

Quyen Ha Tran<sup>1</sup>

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## THE ROLE OF BUSINESS STRATEGIES ON FIRM QUALITY AND COMPETITIVENESS WITH THE MEDIATION OF LOGISTICS COORDINATION EFFECTIVENESS: A CASE OF MANUFACTURING SECTOR OF MALAYSIA

**Abstract:** *The current study examined firm quality and competitiveness using process, market and information strategy and logistics coordination effectiveness in manufacturing industry of Malaysia. The study used survey methodology and the respondents were gathered via convenience sampling. The data analysis was conducted using PLS-SEM. Furthermore, the outcome of study showed that information firm strategy was found insignificant towards firm quality and competitiveness. However, the information strategy was significantly affecting the logistics coordination effectiveness. Moreover, logistics coordination effectiveness was significantly affecting the firm quality and competitiveness. The market strategy was significantly affecting firm competitiveness. Additionally, market strategy was significantly affecting the logistics coordination effectiveness. Also, process strategy was not significantly affecting the firm competitiveness; however, process strategy was significantly affecting the logistics coordination effectiveness. Moreover, logistics coordination effectiveness was significantly mediating the relationship between all three strategies namely market strategy, process strategy and process strategy and firm competitiveness.*

**Keywords:** *Business Strategy; Logistics Coordination Effectiveness; Firm Quality and Competitiveness; Malaysia; Manufacturing Sector.*

### 1. Introduction

The process strategy is also termed as the transformation strategy (Capasso et al., 2020). This refers to an approach of the organization to convert its available resources into useful goods and services (Munggaran, Malihah, & Komariah, 2019). The main objective of this process strategy is to develop a process of production that satisfies the

needs of customers by meeting their demands and fulfills the specification of the products considering the constraints from the managerial point of view and also by considering the allocated cost (Dobusch, Dobusch, & Müller-Seitz, 2019). The selected process by any organization has a long-term impact on its flexibility and efficiency of the production system. It also has a long-term impact on the overall cost and

<sup>1</sup> Corresponding author: Quyen Ha Tran  
Email: [quyentran@ueh.edu.vn](mailto:quyentran@ueh.edu.vn)

quality of the produced goods or services. Thus the limitations have to be set on the process strategy at the time of taking process decisions (Gans, Stern, & Wu, 2019).

The term market strategy highlights a long term and forward-looking approach that includes planning with the basic objective of gaining a sustainable competitive advantage in the market (Kleber, Neto, & Reimann, 2019). There are different definitions of this market strategy. The term refers to targeting the market and the value proposition based on the analysis of the best opportunities in the market (Wu & Lai, 2019). Marketing mix including a total of 4 P's is an important tool to identify the offered product or service. This includes Product, Price, Place and Promotion (Dost, Phieler, Haenlein, & Libai, 2019).

Information strategy is a plan in the long term that is designed to gain the objectives of the organization by managing the data, information or knowledge (Feng, Chen, Feng, Li, & Li, 2019). This information strategy is known as one of the results of strategic management and this is considered as the internal segment of the organizational strategy. The main objective of this information strategy is to highlight the level to which the modern firm depends on the available information (Bentley-Goode, Omer, & Twedt, 2019).

Logistics coordination refers to the information and resources sharing process, the centralized process of decision making and the cluster-based system where each cluster is responsible for a different sector like the sanitation, water, food and information technology (Karaenke, Bichler, & Minner, 2019). This coordination in logistics can bring several benefits to the organizations, such as the efficiencies, higher quality of service, organizational learning, development of new skills, reduction of risks and the increase in public accountability (M. Zhang, Fu, Zhao, Pratap, & Huang, 2019). Further the organizational quality and competitiveness is the firm's ability to compete in the market successfully. They can

perform better as compared to the benchmark companies in terms of sales, profit and market share (Kotzab, Darkow, Bäumlner, & Georgi, 2019).

The sector of apparel and textile manufacturing is considered as the most important and dynamic sector for an economy's growth and in recent years, its importance has increased as the newly industrialized countries have been introduced. The industry of Malaysia is very small as compared to the major producers in Hong Kong, China, Asia, Taiwan, Korea and Japan. But still the textile industry of Malaysia is the targeted one and is and this industry is growing (Ali & Haseeb, 2019). Specifically the plan of the industrial sector of Malaysia is focusing on the development of improved quality of the product, improved maintenance of the levels of reasonable price and also they are working on the expansion of the export market (Nawaz Khan et al., 2019).

There is a potential for the Malaysian market to increase its textile exports towards the United States as it has a trade war with China (Saleh & Ndubisi, 2006). The textile industry is often termed as the sunset industry by some experts started losing its growth a long ago, which resulted in the increasing costs and the country became in competition with Bangladesh, China, and Vietnam. But as there is a rise in the trade war between the United States and China, some western buyers went for the alternative sources and Malaysia took advantage of this situation (Pang & Abdullah, 2013).

As there are unique legal, cultural, distribution and physical environments that the firms have to face in the market all over the world (Spillan, Mintu-Wimsatt, & Kara, 2018), it is very challenging to have efficient and effective logistics solution (Al Shibli, Daud, & Karim, 2018). Thus it is very necessary to have cross-cultural studies to develop our logistics-related understanding and to develop some necessary strategies instrumental to the competitiveness of the firms (McGinnis, Kara, & Wolfe, 2016).

When the studies of cross-culture in other sectors were investigated and compared, the reviews highlighted that the studies of cross-culture in logistics are at the infancy level (Spillan, McGinnis, Kara, de Mayolo, & Jara, 2016). This literature gap gets more prominent when we talk about non-western nations such as China (Nguyen, Ngo, Bucic, & Phong, 2018).

Past studies have been conducted on the topic of organizational competitiveness and these studies have revealed some very useful insights regarding the development of the logistics sector (Ducruet, 2016). However, there is some lacking in the model of these studies as these research papers did not include a very important factor of the logistics sector that is the coordination. This factor works as a mediator between different strategies of the organization and its competitiveness. If there is no proper coordination among the set strategies of the firms, these strategies would not bring any effective results (Spillan et al., 2018).

Another important research gap in this is that the past studies have been conducted in some specific research area and as there is a difference in culture and demographics, the obtained results cannot be generalized to every region of the world. Thus, this study would help to get the generalized results.

As there are variations in the culture and demographics of different regions of the world, the obtained results from other research papers cannot be utilized in all nations. Thus, this study provides some unique but new findings of the studied sector that would help to get fresh data to analyze. Secondly, this study has included the factor of the effectiveness of logistics coordination that adds to the previous research models and it provides a new way to investigate the competitiveness and quality of firms.

The proposed research model is a unique one providing the combination of different organizational strategies and the resulting competitiveness of the organization while having logistics coordination as the mediator

among these variables. This study is a starting point for further investigation purposes since the results would help to explore new ways of increasing organizational competitiveness in the market.

From the researcher's point of view this study is very important. Firstly, this study provides insights from a completely new region of the world using some modified form of past models and this enables the researchers to receive and compare the results. This makes generalization very easy. Secondly, the researchers would also get to know how the addition of logistics coordination in the model would help to improve the organizational competitiveness.

## 2. Literature Review

The writing on logistics coordination effectiveness (LCE) shows that information strategy is the most pleasant factor in the LCE mix in both pre-and post-2000 investigations. It very well may be characterized as "the arrangement of practices, (for example, electronic information trade or coordinated PC frameworks) related with plan and improvement of IS across logistics and supply chain (SC)" (Mellat-Parast & Spillan, 2014). Sadler (2007) characterized incorporated logistics IS as "the contribution of individuals, hardware and techniques required to accumulate, sort, break down, assess and afterward circulate required data to the proper leaders conveniently and exactly so they can settle on quality logistics choices". In Uusipaavalniemi and Juga (2008), six significant parts of IS were referenced and inspected in the servicing business including information properties, information-sharing practices, information innovation use, joint effort establishment, time-related issues, process, and exercises. Information innovation in an association can diminish the bullwhip impact and permit information sharing to happen in an increasingly exact manner between accomplices through the SC network (Lee,

Svensson, Lin, & Tsai, 2009; Raghu & Brat, 2012). As indicated by Bloomberg, Le May, and Hanna (2002), the embodiment of information sharing/frameworks is to move information to significant info. Absence of reasonable information can disturb activities of logistics (transportation, client assistance, creation, distribution center tasks and stock administration). HAN, TANG, and WANG (2009) also indicated that there are two kinds of IS; the forward mix is one in which the bearing of information is from suppliers to clients and third-party logistics assume a significant job, and backward integration is one where the progression of information is from client to supplier. In Prajogo and Olhager (2012) IS in the SC has two angles: specialized perspectives which are identified with the correspondences (IT) some portion of it and social viewpoints like information sharing. The primary motivation behind Information strategy (IS) is giving compact and on time information to react to the present testing markets (Bhatt, 2000). Numerous logistics specialists accept that the application and joining of information innovations is one of the most significant parts of logistics activities management. Stock necessities, client orders, stockroom work requests and transportation archives are the normal kinds of coordination data, which help the framework to be progressively proficient and powerful (Sharkey, 2011; Tian, 2009).

As per Flint, compelling marketing Strategy requests sound SCM. This is because expenses related to SCM unequivocally influence the marketing accomplishment of an item and at last, firm gainfulness. Tragically, the concept of marketing and SCM not generally firmly connected in numerous organizations (Rainbird, 2004). It is hard to develop such prompt marketing which could meet one of kind needs regarding clients of quality, cost, assortment, conveyance and administration only if basic core abilities regarding SCM can't convey. When the aspects of marketing and SCM was not viable Chinese assembling firm integrated, this lead to resulting in client

disappointment, missed deliverance of items/stock and lost client openings (Madhani, 2012). The marketing idea is an important part of executing SCM. Moreover, in the light of the philosophical establishment of an association's exercises, idea of marketing ought to be perfect about SC accomplices' way of thinking so every part can endeavor to fulfill clients at a benefit through between utilitarian coordination inside and among the SC accomplices (Min & Mentzer, 2000). In like manner, marketing direction assumes an essential job in executing SCM. A company's market direction creates and stores important market information that is required during the time spent structure, keeping up and improving SC connections. Since a firm has info about clients, providers, contenders, sociopolitical conditions and innovative patterns, it can respond to questions in regards to which best service has been provided by SC to its clients' needs (Min & Mentzer, 2000). Moreover, the direction of the market can add to the sharing of information inside the SC network. This happens when individual accomplices accumulate information from the market and offer it among one another. Market direction improves connections that at last can advance the usage of SCM in a roundabout way via relationship marketing (Min & Mentzer, 2000).

In 1987, Bowersox and Daugherty (1987) finished a complete investigation regarding logistics Coordination Effectiveness (LCE) on sixteen organizations of America. The study discovered 3 LCE: process, information, and market. Resulting researchers, for example, Kohn and McGinnis (1997); McGinnis and Kohn (1993, 2002) have explored and approved 3 procedures that were characterized in the Bowersox and Daugherty (1987). These analysts reliably identified that strategies of market and process were stressed when LCE was extraordinary. Also, the study additionally established that the two procedures were found existing at a moderate level if and when the firms were utilizing a

decent approach to strategy. When organizations related to manufacturing utilized strategy (unfocused), PS, MS found at low level. The 3 strategies, together are named as OLS, additionally give premise to evaluating logistics/SCM impacts for firm seriousness. Also, Kohn and McGinnis (1997); McGinnis and Kohn (1993, 2002) found that that OLS is bound to be mixed than utilized independently as Bowersox and Daugherty (1987) initially demonstrated. Clinton and Closs (1997) just as Attia (2014) utilized the Bowersox and Daugherty (1987) typology in culturally diverse settings. Clinton and Closs (1997) considered 818 firms of Canada and the US. They inferred that there was a very clearly overlapping between PS, MS, and IS. Currently, Attia (2014) discovered help regarding typology between some pharmaceutical organizations in Egypt.

Chen, Ganesan, and Liu (2009) characterize PS as "a lot of ceaseless rebuilding exercises focused on consistently connecting applicable business procedures and decreasing excess or pointless procedures inside and across firms", while (Bowersox & Daugherty, 1987) characterize it as a lot of quantifiable exercises which increases the value of the framework and has positive client results (Bowersox & Daugherty, 1987; Chen et al., 2009). J. R. Stock (2002) state PS is a key factor in the achievement of SCM. Narayanan, Thiagarajan, Lakhani, Hamburg, and Boneh (2011) accept that both inside and outside PS is required for integration of an association. Inner PS involves coordination between various processes and exercises in an association, for example, the coordination of planning from logistics' side arranging within general strategic planning. Outer PS alludes to the relationship between the processes of the suppliers, clients and outsider third party logistics which incorporates: the coordination of logistics exercises with other SC accomplices; offering a degree of administration to clients that fit with the degree of advancement and preparing in staff; and the coordination of customer

administration plans with firm logistics exercises. Chen et al. (2009) gave two key drivers of PS, named cost orientation and client orientation. Cost direction alludes to the way of life of an association to concentrate on the reduction of cost (Porter, 1985). Chen et al. (2009) propose connecting and improving processes in SC to decrease transaction and costs of production. The long-term and nearby relation between accomplices can diminish observing controlling expenses and economies of scale in the SC. Client orientation, then again, centers around client needs and fulfillment as the need in their business system (Chen et al., 2009). Robertson (2006) examines PS, socio factors and SC standards' association with business execution. The researcher has discovered a positive connection between PS in arranging and booking exercises, e-logistics and transaction exercises.

Bichou and Gray (2004) considered logistics, exchange and supply channels and recognized various elements of each channel in the port framework. Logistics rehearses incorporate various exercises that encourage the productive way of merchandise through SC's, for example, shipping lines and cargo forwarders.

Lin, Cai, and Xu (2010) took a shot at development factors in channel integration and SC execution. Channel integration measurements in the research involve value co-creation, installing operant assets, asset incorporation and value constellation. The outcomes show that value co-creation and value constellations are the most significant variables. Oh, Teo, and Sambamurthy (2012) research the connection between retail channel integration through information advancements on firm execution. The outcomes show the five most significant factors in retail channel integration include integrated advancement, integrated exchange data the executives, integrated item and pricing information management, access to integrated information, integrated request satisfaction and integrated client support.

Strikingly, logistics rehearses have been expected as persuasive factors in logistics joining in various examinations (Bichou & Gray, 2004; Notteboom & Rodrigue, 2005; Panayides & Song, 2009; Song & Panayides, 2008).

The researches have distinguished huge and great advantages of LCE. This incorporates cost decrease, expanded effectiveness, higher efficiency, stock decrease, diminished lead-times, improved client care, and advances in forecast and arranging. G. N. Stock, Greis, and Kasarda (2000) express that integrated coordination frameworks can be straightforwardly valuable for SCM and firm Competitiveness over the long haul. For example, from an operational point of view, integrated procedures can offer brisk reactions to conclusive client requests, lower stock all through the SC network and lower costs in shipment exercises (Armoon, 2013; Barut, Faisst, & Kanet, 2002; Cachon &

Zipkin, 1999). Contrasting three unique methodologies in integrated logistics (independent, semi-integrated and integrated) uncovers advantages, for example, arriving at objectives identified with all logistic chain accomplices, diminishing lead-times and on-time conveyance of loads to proctors, lower-end costs of items, also better quality and better administrations (Sundaram & Mehta, 2002).

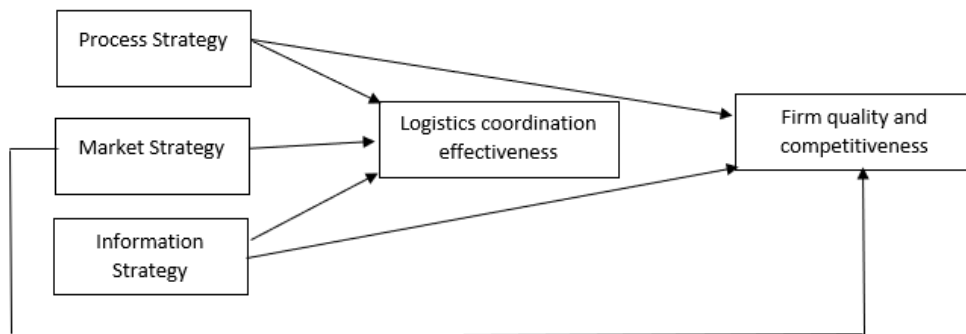
*H1: Process strategy has a significant effect on firm quality and competitiveness.*

*H2: Information strategy has a significant effect on firm quality and competitiveness.*

*H3: Process strategy has a significant effect on logistics coordination effectiveness.*

*H4: Market strategy has a significant effect on logistics coordination effectiveness.*

*H5: Information strategy has a significant effect on logistics coordination effectiveness.*



**Figure 1.** Conceptual framework

### 3. Research Methodology

This section provides a series of methods and techniques via which a researcher can conduct the study with proper management (Mackey & Gass, 2015). It helps in investigating research objectives in an in-depth manner. This section provides a clear picture regarding methods for collecting, generating, and analyzing the data (Bryman & Bell, 2007).

The research approach can be of two kinds. It can either be quantitative or qualitative (Newman & Benz, 1998). The term qualitative analysis could be known as an analytical scientific method that highly emphasizes on only collecting data which is non-numeric. This research "refers to the meanings, ideas, interpretations, features, metaphors, symbols, and explanations of objects" and not to their "counts or steps" (Camic, Rhodes, & Yardley, 2003). Also, the

concept of quantitative research can be established in which quantifiable or numeric data is collected and various statistical analyses or computational analyses can be conducted as well (Neuman, 2013). Here data are gathered through a structured questionnaire, while qualitative open-ended questions can be asked to a respondent and interviews as well (Dörnyei, 2007).

In this research quantitative approach is adopted to analyze the data as we have used a five-point Likert scale questionnaire to collect the data from respondents. Quantitative research depends on the quantification of collection and analysis in the data. A quantitative approach could be used in deductive research and testing of theory and hypothesis.

There are three types of researches: Exploratory, Explanatory and Descriptive research methods (Flick, 2015). In an exploratory type of research, the author highly focuses on analyzing and developing some innovative topics and highly examine the research objective (Gomm, 2008). Explanatory research is conducted on an issue that was not well researched before, undermines specific characteristics or priorities, helps in developing definitions (operational) and also helps in developing an improved model (Kothari, 2004). It is a type of research design that focuses on a detailed explanation of the aspects of your study, which means that the research clarifies the relationship between the two aspects of situations Kumar and Phrommathed (2005), and explains and analyzes the relationship that already exists. Hence, the current study adopted an explanatory purpose because it allowed the researcher to evaluate the objective and provide an enhanced understanding. Also, it helped in identifying the aspect of how and why regarding different actions. There are two kinds of research design Cause and Effect which mean a relationship in which one event (the cause) makes another event (the effect) happen (Koul, 2009). There can be many

consequences for one cause. The other one is said to be a correlational design that can be categorized into a non-experimental design. Also, it allows us to examine the variables and their relationships (statistical) as well and it does not include any type of influence from external variables (Mackey & Gass, 2015). In our research the opted design was causal design of research, as it examines the relationship between the variables. The causal design suggests that what is the cause in a variable that have some particular effects towards another variables, and is conducted in natural environment (Sekaran & Bougie, 2016). In addition, it allowed identifying the strength of relation as well so that future studies could further develop these findings.

The invitation was sent to the potential respondents to take part in the online questionnaire by emailing them the link. We also asked representatives of companies and/or managers (supply chain professionals) of Malaysia that were from logistics activities from their companies to answer or fulfill the questionnaire.

The survey links were sent out to approximately 3000 people out of whom the complete responses received were about 513. Concerning the received responses, the rate of response hence developed was about 17.1 percent. This response rate to our research is considered valid enough within the range of other literature-reported studies.

Furthermore, a convenience type of sampling technique was used which is a type of non-probability sampling. Also, it can be said that it's a technique that emphasizes on data collection from participants that are available with convenience (Cochran, 2007). The data was collected by an online survey and a member of the manufacturing trade association participated in it. This technique provides an easy, fast and efficient way of collecting data (Sekaran & Bougie, 2016). The non-probability sampling technique is used when there are no probabilities attached to the population so that they can be selected as the sample subjects (Burns, 2000).

We carried out PLS-SEM for data analysis. It has been effective for examining the data because it allowed the researcher to effectively measure validation and consistency regarding the dataset (J F Hair, Hult, Ringle, & Sarstedt, 2016). Also, one of the important advantages of using PLS-SEM is that it helps in examining complex relationships with rather ease in comparison towards other techniques (Joe F Hair, Sarstedt, Ringle, & Mena, 2012).

The role of ethical considerations was identified as a major aspect in the process of conducting research. The reason was that it could help the researcher in being polite and respectful towards the participants of the research study (Connelly, 2014). Also, it

means ensuring the quality of integrity of the research by seeking informed consent from the participants (Rani & Sharma, 2012). Hence, the current study highly considered this importance and maintained this concept during the whole process of research conduction. For instance, the researcher addressed the ethical principles and values of every respondent and all respondents took part in the research with their willingness. Also, informed consent was retrieved, and it was specifically told to respondents that their data or experiences given through questionnaires will be used only for academic or research purposes. Thus, all the participants were highly collaborative with the researcher and gave their best possible responses.

## 4. Results

### 4.1 Data analysis

**Table 1.** Measurement Model

Construct	Items	Factor Loading	Composite Reliability	Average Variance Extract
Firm Quality & Competitiveness	FC1	0.823	0.864	0.681
	FC2	0.702		
	FC3	0.934		
Information Strategy	IS1	0.937	0.936	0.830
	IS2	0.910		
	IS3	0.885		
Logistics Coordination Effectiveness	LCE1	0.769	0.898	0.746
	LCE2	0.907		
	LCE3	0.908		
Market Strategy	MS1	0.850	0.893	0.807
	MS2	0.944		
Process Strategy	PS2	0.999	0.804	0.685
	PS1	0.609		

The factor loadings of constructs below 0.40 should be deleted. The factor loadings between 0.40 and 0.70 can be carried based on convergent validity. The factor loadings greater than 0.70, should be retained absolutely (J F Hair, Hollingsworth, Randolph, & Chong, 2017). PS2 had the highest loading (0.999), whereas PS1 had the lowest loading (0.609). The composite reliability value should be greater than 0.70 (J

F Hair, Ringle, & Sarstedt, 2011). Information strategy had the highest CR (0.936); whereas, the process strategy had the lowest CR (0.804). The AVE value should be greater than 0.50 (J F Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). Information strategy had the highest AVE (0.830); whereas, firm competitiveness had the lowest AVE (0.681). Construct validity has been achieved.



**Table 2.** Fornell and Larcker (1981) Criterion

	FC	IS	LCE	MS	PS
Firm Quality & Competitiveness	<b>0.825</b>				
Information Strategy	0.507	<b>0.911</b>			
Logistics Coordination Effectiveness	0.696	0.601	<b>0.864</b>		
Market Strategy	0.586	0.632	0.632	<b>0.898</b>	
Process Strategy	0.158	-0.259	0.242	0.086	<b>0.828</b>

The diagonal values should be greater than the values present horizontally and vertically (Fornell & Larcker, 1981).

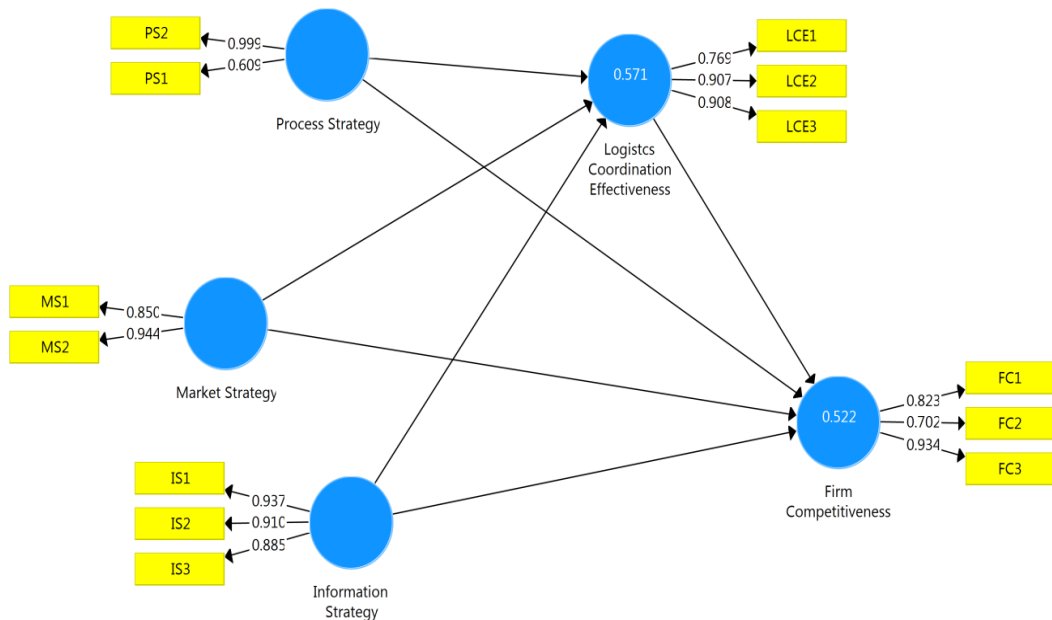
Therefore, the table above showed that the discriminant validity was achieved.

**Table 3.** Heterotrait-Monotrait Ratio (HTMT)

	FC	IS	LCE	MS	PS
Firm Quality & Competitiveness					
Information Strategy	0.598				
Logistics Coordination Effectiveness	0.861	0.694			
Market Strategy	0.720	0.764	0.762		
Process Strategy	0.206	0.302	0.240	0.262	

The threshold that is recommended as per the HTMT ratio is less than 0.90 (Henseler et al., 2014). Therefore, the above table

showed that discriminant validity was achieved.



**Figure 2.** Results

**Table 4.** Path Analysis using PLS-SEM

	Estimate	Std. Dev.	T-Stats	Prob.
Information Strategy -> Firm Quality & Competitiveness	0.079	0.086	0.915	0.180
Information Strategy -> Logistics Coordination Effectiveness	0.521	0.079	6.623	0.000
Logistics Coordination Effectiveness -> Firm Quality & Competitiveness	0.504	0.071	7.079	0.000
Market Strategy -> Firm Quality & Competitiveness	0.214	0.087	2.457	0.007
Market Strategy -> Logistics Coordination Effectiveness	0.272	0.079	3.433	0.000
Process Strategy -> Firm Quality & Competitiveness	0.038	0.153	0.252	0.401
Process Strategy -> Logistics Coordination Effectiveness	0.353	0.156	2.270	0.012

**Table 5.** Specific-Indirect Effect Analysis using PLS-SEM

	Estimate	Std. Dev.	T-Stats	Prob.
Information Strategy -> Logistics Coordination Effectiveness -> Firm Quality & Competitiveness	0.262	0.056	4.711	0.000
Market Strategy -> Logistics Coordination Effectiveness -> Firm Quality & Competitiveness	0.137	0.038	3.641	0.000
Process Strategy -> Logistics Coordination Effectiveness -> Firm Quality & Competitiveness	0.178	0.072	2.479	0.007

**4.2 Structural Model**

The table above showed that the information strategy (0.079,  $P > 0.05$ ) was not significantly affecting the firm competitiveness; however, the information strategy (0.521,  $P < 0.05$ ) was significantly affecting the logistics coordination effectiveness. Also, logistics coordination effectiveness (0.504,  $P < 0.05$ ) was significantly affecting the firm competitiveness. The market strategy (0.214,  $P < 0.05$ ) was significantly affecting firm competitiveness. Additionally, market strategy (0.272,  $P < 0.05$ ) was significantly affecting the logistics coordination effectiveness. Also, process strategy (0.038,  $P > 0.05$ ) was not significantly affecting the firm competitiveness; however, process

strategy (0.353,  $P < 0.05$ ) was significantly affecting the logistics coordination effectiveness.

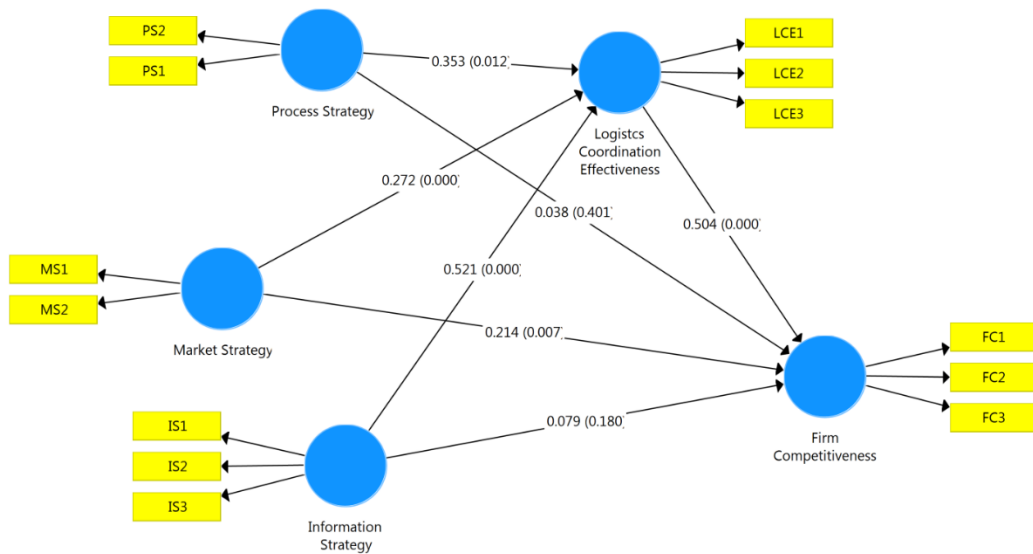
The table above showed that logistics coordination effectiveness (0.262,  $P < 0.05$ ) was significantly mediating the relationship between information strategy and firm competitiveness. Logistics coordination effectiveness (0.137,  $P < 0.05$ ) was also significantly mediating the relationship between market strategy and firm competitiveness. Also, logistics coordination effectiveness (0.178,  $P < 0.05$ ) was also significantly mediating the relationship between process strategy and firm competitiveness.

**Table 6.** Predictive Relevance

	R Square	R Square Adjusted	Q Square
Firm Quality & Competitiveness	0.522	0.511	0.337
Logistics Coordination Effectiveness	0.571	0.564	0.404

The table showed that the firm competitiveness and logistics coordination effectiveness were explained 52.2% and 57.1% respectively as shown by the R-

square values of 0.522 and 0.571. In addition, the values of Q-square are above absolute zero.



**Figure 3. Results**

### 4.3 Discussions

The present study concluded that information strategy has a significant positive relationship with firm competitiveness which is consistent with (Ibrahim & Naem, 2019; Löser, 2015). The study also concluded that information strategy has a positive significant relationship with logistics coordination effectiveness which is also supported by past studies i.e. (Mellat-Parast & Spillan, 2014; Spillan, McGinnis, Kara, & Yi, 2013; Spillan et al., 2018). Also, the study identified that there is a significant positive relationship between logistic coordination effectiveness and firm effectiveness which is also consistent with (Leitner, Meizer, Prochazka, & Sihm, 2011; Y. Zhang & Wang, 2020). The study also identified a positive significant relationship between market strategy and firm competitiveness which is also supported by (Brege & Kindström, 2020; Papadas, Avlonitis, Carrigan, & Piha, 2019).

Moreover, the market strategy has a significant positive relationship with logistic coordination competitiveness which is also consistent with (Aćimović, Mijušković, & Rajić, 2020; Yang & Guo, 2019). This study

also found a significant positive relationship between process strategy and logistic coordination effectiveness which is also supported by (Fugate, Mentzer, & Stank, 2010; Prajapati, Kant, & Shankar, 2019). As far as the specific indirect path is concerned the study shows that there is a significant positive relationship between information strategy, logistic coordination effectiveness and firm competitiveness which is also supported by other studies as well i.e. (Basile, 2012; Lai, Zhao, & Wang, 2006).

Furthermore, Study also found that there is a significant positive relationship between market strategy, logistic coordination effectiveness and firm competitiveness which is also supported by (Al Shibli et al., 2018; Esper, Fugate, & Davis-Sramek, 2007). Lastly, the study concludes that there is a significant positive relationship between process strategy, logistic coordination effectiveness and firm competitiveness which is also consistent with previous studies i.e. (Marchesini & Alcântara, 2016; Zhu, Ng, Wang, & Zhao, 2017).

## 5. Conclusion

Some of the recommendations present in this study for managers to increase the firm's competitiveness are: A savvy businessman is the one who not only cares about his own company, but also reflects on what his rivals are up to. Know your company tactics to climb above them and build your own best strategy.

Also, one thing that will make consumers gain from your brand is cheaper pricing than your rivals, so concentrate on cost-cutting inside the business and you can reduce the commodity costs while generating decent profits. A good price is an added advantage for your company because it draws more buyers.

Moreover, without employing a professional team of employees, you cannot operate a profitable company, because you cannot perform any job involved with running the business on your own. Your staff wants to be as concentrated as you are, and the company's priorities will always be in accordance with their desires. It also helps recruit seasoned workers because they have acquired expertise with similar businesses and can bring value to the company.

Furthermore, though consumers play a role in a company's success, a business must always define a satisfactory standard of quality for the goods or services offered. The goal is to concentrate on consistency compromise and cost-effective solutions. The goal of every company is to develop the goods without

moving outside a fixed budget or price range.

However, taking the consumer reviews seriously, because it can teach you what your abilities are and where you are missing and changing depending on such suggestions. The clients would know they are being noticed and will like to work with the company again. So, it is recommended to use the information from customers effectively in order to achieve a competitive edge.

Additionally, many businesses often follow the direction of joining hands with well-established firms as a partnership for profit-sharing advantage. Although that may be helpful much of the time, if you are interested in having a joint venture with the wrong client, there are dangers involved, and it will backfire so it is recommended to do analysis on the organization long before you start a business with them.

Likewise, Staying ahead of your rivals will allow you to constantly offer top-quality goods or services because you cannot stay ahead of your competitors if your offerings are under-standard, so place the full attention on supplying the consumers with the highest quality solutions.

Lastly, firms' competitiveness represents an enterprise's efficiency; nevertheless, a good manager may always concentrate on quality services. The approach to corporate success is to allow the use of the best resources and techniques to accomplish a goal. So, by following these recommendations the company can achieve a competitive edge.

## References:

- Aćimović, S., Mijušković, V., & Rajić, V. (2020). The impact of reverse logistics onto green supply chain competitiveness evidence from serbian consumers. *International Journal of Retail & Distribution Management*.
- Al Shibli, S. S., Daud, D. B., & Karim, A. M. (2018). Integrated logistics strategies on the omani logistics firms' competitiveness: A measurement model approach. *Australian Academy of Accounting and Finance Review*, 4(1), 37-46.

- Ali, A., & Haseeb, M. (2019). Radio frequency identification (rfid) technology as a strategic tool towards higher performance of supply chain operations in textile and apparel industry of malaysia. *Uncertain Supply Chain Management*, 7(2), 215-226.
- Armoon, A. (2013). Integration and increased productivity in logistics and supply chain. *Institute for Logistics studies, Tehran*, 1(1), 234.
- Attia, A. M. (2014). Testing bowersox and daugherty topology in egypt--an empirical study on the pharmaceutical industry. *International Journal of Business Performance and Supply Chain Modelling*, 6(3/4), 228-238.
- Barut, M., Faisst, W., & Kanet, J.J. (2002). Measuring supply chain coupling: An information system perspective. *European Journal of Purchasing & Supply Management*, 8(3), 161-171.
- Basile, A. (2012). Evaluating effectiveness of airport logistics system as a driver of firm's competitiveness: Empirical evidence for peripheral areas. *Transformations in Business & Economics*, 11(3).
- Bentley-Goode, K. A., Omer, T. C., & Twedt, B. J. (2019). Does business strategy impact a firm's information environment? *Journal of Accounting, Auditing & Finance*, 34(4), 563-587.
- Bhatt, G. D. (2000). An empirical examination of the effects of information systems integration on business process improvement. *International Journal of Operations & Production Management*.
- Bichou, K., & Gray, R. (2004). A logistics and supply chain management approach to port performance measurement. *Maritime Policy & Management*, 31(1), 47-67.
- Bloomberg, D., Le May, S., & Hanna, J. (2002). *Introduction of integrated logistics management*. Beijing: Chinese people press.
- Bowersox, D. J., & Daugherty, P. J. (1987). Emerging patterns of logistical organization. *Journal of Business Logistics*, 8(1), 46.
- Brege, H., & Kindström, D. (2020). Exploring proactive market strategies. *Industrial Marketing Management*, 84, 75-88.
- Bryman, A., & Bell, E. (2007). Business research strategies. *Business research methods*.
- Burns, R. B. (2000). *Introduction to research methods*.
- Cachon, G. P., & Zipkin, P. H. (1999). Competitive and cooperative inventory policies in a two-stage supply chain. *Management science*, 45(7), 936-953.
- Camic, P. M., Rhodes, J. E., & Yardley, L. E. (2003). *Qualitative research in psychology: Expanding perspectives in methodology and design*. American Psychological Association.
- Capasso, I., Liguori, B., Verdolotti, L., Caputo, D., Lavorgna, M., & Tervoort, E. (2020). Process strategy to fabricate a hierarchical porosity gradient in diatomite-based foams by 3d printing. *Scientific Reports*, 10(1), 1-9.
- Chen, Y., Ganesan, S., & Liu, Y. (2009). Does a firm's product-recall strategy affect its financial value? An examination of strategic alternatives during product-harm crises. *Journal of Marketing*, 73(6), 214-226.
- Clinton, S. R., & Closs, D. J. (1997). Logistics strategy: Does it exist? *Journal of Business logistics*, 18(1), 19.
- Cochran, W. G. (2007). *Sampling techniques*. John Wiley & Sons.
- Connelly, L. M. (2014). Ethical considerations in research studies. *Medsurg Nursing*, 23(1), 54.
- Dobusch, L., Dobusch, L., & Müller-Seitz, G. (2019). Closing for the benefit of openness? The case of wikimedia's open strategy process. *Organization Studies*, 40(3), 343-370.

- Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*: Oxford University Press.
- Dost, F., Phieler, U., Haenlein, M., & Libai, B. (2019). Seeding as part of the marketing mix: Word-of-mouth program interactions for fast-moving consumer goods. *Journal of Marketing*, 83(2), 62-81.
- Ducruet, C. (2016). *Ports in proximity: Competition and coordination among adjacent seaports*. Routledge.
- Esper, T.L., Fugate, B.S., & Davis-Sramek, B. (2007). Logistics learning capability: Sustaining the competitive advantage gained through logistics leverage. *Journal of Business Logistics*, 28(2), 57-82.
- Feng, N., Chen, Y., Feng, H., Li, D., & Li, M. (2019). To outsource or not: The impact of information leakage risk on information security strategy. *Information & Management*, 103215.
- Flick, U. (2015). *Introducing research methodology: A beginner's guide to doing a research project*. Sage.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, 18(3), 382-388.
- Fugate, B. S., Mentzer, J. T., & Stank, T. P. (2010). Logistics performance: Efficiency, effectiveness, and differentiation. *Journal of business logistics*, 31(1), 43-62.
- Gans, J. S., Stern, S., & Wu, J. (2019). Foundations of entrepreneurial strategy. *Strategic Management Journal*, 40(5), 736-756.
- Gomm, R. (2008). *Social research methodology: A critical introduction*. Macmillan International Higher Education.
- Hair, J. F., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of pls-sem in information systems research. *Industrial Management & Data Systems*, 117(3), 442-458.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (pls-sem)*. Sage Publications.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). Pls-sem: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V.G. (2014). Partial least squares structural equation modeling (pls-sem) an emerging tool in business research. *European Business Review*, 26(2), 106-121.
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the academy of marketing science*, 40(3), 414-433.
- Han, Q.-Y., Tang, J.-S., & Wang, H.-Y. (2009). Study on evaluating and selecting of suppliers based on improved ahp. *Manufacture Information Engineering of China*, 11.
- Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., . . . Calantone, R.J. (2014). Common beliefs and reality about pls: Comments on rönkkö and evermann (2013). *Organizational Research Methods*, 17(2), 182-209.
- Ibrahim, A. A. A. E., & Naem, A. E. -H. M. A. (2019). The impact of strategic information system and strategic design on organization's competitiveness: A field study. *Academy of Strategic Management Journal*.

- Karaenke, P., Bichler, M., & Minner, S. (2019). Coordination is hard: Electronic auction mechanisms for increased efficiency in transportation logistics. *Management Science*, 65(12), 5884-5900.
- Kleber, R., Neto, J. Q. F., & Reimann, M. (2019). Proprietary parts as a secondary market strategy. *European Journal of Operational Research*.
- Kohn, J. W., & McGinnis, M. A. (1997). Advanced logistics organization structures: Revisited. *Journal of Business Logistics*, 18(2), 147.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*: New Age International.
- Kotzab, H., Darkow, I. -L., Bäumler, I., & Georgi, C. (2019). Coordination, cooperation and collaboration in logistics and supply chains: A bibliometric analysis. *Production*, 29.
- Koul, L. (2009). *Methodology of educational research*. Vikas publishing house PVT Ltd.
- Kumar, S., & Phrommathed, P. (2005). *Research methodology*. Springer.
- Lai, F., Zhao, X., & Wang, Q. (2006). The impact of information technology on the competitive advantage of logistics firms in china. *Industrial Management & Data Systems*.
- Lee, T. R., Svensson, G., Lin, Y. C., & Tsai, P. H. (2009). The impact of a global logistics integration system on localization service and business competitive advantage. *European Business Review*.
- Leitner, R., Meizer, F., Prochazka, M., & Sihn, W. (2011). Structural concepts for horizontal cooperation to increase efficiency in logistics. *CIRP Journal of Manufacturing Science and Technology*, 4(3), 332-337.
- Lin, Z., Cai, C., & Xu, B. (2010). Supply chain coordination with insurance contract. *European Journal of Operational Research*, 205(2), 339-345.
- Löser, F. (2015). *Strategic information systems management for environmental sustainability: Enhancing firm competitiveness with green is* (Vol. 6). Universitätsverlag der TU Berlin.
- Mackey, A., & Gass, S. M. (2015). *Second language research: Methodology and design*. Routledge.
- Madhani, P. M. (2012). Value creation through integration of supply chain management and marketing strategy. *The IUP Journal of Business Strategy*, 9(1), 7-26.
- Marchesini, M.M.P., & Alcântara, R.L.C. (2016). Logistics activities in supply chain business process. *The International Journal of Logistics Management*.
- McGinnis, M. A., Kara, A., & Wolfe, L. I. (2016). An empirically derived framework of logistics management strategy. *Journal of Transportation Management*, 27(1), 5.
- McGinnis, M. A., & Kohn, J. W. (1993). Logistics strategy, organizational environment, and time competitiveness. *Journal of Business Logistics*, 14(2), 1.
- McGinnis, M. A., & Kohn, J. W. (2002). Logistics strategy—revisited. *Journal of Business Logistics*, 23(2), 1-17.
- Mellat-Parast, M., & Spillan, J. E. (2014). Logistics and supply chain process integration as a source of competitive advantage. *The International Journal of Logistics Management*.
- Min, S., & Mentzer, J. T. (2000). The role of marketing in supply chain management. *International journal of physical distribution & logistics management*.
- Munggaran, R. A., Malihah, E., & Komariah, A. (2019). *Pahuwathanatham: A learning process strategy of ethnic and religious conflict resolution*. Paper presented at the 2nd International Conference on Research of Educational Administration and Management (ICREAM 2018).

- Narayanan, A., Thiagarajan, N., Lakhani, M., Hamburg, M., & Boneh, D. (2011). *Location privacy via private proximity testing*. Paper presented at the NDSS.
- Nawaz Khan, S., Hussain, R. I., -Ur-Rehman, S., Maqbool, M. Q., Engku Ali, E. I., & Numan, M. (2019). The mediating role of innovation between corporate governance and organizational performance: Moderating role of innovative culture in pakistan textile sector. *Cogent Business & Management*, 6(1), 1631018.
- Neuman, W. L. (2013). *Social research methods: Qualitative and quantitative approaches*. Pearson education.
- Newman, I., & Benz, C. R. (1998). *Qualitative-quantitative research methodology: Exploring the interactive continuum*. SIU Press.
- Nguyen, N. P., Ngo, L. V., Bucic, T., & Phong, N. D. (2018). Cross-functional knowledge sharing, coordination and firm performance: The role of cross-functional competition. *Industrial Marketing Management*, 71, 123-134.
- Notteboom, T. E., & Rodrigue, J.-P. (2005). Port regionalization: Towards a new phase in port development. *Maritime Policy & Management*, 32(3), 297-313.
- Oh, L. -B., Teo, H. -H., & Sambamurthy, V. (2012). The effects of retail channel integration through the use of information technologies on firm performance. *Journal of operations management*, 30(5), 368-381.
- Panayides, P. M., & Song, D. -W. (2009). Port integration in global supply chains: Measures and implications for maritime logistics. *International Journal of Logistics: Research and Applications*, 12(2), 133-145.
- Pang, Y. L., & Abdullah, A. Z. (2013). Current status of textile industry wastewater management and research progress in malaysia: A review. *Clean-Soil, Air, Water*, 41(8), 751-764.
- Papadas, K. -K., Avlonitis, G. J., Carrigan, M., & Piha, L. (2019). The interplay of strategic and internal green marketing orientation on competitive advantage. *Journal of Business Research*, 104, 632-643.
- Porter, M. E. (1985). Technology and competitive advantage. *The Journal of Business Strategy*, 5(3), 60.
- Prajapati, H., Kant, R., & Shankar, R. (2019). Bequeath life to death: State-of-art review on reverse logistics. *Journal of cleaner production*, 211, 503-520.
- Prajogo, D., & Olhager, J. (2012). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration. *International Journal of Production Economics*, 135(1), 514-522.
- Raghu, R., & Brat, J. -B. (2012). The influence of logistics outsourcing on supply chain management.
- Rainbird, M. (2004). Demand and supply chains: The value catalyst. *International Journal of Physical Distribution & Logistics Management*.
- Rani, R., & Sharma, R. (2012). Ethical consideration in research. *International Journal of Nursing Education*, 4(1), 45-48.
- Robertson, S. (2006). The politics of constructing (a competitive) europe (an) through internationalising higher education: Strategy, structures, subjects. *Perspectives in Education*, 24(1), 29-43.
- Sadler, I. (2007). *Logistics and supply chain integration*: Sage.



- Saleh, A. S., & Ndubisi, N. O. (2006). An evaluation of sme development in malaysia. *International review of business research papers*, 2(1), 1-14.
- Sekaran, U., & Bougie, R. (2016). *Research methods for managers: A skill-building approach* (7th ed.). New Jersey, USA: John Wiley & Sons, Inc.
- Sharkey, J. L. (2011). *A quantitative study of military career transitions with emphasis in knowledge management*. University of Phoenix.
- Song, D. -W., & Panayides, P. M. (2008). Global supply chain and port/terminal: Integration and competitiveness. *Maritime Policy & Management*, 35(1), 73-87.
- Spillan, J. E., McGinnis, M. A., Kara, A., de Mayolo, C. A., & Jara, G. (2016). An empirical assessment of logistics/supply chain management in two latin american countries. *Journal of Transportation Management*, 26(2), 3.
- Spillan, J. E., McGinnis, M. A., Kara, A., & Yi, G. L. (2013). A comparison of the effect of logistic strategy and logistics integration on firm competitiveness in the USA and china. *The International Journal of Logistics Management*.
- Spillan, J. E., Mintu-Wimsatt, A., & Kara, A. (2018). Role of logistics strategy, coordination and customer service commitment on chinese manufacturing firm competitiveness. *Asia Pacific Journal of Marketing and Logistics*.
- Stock, G. N., Greis, N. P., & Kasarda, J. D. (2000). Enterprise logistics and supply chain structure: The role of fit. *Journal of operations management*, 18(5), 531-547.
- Stock, J. R. (2002). Marketing myopia revisited: Lessons for logistics. *International Journal of Physical Distribution & Logistics Management*.
- Sundaram, R. M., & Mehta, S. G. (2002). A comparative study of three different scm approaches. *International Journal of Physical Distribution & Logistics Management*.
- Tian, R. (2009). Internal logistics as a part of supply chain: Case: Nokia-china, dongguang branch.
- Uusipaavalniemi, S., & Juga, J. (2008). Information integration in maintenance services. *International Journal of Productivity and Performance Management*, 1(58), 92-110.
- Wu, C. -H., & Lai, J. -Y. (2019). Dynamic pricing and competitive time-to-market strategy of new product launch under a multistage duopoly. *European Journal of Operational Research*, 277(1), 138-152.
- Yang, H., & Guo, N. (2019). Analysis of supplier competitiveness in supply chain profit distribution from the perspective of quantity supplied and price research based on cournot model and bertrand model.
- Zhang, M., Fu, Y., Zhao, Z., Pratap, S., & Huang, G. Q. (2019). Game theoretic analysis of horizontal carrier coordination with revenue sharing in e-commerce logistics. *International Journal of Production Research*, 57(5), 1524-1551.
- Zhang, Y., & Wang, Y. (2020). Competition and coordination in a dual-channel supply chain with asymmetric retailers *Supply chain and logistics management: Concepts, methodologies, tools, and applications* (pp. 1311-1328): IGI Global.
- Zhu, W., Ng, S. C., Wang, Z., & Zhao, X. (2017). The role of outsourcing management process in improving the effectiveness of logistics outsourcing. *International Journal of Production Economics*, 188, 29-40.

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**Quyên Hà Trần**

University of Economics

Ho Chi Minh City

Vietnam

[quyentran@ueh.edu.vn](mailto:quyentran@ueh.edu.vn)

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