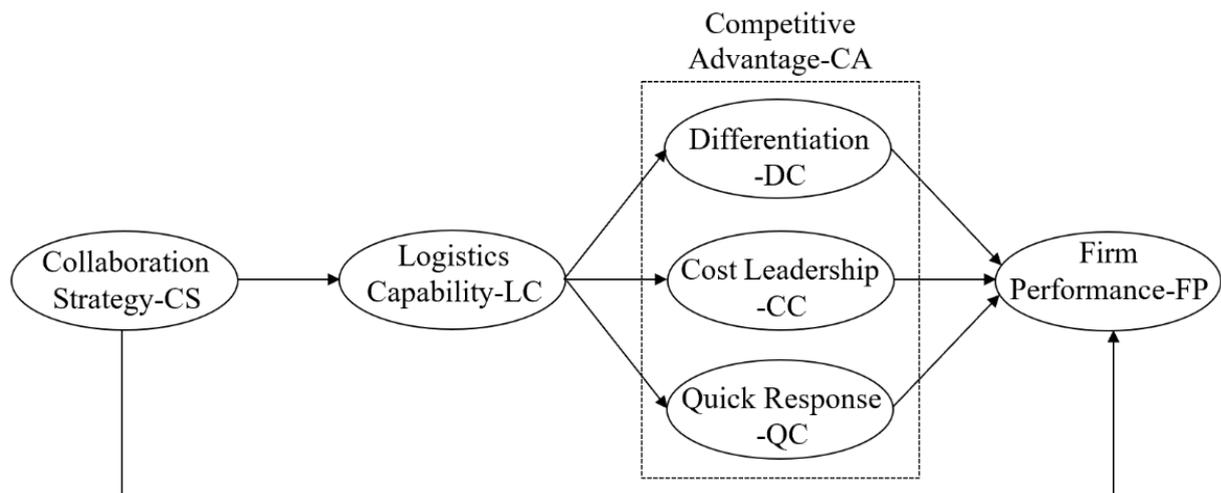
Research Methodology

This quantitative study implemented a questionnaire to collect the data of the study. The participants in this study were 1,724 business entrepreneurs in logistics service in Thailand. Size of the samples was conducted by using structural equation model analysis. Rule of Thump were used to test the hypothesis of this study followed by the concept of Hair et al. (1998) suggested the pathway to analyze the sample from 5 to 20 samples per 1 indicator, not least than 200 samples. Therefore, the optimized ratio of the size of the samples would be 20 samples per

indicator. This study implemented 36 indicators and the samples had to be not less than 720 samples. To random samplings, the samples from the entrepreneurs in logistics service in our country were chosen by stratified random sampling categorizing the size of samples by regional sectors (i.e., North, South, central, and north-eastern of Thailand.)

Research instruments used in the study can be categorized into 4 parts. The first part comprises of respondent's demographical data. The second part exhibits questionnaire items to measure the 5 levels of collaborative strategy, logistics capability, competitive advantage, and organizational performance. A 5-point Likert (1932) was applied for measuring all responses (1 = the lowest; 2 = low; 3 = neutral; 4 = high; and 5 = the highest scores) To find the reliability of the study, the 5 experts were asked to validate the consistency of the questionnaire items and the variables; which the index of consistency (IOC) of the items was at 0.60-1.00. Then, the validity of the quality of the content was tested with 30 of the rest entrepreneurs by applying random samplings. The results of the content validity showed that Cronbach's alpha coefficient scales were at 0.70 with all variables. Additionally, the researcher investigated the quality of research instrument after the actual observation by using the scales of convergent validity to test the validity of the measurement of the latent variables having the same structural equation modelling. The convergent validity scales used to measure each questionnaire item whether each of them was consistent with other item or not by considering loading of factors (positive rate with higher than 0.707 and had the statistical significance). However, some cases, the rating scales might have rates lower than 0.50 as well (Fornell & Larcker, 1981; Henseler, Ringle, & Sinkovics, 2009) as shown in Table 1.

Table 1. The following processes to investigate the convergent validity

Indicator		Mean	loading	t-statistice	CR	AVE
Collaboration Strategy-CS		3.54			0.940	0.807
CS1	has networking development with other business fields	3.19	0.877	93.863	0.000	0.000
CS2	has networking development in build a customer base	3.18	0.895	115.734		
CS3	has resource development activities for business partnerships	3.59	0.944	207.698		
CS4	has informal cooperation with teams	3.65	0.930	160.506		
CS5	has opinion exchanges of service information	3.72	0.841	93.717		
Logistics Capability-LC		3.85			0.938	0.760
LC1	has quick service response	3.88	0.834	62.166		
LC2	has good service image	3.82	0.885	87.993		
LC3	has flexibilities in service	3.87	0.919	125.744		
LC4	has exact confirmation of delivery	3.88	0.893	99.371		
LC5	has the quick response	3.88	0.877	106.192		
LC6	has excellence of service	3.85	0.818	90.315		
Differentiation-DC		3.35			0.952	0.875
DC1	has continually valuable service for its customers	3.42	0.913	165.165		
DC2	has the continual service advantage	3.42	0.952	254.935		
DC3	has a good trust contribution with the customers	3.36	0.942	183.408		
DC4	has the service facilities for all customers	3.27	0.934	163.073		
Cost Leadership-CC		3.01			0.955	0.882
CC1	has lower cost savings than its of other logistics business	3.03	0.932	158.444		
CC2	has good service quality comparing with the competitors	3.05	0.925	124.522		
CC3	has rating lower rate of service than other competitors in the same field	3.03	0.952	252.991		
CC4	has lower rate of service but gain higher profits than the counterparts	2.95	0.945	283.922		
Quick Response-QC		3.45			0.961	0.896
QC1	has gradual new styles of service	3.00	0.936	228.122		
QC2	has the quick improvement of service followed by the suggestions	3.59	0.951	267.662		
QC3	has technologies for quick service	3.60	0.957	317.803		
QC4	has quick service and the least mistakes	3.55	0.940	241.619		

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Firm Performance-FP	3.75			0.877	0.672
FP1 has highly effective service resources	3.75	0.776	46.665		
FP2 has proper standardized service resources as the specified standardization	3.82	0.794	58.536		
FP3 has the development of the lowest cost service savings	3.89	0.890	107.875		
FP4 has good service which makes higher profit than those in the last year	3.77	0.861	92.985		
FP5 has higher market shares compared with those in the previous year	3.80	0.771	50.641		

To collect the data in this study, 720 questionnaires were submitted to the entrepreneurs in logistics businesses in Thailand from 1st June to 31st December, 2020. Then, the data were analyzed by using structural equation modelling (SEM) analysis. The data were categorized as follows: (1) descriptive statistics was implemented by using means, standard deviation (S.D.) to measure levels of collaborative strategy, logistics capabilities, competitive advantage, and firm performance. Best (1981) concept was implemented to analyze means scores (1.00-1.49 = the lowest; 1.50-2.49 = low; 2.50-3.49 = middle; 3.50-4.49 = high; and 4.50-5.00 = the highest); whereas (2) inferential statistics was conducted to analyze structural equation modelling analysis to test the hypotheses and find out the structural equation modelling factors affected to logistics performance in Thailand.

Results

The results in this study showed the results of level of opinions toward collaboration strategy, logistics capability, competitive advantage, and firm performance that the entrepreneurs had overall high level of those factors, ranging at 3.54, 3.85, and 3.75; whereas the standard deviation was at 0.693, 0.723, 0.558 respectively. Furthermore, level of opinions in accordance with competitive advantage in differentiation, cost leadership, and quick response was overall averaged at middle level, ranging at 3.35, 3.02, 3.45 and its standard deviation was at 1.035, 1.1.07, and 0.920 respectively.

The results of analyzing the overall structural equation model were the regression coefficient analysis affecting both direct and indirect effects as shown in Figure 2.

Figure 2. The results of analyzing the relationship of the structural equation model
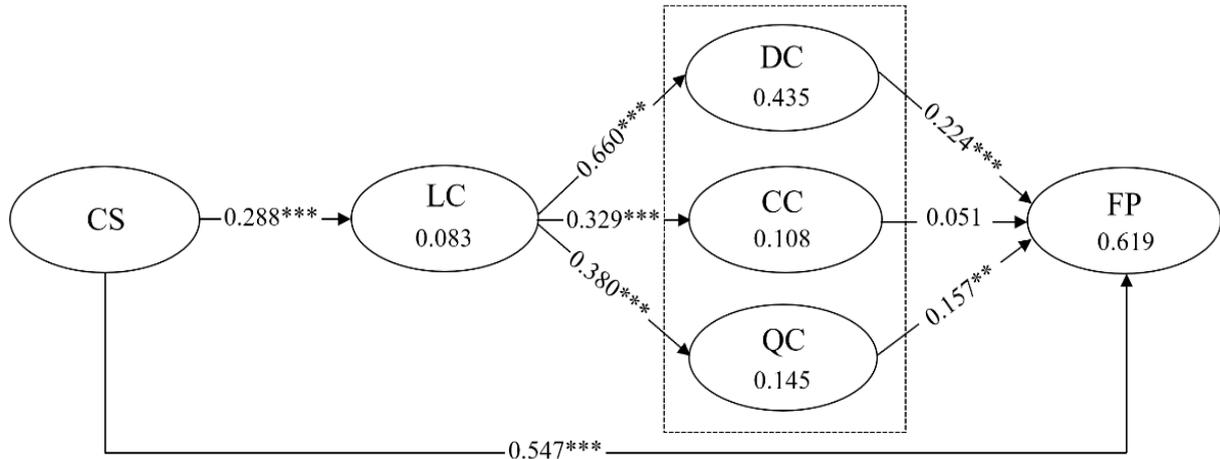
The Figure 2 showed relationship within the structural equation model revealing that (1) collaboration strategy (CS) had a direct impact toward logistic capabilities (LC) and firm performance (FB) had path coefficient scales at 0.288 and 0.547. More specifically, the collaboration strategy had an indirect impact in by competitive advantage (CA) in differentiation competitive advantage (DC), cost competitive advantage (CC), quick competitive advantage (QC) and firm performance (FP) with those path coefficient analyses ranging at 0.190, 0.095, 0.1.9, and 0.065 respectively. 2. Logistics capabilities (LC) had a direct impact toward the competitive advantage (CS) in differentiation competitive advantage (DC), cost leadership competitive advantage (CC), and quick competitive advantage (QC) with those path coefficient analyses ranging at 0.660, 0.329, and 0.380, whereas the logistics capability (LC) had an indirect impact toward the firm performance (FP) with the path coefficient analysis ranging at 0.224; and (3) the competitive advantage (CA) in differentiation competitive advantage (DC) and quick competitive advantage (QC) had a direct impact toward the firm performance with its path coefficient analysis ranging at 0.224 and 0.157, whereas the competitive advantage (CA) in cost competitive advantage (CC) had no direct impact toward the firm performance with its path coefficient analysis at 0.051.

Therefore, it could be concluded that collaboration strategy was a significant factor contributing the logistics capability and firm performance. When logistic service business in Thailand can promote the logistics capability, its business can emerge the competitive advantage in differentiation, quick response which can enhance the firm performance further. Therefore, the results of the path analysis of structural modelling analysis toward the firm performance were

show in Table 2.

Table 2. A summary of results of hypothesis testing.

Hypothesis	Coefficient (Coef.)	t-test	Results
H1: CS → LC	0.288***	8.265	Supported
H2: CS → FP	0.547***	25.024	Supported
H3: LC → DC	0.660***	31.557	Supported
H4: LC → CC	0.329***	9.553	Supported
H5: LC → QC	0.380***	12.025	Supported
H6: DC → FP	0.224***	10.385	Supported
H7: CC → FP	0.051	0.897	Not supported
H8: QC → FP	0.157**	2.885	Supported

Notes: (** refers to p-value ≤ 0.05 or t ≥ 1.96) (*** refers to p-value ≤ 0.01 or t ≥ 2.58)

Table 1 revealed that (1) collaboration strategy had a direct impact toward logistics capability and firm performance by its path coefficient analysis ranging at 0.288 and 0.547 and its t-test statistics analysis was at 8.265 and 25.024. (2) Logistics capability had a direct impact toward competitive strategy in differentiation, cost leadership, and quick response with the path coefficient analysis ranging at 0.660, 0.329, and 0.380 and the t-test scores were at 31.557, 9.553, and 12.025 respectively; and (3) Differentiation competitive advantage and quick response competitive advantage had path coefficient analysis ranging at 0.224 and 0.157 and its t-test scores were at 10.385 and 2.885; whereas the cost leadership competitive advantage had no direct impact toward the firm performance with the path coefficient analysis ranging at 0.051 and its t-test scores was at 0.897.

Discussion

Results of structural equation modelling analysis of firm performance in logistics service business in Thailand showed that firm performance had been influenced on a direct impact of differentiation, quick response, collaboration strategy competitive advantages. Additionally, it had been influenced on an indirect impact on the collaboration strategy and logistics capability. Meanwhile, differentiation, cost leadership, and quick response competitive advantages had been influenced a direct and an indirect impact on logistics capability, followed by the hypotheses of the study. Therefore, based on the above mentioned results of the study, it is necessary for the entrepreneurs to focus on promoting the collaboration strategy of the organization and contributing higher firm performance. Furthermore, the business should promote more logistics capability and competitive advantage performance. Consequently, all of these factors can increase firm performance further. This result is consistent with the study of

Kirono & Hadiwidjojo (2019) that collaboration strategy can reflect on the supply chain emergence which can strengthen logistics capability. When the organizations have good collaboration strategy in association with logistics capabilities, it can emerge the higher effectiveness of firm performance (Bae, 2016; Meathawiroon, 2017). Additionally, the study of Helmy et at (2018) was in consistent with the study of Kirono & Haiwidjojo (2019) that when business contributes logistics capability, it can promote the transport excellence in customers, supply chain management, pre- and post-service, low-cost distribution, and positive information exchanges and can enhance the magnitude of competitive advantage as well (Liu & Luo, 2012; Bagais & Aljaaidi, 2020). Finally, when the organizations contribute the positive competitive advantage to promote the differentiation, cost leadership, and quick response competitive advantages, it can reinforce good log-term firm performance and organizational survivability under the high-competitive crises (Onditi, 2018; Potjanajaruwit, 2018; Phornlaphatrachakorn, Ngamsutti & Ketchompu, 2020).

Conclusion

The results of this study ascertained that any operational management promoting the competitions could increase the firm performance. Logistics services businesses in Thailand should focus on the increase of the high effective service resource usages and follow the standardization of profitability higher than the past. Then, it is necessary to promote collaboration strategy to improve the network development in customer bases and other business fields to promote collaboration in logistics capabilities and good firm performance. Furthermore, the business entrepreneurs should focus on the contributions of good service image in business capabilities and the excellence in service images to emerge the differentiation, cost leadership, and quick response competitive advantages. These can promote the marketing competition of service continually and promote the firm performance further.

The results of this study can suggest for the further study that this empirical research did not promote the correlation between cost leadership competitive advantages toward firm performance; hence, it should be tested in the further studies. Furthermore, the repetitive participants should be tested after 3-5 years later to validate the reliability and validity of the theory or model under the chronological contexts further.

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