

Firm Culture and Innovativeness among Logistics Companies in Malaysia

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Abstract— The logistics industry environment is continuously changes with intense competition and demanding customers. Hence, appropriate firm culture that initiates firm innovativeness is required. At present, innovativeness research on logistics companies is still limited. Yet, empirical research showed firm innovativeness provide companies capabilities to achieve lower cost while rendering higher quality services that meet all requirements of potential customers, introduce new products, services, business, environmental issues and maximum utilization of information technology. Although there is general impression on low level of innovativeness in SMEs around the world, this research aims to demonstrate that there is potential higher degree of innovativeness within Malaysia's logistics sector. Hence, this study objective is to gauge firm culture relationship with firm innovativeness. The study used simple random sampling technique where 226 companies were selected from total population of 500 logistic companies registered under Federation of Malaysian Freight Forwarders via survey. Findings revealed firm innovativeness among logistic companies is at high level and firm culture has a significant positive correlation with firm innovativeness.

In fact, firm culture specifically adhocracy and market orientation culture significantly and positively influence on logistic firm innovativeness in Malaysia. This study brings new insight on innovativeness among Malaysian logistic companies.

Keywords— firm innovativeness, logistic industry, firm culture, adhocracy culture, market orientation culture

1. Introduction

Logistics is a service oriented industry requires its player to be innovative in providing logistics solution to the customers. The logistics business environment is reflected as continuous change with intense competition and high expectation and demanding customers. In order to sustain, managers are forced to reevaluate their current practices and shape their firm to be an innovative-type of organization. Lowering the customers' logistics costs, safe arrival of goods at promised time and flexible in meeting customers' logistics requirements are achieved through innovation [1]. Thus, the ability to transform from a traditional to innovative way of managing logistics operations may help a firm to stay ahead from its competitors. However, questions on potential antecedents of firm innovativeness among logistics firms in Malaysia has yet to be delved into since the factors that have linking to firm innovativeness among logistics companies has not been given considerable attention by past researchers. Hence, currently, firm innovativeness research on logistics companies is quite limited.

However, in general, various empirical research revealed that innovativeness could guarantee companies the capability to achieve higher quality services that meet all the requirements of potential customers, lower cost and, introduce new products, services, business, environmental issues and

maximum utilization of information technology [2]. More so, firm innovativeness has distinctive properties that make it being unable to be copied and imitated from one firm to another [3].

Nevertheless, despite the revelation, there is general perception on low innovativeness level among SMEs around the world [2]. In fact, there is scarce empirical evidence on how factors of innovativeness operating under different settings of firms [4]. Moreover, despite of many researchers provide vast numbers of literature on innovativeness [4][5], until now, there were limited literatures discussing about firm innovativeness among logistics companies. Hence, this research seeks to gauge the potential of firm innovativeness among logistic firms in Malaysia.

The long-term survival and achieving competitive advantage of the logistics sector can be achieved through innovativeness. It is also the driving force of economic growth at both national and international level. The importance of innovativeness to logistics industry become national agenda that need to be addressed appropriately. Currently, one of the 10 premises presented by Malaysian Prime Minister in Tenth Malaysian Plan (2011-2015) is innovation. The government recognizes innovativeness as one of the driver of high productivity and performance. According to the Malaysian Economic Transformation Program (ETP), logistics industry has been positioned to be among the forefront of Malaysia's economic development. But despite the recognition and importance attached to innovation by Malaysian Government, little consideration has been focused towards innovativeness in logistics industry.

Accordingly, factor influencing firm innovativeness were conceptualized as internal, in this case is firm culture. The firm culture is considered as one of the firm intangible resources and capabilities which the firm can control, review, and improve it. It's are the forces that stimulate an organization certain advantages and disadvantages in aligning the needs of customers and business objectives. The strengths and weaknesses should be examined from market oriented or customer perspective because customer always perceive both of it that a company cannot see. In order to transform the strengths to be the core competencies of the firm or to overcome the

weaknesses so that it will not hinder the capability of the firm to achieve its business objectives, thus firm must poses the ability to innovate.

Firm innovativeness is described as a firm's receptiveness and leaning to embrace fresh conceptions leading to presenting fresh, improved, replication or combination of product/service, process or business system. This study realized that logistics companies have to continuously improve their competitive advantage capability through innovativeness because of their being defenseless to the current business environment and also to stay ahead from international competitors who are well-equipped and managed. Besides, logistics industry itself has been swayed by immense effect of supply chain practices that has caused rapid changes through various channels in attempt to meet consumers' needs. In order to cope with the rapid current changes, it is compulsory for various business to economically adjust their current practices appropriately while attempting to manage business to business (B2B) supply chain as effective and efficient as possible. In fact, the real challenge faced by most logistics companies is where they need to think of a way to deal with customers' requirement of expecting more than one delivery option [6].

Hence, this study believes the firm culture is the utmost criterion of being innovative-type of organization. Studies reveal that firm culture have positive and significant relationship with firm innovativeness. Scholars such as [7] studied the correlation between firms' structure, culture and innovativeness amongst Malaysian service provider and manufacture companies. Their found that firm culture is a vital determining factor of firm innovation. However, the simplistic of their study which involved companies from various industries and sectors and due to the distinct characteristics of logistics companies in nature, it is essential to study the said relationship. Hence, this study intends to investigate the interrelationship between the firm culture and firm innovativeness of Malaysian logistics companies where firm culture is reflected as internal factor of the firm and is conceptualized in two dimensions namely adhocracy culture and market orientation. This study aims to fill the research gap of inadequate literatures on antecedents of firm innovativeness among Malaysian logistics firms.

2. Literature Review

2.1 Firm Innovativeness

Basically, innovation is conceptualized as a newborn service or product or a brand-new way of producing product or service or a new found operation procedure or a newfound management strategy of an enterprise [8]. Firms operates in challenging business environment must poses the ability to innovate which is a method of transforming creative ideas into realistic usage. Another scholar, [9] describes innovation similar to [8] when he asserts innovation as activities aim to generate, introduce and apply beneficial novelty within organizational setting at organizational basis. He then explains on innovativeness as a collective activities of generating, accepting and implementing novel or brand-new processes or products or services in an organization.

2.2 Firm Culture

Meanwhile, firm culture is described as the core values, beliefs, as well as principles of an organization's management system, practices and behaviors that epitomize and strengthen the organization's existence [10]. Other scholar such as [11] viewed firm culture as collective norms, beliefs and values shared among firms' members and translated into firm practices and goals. In fact, many strategy scholars agreed that firm culture has definite role in ensuring firms' competitive advantage. Earlier scholar, [12] accentuates that firm with a strong set of core values defines the ways the firm conduct business. Similarly, more scholar such as [13], [14] and [15] declare firm culture as the assumption, values, attitudes and beliefs shared among employees within any firm. These definitions of earlier and recent findings coincide with [8] findings when he confirms and signifies on the importance of strong firm culture that stimulates the engagement and foster innovative behavior and innovativeness in an innovative-type firms. In fact, [14] argue that since firm culture is set of shared ideas that support firms in accomplishing its mission, then firm culture will have significant role in many facets of the organization. Therefore, culture provides the answer on why people behave the way they did. Based on these definitions, it is apparent the importance of firm culture in inculcating and fostering innovative behavior and innovativeness in any firm.

Firm culture has many dimensions and variation. Earlier researcher, [10] proposed that firm culture model should comprises of 4 integrated components which are: i) involvement of firm's members, ii) collective beliefs, values, and symbols among the firm's members, (3) ability to

adapt to external environment and internal customers thru sets of regenerated behaviors and processes, and lastly iv) mutual understanding of the purpose of firm mission, vision, function and purpose among firm members. This particular model was adopted by [16] and their finding supports the premise that firm with strong culture is able to stimulate high firm performance and sustainable competitive advantages. Therefore, firms should continuously innovate in every aspect of their business operations which helped them to build sustainable competitive weapons so that they can compete and survive in the competitive market place. Meanwhile, in [14] study, they adopted the Competing Values Framework (CVF) proposed by [17] where the model identified four types of firm culture namely adhocracy, clan, market and hierarchical culture. These cultures were used in different firms advocating different competitive strategy.

In accordance to this study delving in the logistics industry as a service oriented industry and having demanding customers which expecting innovative solutions for their logistics requirements, then, this study emphasized on adhocracy culture. Adhocracy culture is regularly found in service industry such as filming, software development and consulting [18]. In fact, in [19] study, they epitomized adhocracy culture as forceful and innovative workplace that motivate and inspire employees to be resourceful and entrepreneurial minded. Firms entrenched with adhocracy culture will tend to be flexible in accommodating customer demands and adaptive to external environment [20]. In addition, adhocracy culture stimulates members to be creative, risk taker and its leader lean towards entrepreneurial and idealistic. According to [21], adhocracy culture is essential to firms working in energetic business environment and to firms struggling to be the leaders in their markets. Since, the focal intention of this study is innovativeness and logistics industry, therefore, this study favors the adhocracy culture because the culture advocates values such as innovativeness, external orientation and flexibility.

Moreover, this study discovered the significance of market orientation culture on logistics industry. Earlier, [22] found substantial evidences from past literatures confirming on market orientation influence on innovativeness and performance of firms. According to [23], market orientation is described as set of activities comprises of (i) market intelligence activities on current and future customer needs, (ii) information distribution across department and (iii) firm receptiveness to it. Meanwhile, [24] explain market orientation as firm culture that produces relevant behaviors for the creation of superior value for buyers and, thus

generates continuous superior performance for business". Instead of market culture as suggested by [17] in CVF which is lean toward internal perspective, market orientation is a market-oriented behavior in a firm which accumulate efforts from all members towards customers' needs and wants. Thus, market orientation focus on external perspective rather than internal perspective but initiate internal processes to respond the needs from the externalities such as customers and market conditions.

2.3 Relationships between Firm Culture and Firm Innovativeness

This study conceptualized firm culture comprises of two dimensions; adhocracy and market orientation culture. These two types of cultures are considered as the most suited culture to be embed in the logistics firms. The integral of two types of culture to form firm culture for logistics companies as both interdependent and complimentary to each other. Perhaps, this could provide synergetic forces to logistics firms specifically in Malaysia. In reality, most firm can and do have basics of several types of cultures. However, over time, one type of culture emerges to be the dominant one. The objective of the study is to gauge the extent of interrelationship between firm culture and firm innovativeness. Besides, many scholars have studied the relationship in different types of organization, such as [25] where they found firm culture had positive relationship with innovativeness among Japanese firms. They also claimed that firm with adhocracy culture outperformed those dominated by clan and hierarchical culture.

More recently, a study [26] examined the relationship between firm culture and innovativeness among chemical companies in Turkey. In this study, the firm culture is considered as interdependent to each other and categorized to four types namely as team, entrepreneurial, hierarchical and rational culture. The author found team and entrepreneurial culture tend to increase the degree of innovativeness within the organization and entrepreneurial culture is a strong predictor of innovativeness. Even though the study suggested entrepreneurship and innovation are complementary, and a combination of these is vital to organizational continued existence but entrepreneurship culture is more concerned on organizational-wide entrepreneurial traits but incapable to formulate culture that focus most on customers.

Therefore, the primal objective of this study is to gauge the interrelationship between firm culture and innovativeness among logistics firms in the Peninsular of Malaysia. Theory of firm readiness provides scientific explanatory to support the

interrelation between the firm culture and innovativeness. Also, this study acknowledges that it is impractical to include all variables contribute to logistic firms' innovativeness within a single model presented here. Nevertheless, a basic model of logistic firms' innovativeness is proposed. The research framework that depicts the interrelationship between firm culture and firm innovativeness is conceptualized in Figure 1 as below.

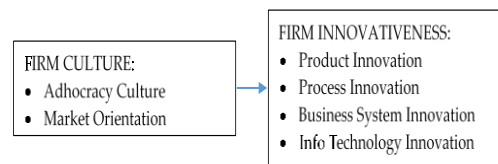


Figure 1: Research Framework

Hypothesis of the study is presented as below:

H1: Firm culture (adhocracy culture and market orientation) has a significant and positive relationship with firm innovativeness among Malaysian logistics firms.

3. Methodology

This study uses quantitative method via survey. It is descriptive and correlational in nature to study the correlation between firm culture and firm innovativeness among logistics firms in Peninsular Malaysia. It is a cross sectional where data were collected thru questionnaire at one point in time. The study population is logistics firms registered with Federation of Malaysian Freight Forwarders (FMFF). This study covered all states in Peninsular Malaysia and majority of logistics companies are locating and operating in this region. The characteristics of the companies is considered as homogenous and the finding from this study is capable to portray the entire population of logistics firms in Malaysia.

Survey method is used for data collection for various reasons: i) study population is large, ii) observed variables are based on perception, iii) availability of funding and time, and iv) to test study hypotheses [27]. Besides, using survey will allow the researchers to gain better understanding of the observed phenomena in the actual situation [28].

The unit of analysis of the study is organization (logistics companies in Peninsular Malaysia) whilst respondents were managers of the firms. This study used simple random sampling to select relevant firms as respondents in the survey. Based on [29], the suitable sample size to represent the logistics companies in Peninsular Malaysia were

226 companies. Suitable questionnaire was developed and mailed to 266 from 500 logistics firms registered with the FMFF. Seventy-seven questionnaires were returned which was 31% of the total sample size of 226. The data were analyzed via SPSS software using descriptive statistics, correlation, and regression analyses.

3.2 Measurement of the Study

The source of measurement instrument is presented in Table 1. This study adopted few measurements to measure two variables namely adhocracy culture and market orientation. Adhocracy culture variable is measured via measurement adapted from [17] whilst market orientation variable is measured via measurement developed by [23]. Firm innovativeness variable is measured via [5]. Firm innovativeness was measured using three dimensions, that are process and product innovativeness, business innovativeness and IT innovativeness. Respondents' perceptions were measured via 5-point Likert-formatted scale of 1 = "strongly disagree" to 5 = "strongly agree". The study also has performed reliability and validity analyses on the instrument. The result confirmed acceptable reliability and validity of the instruments.

Table 1: Measurement of the Study

Variables	Source
Adhocracy culture	Cameron & Quinn (1999) [17]
Market orientation	Jaworski & Kholi (1993) [23]
Firm Innovativeness	Knowles et al. (2008) [5]

4.0 Results and Discussion

Descriptive analysis was carried out to describe the respondents' profile and distinguish standard level of innovativeness among logistics companies operating in Malaysia. Out of 76 logistics firms, most firms were located at Local market area (LMA) (30.6%), Within few states (WFS) (26.4%) and International Market (IM) (25.0%). Majority were private limited (of 53.3%), 37.3% are partnership firms, while 9.3% were others. Respondents were asked on their perception towards firm innovativeness being applied in their company. In order to determine the perception level of these factors, the means were computed and the middle point were used to separate the level from low, moderate and high as mentioned by [30]. Mean score is categorized into three levels, namely as low importance = between value of 1.00 to 2.25, moderate importance = between

value of 2.26 to 3.75 and high importance = between value of 3.76 to 5.00. Result of the analysis in Table 2 revealing that the respondents perceived high level of agreement towards the firm innovativeness in their company (mean=3.87, sd=0.61). Besides, results also pointed to the high agreement towards all contributed dimensions of firm innovativeness which are: process and product (mean=3.88, sd=0.70); business (mean=3.87, sd=0.74) and IT (mean=3.86, sd=0.70).

Table 2: Descriptive Analysis of Firm Innovativeness

	Mean	SD	Level
Innovativeness	3.87	0.61	High
Process and Product	3.88	0.70	High
Business	3.87	0.74	High
InformationTechnology	3.86	0.70	High

Next, the researchers performed two statistical analyses namely Pearson correlation and multiple regression analyses to test the research hypothesis as stated below. Pearson correlation analysis is performed to gauge the extent of correlation between firm culture and firm innovativeness and multiple regression analysis is performed to gauge the extent of prediction of firm culture on firm innovativeness

Table 3: Pearson Correlation Result between Firm Culture and Firm Innovativeness

	Firm Innovativeness
Firm Culture	.726**
Adhocracy Culture	.679**
Market Orientation	.676**

Notes: **p<0.01

Result of Pearson correlation interpretation is based on [31]. According to [31], since correlation is an effect size, interpretation on the strength of the correlation is based on the value of r. He suggested the r value is very strong between .80 and 1.0, strong between .60-.79, moderate between .40 - .59, weak between .20 - .39 and very weak between .00 - .19. Based on the guideline, firm culture and firm innovativeness variables correlation is considered significantly strong positive at $r = .726$ ($p < 0.01$). Specifically, adhocracy culture and market orientation dimensions' correlation with firm innovativeness are also positively significant and strong at $r = .679$ ($p < 0.01$) and $r = .676$ ($p < 0.01$) correspondingly (refer to Table 3).

Meanwhile, multiple regression result revealed encouraging upshot. In order to interpret Multiple

Regression R^2 interpretation, the authors referred to various scholars such as [32], [33], and [34]. According to [35], they suggested that R^2 values ought to be equal to or greater than 0.10 in order for the variance explained of a particular endogenous construct to be deemed adequate; while [34] suggested R^2 values for endogenous latent variables based on: 0.67 (substantial), 0.33 (moderate), 0.19 (weak). According to [35] suggested R^2 values of 0.75, 0.50, or 0.25 for endogenous latent variables are respectively described as substantial, moderate and weak. Assessing these three scholars' suggestion, the authors employ [35] suggestion on interpretation of R^2 value. According to Table 4, multiple regression result revealed significant prediction degree. Primarily, the model is significant at F value of 40.828 and $p = 0.000$. Firm culture consisted of adhocracy and market orientation has significantly explained the variance of firm innovativeness at $R^2 = 0.528$ (or 52.8%). Specifically, both dimensions also significantly predicted firm innovativeness as follows: adhocracy ($B = 0.371$, $t = 3.300$, $p < 0.01$) and market orientation ($B = 0.363$, $t = 3.222$, $p < 0.01$). Based on the result indicated significant and positive influence of firm culture (adhocracy and market orientation) on firm innovativeness. The results had supported the above hypothesis. Therefore, H1 is accepted.

Table 4: The effect of Firm Culture on Innovativeness

	B	t	Sig.	Tolerance	VIF
Adho. Culture	.371	3.30	.001	.453	2.20
Market Orient	.363	3.22	.002	.453	2.20
R^2 value	0.528				
F value	40.82				
Sig.	0.000				

5.0 Conclusion

Based on previous literature firm innovation is deemed imperative to ensure firm competitiveness and sustainability. In this particular study, significant factor that influenced firm innovation is firm culture specifically adhocracy and market orientation. Therefore, it is pertinent for any firm and specifically in this study, logistic firms should dedicate considerable effort in nurturing an encouraging firm culture that support firm innovativeness to ensure the performance, competitive advantage and sustainability of the firm. The study empirically explicates on the

connection between firm culture and firm innovativeness among Malaysian logistic firms registered under Federation of Malaysia Manufacturers Freight Forwarders. In fact, according to the descriptive result, firm innovativeness' mean is deemed high connoting the present situation of firm innovativeness of logistic companies in Malaysia. Furthermore, based on this study's result, firm culture is able to explained a significant amount of variance of firm innovativeness. This finding signifies and clearly demonstrates the basis of this study framework where intensifying innovative behavior and innovativeness in organizations will become visible through strict reinforcement of firm culture that emphasizes on adhocracy and market orientation culture. Thus, the implication of the upsurge of firm innovation will guarantee the enhancement of firm performance. This implies that the importance of innovativeness among logistic companies are readily recognized and practiced. In fact, the result is congruent with various previous study on firm innovativeness in Malaysia such as from [7].

Viewing the matter from a theoretical point of view, positive impact of firm culture on firm innovativeness is expected as stated in previous study [36]. Therefore, in accordance to the result of the study, it is indicated that firm culture (adhocracy and market orientation) is imperative element to ensure firm innovativeness among logistic firms in Malaysia. In fact, firm culture is capable to play its part by shaping on how members should think, believe and feel about things around them in the organization. Nevertheless, in actuality, a strong firm culture that lead to firm innovativeness requires an excruciating effort and extensive time to develop. But, it is worthwhile since innovativeness is a necessity to reach competitive advantage and difficult to imitate by others overnight. Henceforth, logistic firms should definitely consider relevant firm culture to inculcate firm innovativeness.

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