

The Relationship of Logistic Technology in Supply Chain Management on the Customer Relations

Nadia Zaniel¹ & Raja Zuraidah Raja Mohd Rasi^{1,*}

¹Department of Production and Operations Management, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, Batu Pahat, Johor, 86400, MALAYSIA

*Corresponding Author

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Abstract: The logistic technologies are very important due to the development of economy that keep on rising. When there is great information being provided, it showed that it is a good management. Information technology has a mission in which to be better in managing the performance of businesses. For example, if a company make an investment on enterprise resource planning, it is a good decision because there are many benefits in this system which we can see through production, finance, marketing and it is a computer-assisted business management. Logistic technologies became important in a company in order to keep relevant in the market and managing customer relations. According to (Fadiyah *et al.*, 2017), logistics service capability could be defined as the ability of logistics firms to create and apply all the resources in a good way to satisfy the customers. The objectives of this research are to identify the level of logistic technology used in the supply chain company and to determine the relationship of logistic technology and customer relations. Method used in this research is using Google Form that has been distributed to the employees of supply chain companies through online survey. In this study, the researcher found that there is significant relationship between logistic technologies on the customer relations. It can be concluded that logistic technologies are very crucial in this current economy

Keywords: Logistic technology, Enterprise resource planning, Electronic data interchange, Customer relationship management, Social capital

1. Introduction

Most of the logistics tasks are rely on reliable shipment and accurate tracking information so that there will be no problem. Due to this reason, logistics nowadays have involved in a high-technology industry. Hence, distribution is no longer about moving cargo on the road or via air from location one location to the location, but it may be a hard process that has supported by an intelligent system. On the other hand, Electronic Data Interchange (EDI) is perceived as easy to use because this technology

*Corresponding author: rzuraida@uthm.edu.my

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can transfer from computer to computer and from one application to another of structured data based on standardization via telecommunication tool. This technique allows the automatic exchange of data coded according to a language previously agreed between the applications and heterogeneous information systems (Jardini & Kyal, n.d.).

The information that has received showed that it is great management because it could provide all the necessary information. For information technology, this technology focusing on increasing the performance of businesses. Investing in a good system will give many benefits because the ERP system enables the organization to collect the data and information, processing, analyzing and integration, and ease to make decisions. In addition, these systems have a vital role to increase the effectiveness of the organization in terms of giving necessary information for planning and managing processes. Other than that, enterprise resource planning has the technology to create products, services, and competencies, it will give a huge benefit compared to the company.

ERP, EDI, and CRM can be said the systems which are the most favored in the decision-making process in management. For the ERP system, this system manages all the information of management when facing a difficult situation or problem. Nowadays, ERP has become one of the important systems especially for managers in which it helps to do a good decision. There are a lot of situations that might happen in the company when the company at the phase of achieving the target that has been planned such as sudden changes or troubles within the company. In the struggle conditions, the company will need various ways to handle these situations to earn maximum profits. In order to overcome the difficulties, it will be good if have any good information so that the decision is suitable for the situation. The wide globalization of the market and the competitors also have increased, a company need to apply new technologies, so that the strategic business processes in industries can be implemented.

1.1 Research Background

High technology in computer and communications technology have widen the traditional role of information systems (IS) from the creation, storage, information and transmission of information within an organization. The establishment of inter-organizational systems that exchange or share information among organizations also have change due to the advance technologies. There are many kind of definitions for EDI and one of them is it is referred as the exchange of business information from one organization's application of a trading partner. EDI system can also be described as the exchange of information through standard electronic formats with communication protocols to exchange business documents among trading partners.

The distinguishing feature between EDI and other forms of e-commerce is the fact that EDI data are in a structured format and in a timely manner. The EDI data are preformatted and are based on standards deemed acceptable to all trading partners' electronic protocols. EDI has the potential to transform companies internally and make them leaner, more efficient and more competitive domestically and globally. In spite of its many touted benefits, many logistics companies have yet to adopt EDI willingly. The company should adopt this logistic technology in order to sustain the operation of the company in the market. In particular, the adoption of technologies in the company will enhance the performance and customer relations will increase. Applying the logistic technologies may rely on specific social, cultural, economic, legal and political contexts, which may differ significantly between countries.

This shows an empirical investigation of Malaysian managers' perception and their organizational readiness on how to implement potential use of this technology because high technology tend to give a huge benefit to the user. Understanding the level of logistic technology used in the supply chain company help decision makers to predict the technology usage rate and evaluate the future growth of this technology. In addition, this will give more contribution to confirm past studies of a limited

research attempts in developing country context and possible generalization on the adoption of logistic technology especially to EDI technology. Next, with a better understanding of the relationship of technology and customer relations, the companies industry associations, and marketers will seek to increase the usage of logistic technology among companies.

1.2 Problem Statements

Due to a lot of foundations and administrative concepts changed in the last decade, where the shape of the relationship with suppliers and customers has changed, towards more cooperation and coordination for the formation of the supply chain, and achieve goals such as reducing cost. Advances in disruptive technologies, it has gained momentum through the innovation of logistic technologies such as big data and cloud computing. Logistic technologies became important in a company in order to keep relevant in the market and fulfill customer satisfaction. According to (Fadiah *et al.*, 2017), logistics service capability could be perceived as the ability of logistics firms to create and deploy resources in order to provide satisfaction to their customers and thereby enhance service performance. ERP system seems to emerge as a promising technology for achieving performance, precision, and accuracy. For the advanced technology, it will make the production systems more autonomous, dynamic and methods, that need to be useful are more suitable (Tortorella & Fettermann, 2018), flexible and accurate. In this situation, the major aim is to create new opportunities for the industries and market sectors. Customer relations is varied for each of the company that using the logistic technology.

The increasing technology all over the world is a great aspect of supply chain management for over the last 30 years (Choudhary & Jadoun, 2016). In this research, the researcher tries to illustrate the relationship of logistics technology on customer relations. One of the aspects that have been focusing on is the applications of logistic technology with firm performance. Other than that, marketing, financial, and customer perceived satisfaction will definitely give huge relation to globalization. The information and communication technologies that organizations applied, gives the biggest impact on supply chain management (SCM).

In this current research, the researcher proposes to identify the level of logistic technology used in the supply chain company and the relationship between logistic technology and customer relations. The researcher employs quantitative approaches to gather all the data and information with the objective of this study.

1.3 Research Questions

- (i) What is the level of logistic technology used in the supply chain company?
- (ii) What is the relationship between logistic technology and customer relations?

1.4 Research Objectives

- (i) To identify the level of logistic technology used in the supply chain company
- (iii) To determine the relationship of logistic technology and customer relations

1.5 Scope of the Study

The scope of this study was focusing on the logistic technology and how it gives impact towards customer relations. This research focus on what type of logistic technology that gives the most influential factor of customer relations by using the informational method. This research involves employees of logistic company.

1.6 Significance of the Study

This study is of great potential significance to the researcher in terms of how to make use the logistic technologies in supply chain companies in near future. This is because this study will convey

the researcher how important the technology in a company. The outcomes of this study may thus contribute to the body of literature on logistic technology and customer relations which may accord future researchers an additional source of information for understanding the issues and for reviewing literature.

2. Literature Review

2.1 Introduction

Specifically, this section will examine what scholars and previous studies have found relating to the two specific research objectives of this study. It also highlights the independent variable and dependent variable in this research which categorized under the title the relationship of the logistic technology in supply chain management on the customer relations. Independent variables consist of Enterprise Resource Planning (ERP), Electronic Data Interchange (EDI) and Customer Relationship Management (CRM). The dependent variable in this research consists of trust, ethical leadership and social capital. Those variables referred to past studies and scholarly journals so that this literature review can be validated. This chapter shows how the independent variables will influence the dependent variables. It is also emphasizing the rational for the hypothesized relationship.

2.2 Logistic Technology in Supply Chain Management

(a) *Enterprise Resource Planning (ERP)*

ERP is referring to a system where it is relating to individual applications or organization to synchronize all the data and business decision making of the whole organization. This system is related in business functions like marketing, sales and manufacturing. It is also giving benefits in warehousing of the organization, making suitable and accurate planning and finance have a strategic system so that all the cash flow can be traced. This technology makes it easier for recording the inventory, revenue recording, sales forecasting, order tacking and other activities that can be applied in organization (Choudhary & Jadoun, 2016).

(b) *Electronic Data Interchange (EDI)*

EDI is well known with the movement of information electronically between buyers and sellers for the aimed of facilitating a business transaction in order to improve to a better quality of delivery performance and improve customers relations. It shows a great application of computer-communications technology. Its value including reduced paperwork, elimination of data entry overheads, improved accuracy, timely information receipt, accelerated cash flow, and reduced inventories. The implementation of the use of EDI has a great benefit among firms in inter-organization in the supply chain (Masudin & Kamara, 2017).

(c) *Customer Relationship Management (CRM)*

CRM is widely being recognized as an application to developing creative ideas and giving a long term of competitive advantage. This is because, having customer information will enables a firm to understand better the customers (Bhat & Darzi, 2016). Customer relationship management focusing on the customer loyalty because it will determine the profits of business and to ensure the organization can be compete with the other competitors. It is one of the important elements to have the target customer, so that the company can adjusting the operations and make a good forecasting demand.

2.3 Customer Relations

(a) *Trust*

In general, trust is seen as a willingness to rely or depend on some event, process, individual, group or system. Trust, therefore, requires a focus or object of evaluation specific to the area of interest (Clark & Payne, 1997). Trust can therefore be defined as the expectation of individuals that certain other individuals or institutions will meet their responsibilities to them. The concept of trust is widely applied when discussing individuals and society. More recently, trust has been established as an important concept in studies of machines and technology. The idea of discussing trust in relation to technology may seem controversial. Nevertheless, researchers increasingly consider it relevant to investigate users' trust in different technologies. Trust has been shown to be important for users' uptake of new technologies (Nordheim, 2018).

(b) Ethical Leadership

Until now, ethical leadership in education has been studied mostly through qualitative research, an approach which has provided rich information on this complex phenomenon. However, such qualitative inquiry is limited in its capacity to identify the key variables in the actualization of ethical conduct which justifies the need for quantitative studies of ethical leadership (Langlois *et al.*, 2014).

However, recent advances in organizational and professional ethics stress the importance of exercising moral judgment, an aspect which is absent from the ELS. Moral theory of ethical judgment in the workplace underlies the concept of ethical sensitivity. The special function of this theory is to provide individuals with conceptual guidance for choosing to act in situations where there are conflicting moral claims. According to Brown *et al.* (2005), leaders should be a key source of ethical guidance for employees and suggest that ethical leaders provide followers with voice. Sharing power allows subordinates more control and makes them less dependent on their leaders.

(c) Social Capital

Bridging social capitals defined as the connections between individuals who are dissimilar with respect to socio economic and other characteristics (Villalonga-Olives *et al.*, 2016). It is also defined as there are sources accessed through social connections. From an individual (egocentric) perspective, these resources include the exchange of social support, information channels and social credentials.

2.4 Conceptual Framework

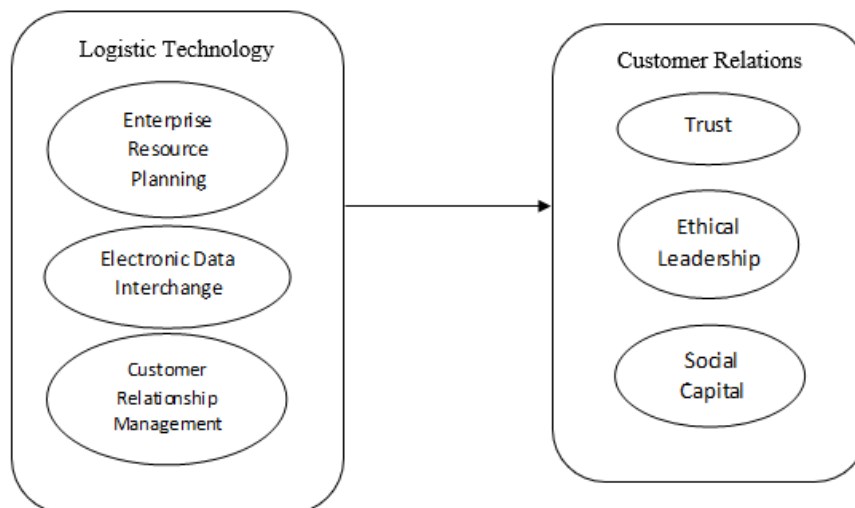


Figure 1: Conceptual framework of relationship between logistic technology and customer relations

3. Research Methodology

3.1 Research Design

General approach or strategy that a researcher adopts to integrate the various elements of the research, and which is both logical and coherent is known as the research design. By designing a research, the researcher gets to know more clearly about what issues that need to study. In this sense, a research design is often conceived as the blue print of a research undertaking as it underpins the data collection method that is used, the method that is applied in the data analysis and even the nature of the population to be targeted. In essence, the research design informs the reader of the final research report of every imperative step that was performed to arrive at the findings that have been reported.

3.2 Research Process

This research was started with finding the item related to logistic technology to carry on the study. The subject areas that are related to doing research have been identified. For doing this research, the information and the sources that are related to the topic has been searching and find. Second, the researcher finds the level use of logistic technology in supply chain company and customer relations. After that, the researcher selects the best method to do this study. This is because, selecting the appropriate method is very crucial in order to ensure the research is going smoothly. Next, the researcher performed the method and the next is run the analysis. For the last step is to report the result. Specific data collection procedures/methods require to be described clearly.

3.3 Data Collection

The research data was collected in supply chain companies at Kluang Johor, with self-administered questions and data also was collected using Google Form that has been distributed to the employees of supply chain companies through online survey. The respondents have been questioned to get their answer and feedback regarding the level of logistic technology used in the supply chain company and the relationship of logistic technology in supply chain on the customer relations. This will increase and improve the data collection process as the population is concentrated in that area. This questionnaire is to explore the acceptability of the study procedures from the respondents' perspective (Mallows *et al.*, 2019). The methods that are used are more likely to be applied to increase the response rates to online surveys than on-paper surveys.

3.4 Population and Sampling Techniques

The target population for this study is the employees of supply chain companies and the focus area is Kluang Johor but the target respondent will be concentrated on DHL company employees. A sample is selected from a population in an appropriate way to reach the appropriate general conclusions. The targeted respondents are comprised of different positions in the company. This is to assume that the sample will be a good representation of the theoretical population of this study. In this study, non-random sampling technique was used. There are four types of non-sampling method and convenience sampling method was used to collect data. The convenient sampling method has been employed because the convenient sampling is easy, inexpensive, and fast to conduct for carrying on research.

3.5 Pilot Test

Table 1: Pilot test results

Variables	No. of Item	Cronbach's Alpha	Interpretation
Enterprise Resource Planning	5	0.734	Very Reliable
Electronic Data Interchange	5	0.908	Strongly Reliable
Customer Relationship	5	0.894	Very Reliable

Management			
Trust	5	0.915	Strongly Reliable
Ethical Leadership	4	0.848	Very Reliable
Social Capital	4	0.859	Very Reliable

3.6 Data Analysis

The questionnaires were coded in readiness for encoding into the Statistical Package for Social Sciences (SPSS) after data collection was completed. In this research, quantitative method was used by the researcher including integrating descriptive and inferential statistical methods to present and analyze the data. For the descriptive statistical methods, pie chart, frequency tables, bar graphs and cross-tabulations were used. The data was processed using SPSS program version 26.

4. Results and Discussion

4.1 Data Cleaning

Cleaning data is very important to ensure there is no error when key in all the data. The researcher looks thoroughly all the data and make the correction of data if there is an error or missing values. Missing value is one of the problems or lack in survey-based research process. After doing the cleaning data, the researcher found that in this result, there was no missing values in data collected.

4.2 Normality Test

Table 2 shows the normality test that can be found using Kolmogorov-Smirnov and Shapiro-Wilk test that display in SPSS. Kolmogorov-Smirnov test can consider use in research when the researcher has data more than 50 respondents. In this research, the total respondents who have answered the survey were 70 respondents, so it is Kolmogorov-Smirnov test that suitable to be used in this research. Kolmogorov-Smirnov test is a non-parametric method which is to measure whether the test variable is normally by comparing the sample scores with the same mean. In Kolmogorov-Smirnov, if p value is greater than 0.05, so null hypothesis is accepted and data was assuming normally distributed. But, if p value is less than 0.05, the null hypothesis is rejected and the data deviated from normal distribution. Sig.” was represented as p-value in SPSS that under Kolmogorov-Smirnov. Based on the Table 2 above, the p-value of all items are below 0.05. Therefore, it can consider as not normal distributed. Besides, in this study, Spearman’s rho correlation coefficient was used because the data distributions are not normal.

Table 2: Test of normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Enterprise Resource Planning	0.206	70	0.000	0.900	70	0.000
Electronic Data Interchange	0.261	70	0.000	0.858	70	0.000
Customer Relationship Management	0.208	70	0.000	0.872	70	0.000
Trust	0.170	70	0.000	0.911	70	0.000
Ethical Leadership	0.282	70	0.000	0.838	70	0.000
Social Capital	0.306	70	0.000	0.826	70	0.000

a. Lilliefors Significance Correction

4.3 Discussions

(a) Level of Logistic Technology Used in the Supply Chain Management

The finding of this study was found that the level of logistic technology used in the supply chain company that has been used is customer relationship management, electronic data interchange and enterprise resource planning. Those three technologies have been used at DHL's company by the employees to ease them doing their job. Their performance also has increase when using those technologies.

(b) Relationship between Logistic Technology and Customer Relations

The results were found to be significant with correlation coefficient. This shown that the hypothesis was accepted in this research. This finding was equally with previous study which is shown that there is a positive and significant relationship between logistic technology and customer relations. There are majority of employees were accepted and agree that the logistic technologies help them to increase their productivity. This situation will improve the employee's attitude towards customer relations because there is a relationship between logistic technologies and customer relations.

5. Conclusion

In conclusion, these findings indicated that there was a significant correlation between logistic technologies and customer relations. In this research, there are several recommendations that can be applied which is the organization can have continuous investment in logistic technologies. Besides that, the company should give reward to those employees that well perform with customer relations. This is because reward is considered to encourage employees in enhance their productivity. Then, the finding of this study also give benefit to employees because they get to know that logistic technology is very important. Therefore, the employee will continuously to perform well to motivate themselves to achieve the good relationship with customer relations.

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