

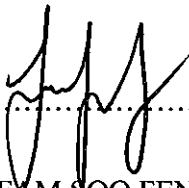
DEVELOPING ENTERPRISE RESOURCE PLANNING THROUGH TOTAL  
QUALITY MANAGEMENT TO IMPROVE QUALITY PERFORMANCE OF  
MALAYSIA'S MARITIME FREIGHT FORWARDING

ONG KIM SOON

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## APPROVAL AND DECLARATION SHEET

I hereby declare that I have read this thesis and in my opinion, this thesis is sufficient in terms of scope and quality for the award of a Bachelor of Technology Management and Technopreneurship with Honours (Technopreneurship)

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This Report Submitted in Partial Fulfilment of the Requirement for the Award of  
Bachelor of Technopreneurship with Honour

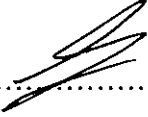
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DECEMBER 2019

## DECLARATION

“I admit this report is the result of my own work except summarizes and quotes that everything I have explained the sources”

Signature :  .....

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Date : *06/02/2020* .....

## **DEDICATION**

I dedicate this research to my family, especially to my parents and sibling. For my supportive father, Mr. Ong Beng Chuan, thank you for always gives me the spirit and motivation to complete any tasks. For my loving mother, Madam Lee Yoke Teng, thank you for always supported me in every way I wanted to achieve my dreams and become my backbone in every of my success. For my supervisor, Dr. Fam Soo Fen, thank you and appreciate for the guidance, support and help for this research. Deepest thanks to other lecturers for their guidance and to my friends for support and help me whenever I need them.

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Firstly, I would like to express my deepest thanks and appreciation to Dr Fam Soo Fen as my supervisor, who have guided and help me a lot in order to complete this project. Next, I wanted to express my appreciation to Dr Yusri Bin Arshad for evaluating my works and presentation which showing me guidance towards my works. I also want to express my gratitude the other lecturers at Faculty of Technology Management and Technopreneurship that always give guidance and cooperation when I needed them. They have given valuable knowledge and information for me during progress of my research project.

Besides that, I also want to give appreciation to my parents, family and my siblings for their support, encouragement, guidance and cooperation from the beginning until the end of this semester to complete this research. Without their help, I will encounter many difficulties to finish the tasks by myself. Thanks to all my friends for always helping and give support when I needed and everyone that contributed to this final year project progress until it fully completed.

## ABSTRACT

Maritime support services are one of the most important sector in Malaysia ensuring the growth trade volume stability and enhance competitiveness as a trading nation globally. Maritime support services are managed by maritime freight forwarders as they responsible for every services in facilitating the maritime sector and provide wide-ranging services from handling and shipping goods to specific destination. Therefore, the solution of ERP and TQM is needed in maritime freight forwarding sectors because ERP and TQM able to overcome the dwell times and certain issues in management of freight forwarding sectors are facing. The purpose of this research is to investigate the relationship between ERP and quality performance of maritime freight forwarding with the presence of TQM. The research was conducted in SFFLA through questionnaires to find out the effect of ERP and TQM towards quality performance. There were total of 184 respondents who responded the questionnaires with different gender, nationality, age, department, working experience, educational level, understanding of ERP and TQM. The data collected were analysed using descriptive analysis with SmartPLS as analysis tools. Based on data analysis, it is discovered the positive relationship between ERP and quality performance with presence of TQM. In addition, the relationship between ERP as independent variable and TQM as mediation variable shows positive relationship. In summary, the quality performance of maritime freight forwarding can enhance the maritime sectors to improve better and achieve Malaysia's vision with the help of ERP and TQM.

Keywords: ERP, TQM, Quality Performance, SFFLA, SmartPLS

## ABSTRAK

*Perkhidmatan sokongan maritim adalah salah satu sektor yang paling penting di Malaysia yang memastikan kestabilan dagangan pertumbuhan pertumbuhan dan meningkatkan daya saing sebagai negara perdagangan di seluruh dunia. Perkhidmatan sokongan maritim dikendalikan oleh pengangkut barang maritim kerana mereka bertanggungjawab untuk setiap perkhidmatan dalam memudahkan sektor maritim dan menyediakan perkhidmatan yang luas dari pengendalian dan penghantaran barang ke destinasi tertentu. Oleh itu, penyelesaian ERP dan TQM diperlukan dalam sektor penghantaran kargo maritim kerana ERP dan TQM dapat mengatasi masa tinggal dan isu-isu tertentu dalam pengurusan sektor penghantaran barang sedang menghadapi. Tujuan kajian ini adalah untuk mengkaji hubungan antara ERP dan prestasi kualiti penghantaran barang maritim dengan kehadiran TQM. Penyelidikan ini dijalankan di SFFLA melalui soal selidik untuk mengetahui kesan ERP dan TQM terhadap prestasi kualiti. Terdapat seramai 184 responden yang menjawab soal selidik dengan jenis kelamin, kewarganegaraan, umur, jabatan, pengalaman kerja, tahap pendidikan, pemahaman tentang ERP dan TQM. Data yang dikumpul dianalisis menggunakan analisis deskriptif dengan SmartPLS sebagai alat analisis. Berdasarkan analisis data, didapati hubungan positif antara ERP dan prestasi kualiti dengan kehadiran TQM. Di samping itu, hubungan antara ERP sebagai pemboleh ubah bebas dan TQM sebagai pemboleh ubah pengantaraan menunjukkan hubungan positif. Ringkasnya, prestasi kualiti penghantaran barang maritim dapat meningkatkan sektor maritim untuk memperbaiki prestasi yang lebih baik dan mencapai visi Malaysia dengan bantuan ERP dan TQM.*

*Kata kunci: ERP, TQM, Prestasi Kualiti, SFFLA, SmartPLS*



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## ABBREVIATIONS AND ACRONYMS

ABBREVIATIONS	MEANING
MIMA	Maritime Institute of Malaysia
IMP3	Third Industrial Master Plan
IT	Information Technology
GATS	General Agreement on Trade in Services
WTO	World Trade Organization
TQM	Total Quality Management
ERP	Enterprise Resource Planning
ESCAP	Economic and Social Commission for Asia and the Pacific
AMH	Association of Malaysian Hauliers
IMSML	International Malaysian Society of Maritime Law
FMFF	Federation of Malaysian Freight Forwarders
SFFLA	Selangor Freight Forwarders & Logistics Association
NVOCC	Non-Vessel Operating Common Carriers
MTO	Multimodal Transport Operators
MRP	Material Requirements Planning
CSF	Critical Success Factors
BPR	Business Process Reengineering
SMEs	Small And Medium Enterprises
PLS	Partial Least Square
SmartPLS	Smart Partial Least Square
SEM	Structural Equation Modelling
CFA	Confirmatory Factor Analysis
AVE	Average Variance Extracted
CR	Composite Reliability





# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The beginning of this chapter one is background of the research, a general introduction of Malaysia marine and maritime industry. Problem statement is drawn, followed by research questions with description and research objectives formulation. This chapter include significant of study, scope and limitation, and ends with structure of research.

### 1.2 Background of study

Malaysia has an opportunities to expand the development of its maritime economy, with the help of shipyards, ports, terminal and the main geographic location. Maritime industry plays an important role as it facilitates Malaysia's growing trade and being ranked to lead it among the world's major trading nations. Estimated 95%

of Malaysia's trade is carried via ocean-going vessels which served as importance of maritime sector (Khalid, 2008). There is not an overstatement to state that maritime industry serves as a backbone of Malaysia's economic prosperity, the nation can be dependence on maritime transportation as an essential enabler of its international trade. (Rose, 2004), stated that maritime sector is a crucial importance in modern societies with the terms of social and economic development, and it offers outstanding and various type of employment and job opportunities to every people that need to works and professionals of specific departments.

Nonetheless, having limited perception and appreciation of general public towards the influence and role as an important element through society and country's economic growth. There are millions of people working in the industry and companies directly and indirectly running the sectors related to oceans and seas worldwide currently. Throughout the history, fishing and shipping industry have the experience of on-going development which they need to increase their fleets and total trade volume as well as fishing capacity. Therefore, shipping has always been the main practise of transportation and indispensable communication linking whole coastal cities, countries and continents. The international shipping industry carried around 90% of global world trade as water transportation is one of the economically and environmentally the most effective way to travel and transport merchandise. This astonishing increases of traditional sea-related activities which maritime sector has facing a noteworthy qualitative and quantitative expansion with the new appearance and development of three recent industrial growth poles that is offshore oil exploration, production industry and cruise sector.

On 26<sup>th</sup> March 2015, Ministry of Transport Malaysia, Marine Department of Malaysia, and Malaysia Ship-owners Association, the Maritime Institute of Malaysia (MIMA) organized a national conference with themed "Revitalizing Malaysian Shipping for a Sturdier Economy" (Kasim, 2015). This shows that Malaysia have the high opportunity become successful in maritime sector despite the challenges faced by the industries in every year. In fact, shipping industry have huge impacts to the economy and security of Malaysia, the conference tackled policies and strategies that

needed to overcome the shipping industry weaknesses and to bloom in a competitive environment globally. Besides, government of Malaysia came up with the Malaysia Shipping Master Plan 2017 to 2020 replacing the Third Industrial Master Plan (IMP3) that conclude shipping master plan was instantly required to enhance the state of Malaysian shipping.

Maritime support services is crucial in ensuring that its maritime sector can facilitate Malaysia's growing trade volume and enhance the competitiveness as a trading nation globally. Maritime support services consists logistics, banking, insurance, law, ship classification and IT that provide vital support towards operations of ports and shipping which act as the main pillars of maritime transportation in Malaysia (Khalid, 2008). Facilitation of Malaysia's international trade depends heavily on maritime transportation, therefore, it is crucial to develop maritime support services as it ensuring the maritime sector of the nation can grow the trade volume and increases the competitiveness as a trading nation. Malaysia has complete an excellent goals in developing multiple maritime support services thus it's have the responsibility to improve both opportunity and facility of these support services which enabling the practitioners able to assist the international market and exploiting on world-wide trade capacity as the demands grows in maritime support services.

The General Agreement on Trade in Services (GATS) under the guidance and protection of World Trade Organization (WTO) since 1995, has outlined six core support services in the maritime industry. These services also known as maritime ancillary services are cargo handling, storage and warehouse, customs clearance, maritime agencies, container station and depot, and maritime freight forwarding (Sgouridis, 2003). The improvement of the maritime support services sector is not supported by a comprehensive strategy and long-term development approach although there are many players involved in these services. The consequences causes no bond or relationship between the services with each other throughout the maritime sector and other production sectors of the nation's economy. According to (Khalid, 2008), freight forwarding in maritime support services play a huge role in the production process of goods and improving the efficiency in the supply chain. Therefore, maritime

freight forwarding face most of the challenges during the busy hours and needed to be improve.

The suggestions to overcome the matters that existed now is by implementing Total Quality Management (TQM) in maritime freight forwarding. The existence of TQM helps a lot of the issues that are happening in an organization performance especially in freight forwarding. According to (Ying, The effects of technology and TQM on the performance of logistics companies, 2006), the researchers found that TQM able to implemented in maritime sector specifically in maritime freight forwarding which having a strong and positive relationship between TQM and organizational performance to deal with their current issues. Conversely, there are still not many research on maritime freight forwarding sector thus, to perform a good quality services, TQM need to be implemented.

There are another suggestion that able to implement in maritime freight forwarding sector that is Enterprise Resource Planning (ERP). ERP improves the overall operational efficiency by integrating both business process and easily to integrated data across the whole enterprise. Implementation of ERP used by many companies to manage and integrate important portion in order to enhance the overall business performance (Mehrjerdi, 2010). Therefore, ERP can implemented in maritime freight forwarding sector to increase the efficiency and enhance the productivity performance in maritime sector of Malaysia.

### **1.3 Problem Statement**

Maritime freight forwarders are the firm specializing in placing storage and shipping of commodities on behalf of its shippers. Freight forwarders usually delivers full range of services that includes tracking domestic transportation, shipping

preparation and export documents, negotiating charges of freight, consolidation of freight, warehousing, cargo insurance, and insurance claims filing. The freight forwarding principles are premised upon efficient and cost-effective transfer of goods that are sustained and conserved in decent condition throughout their journeys. In order to accomplish the task, freight forwarders becomes the experts in handling the logistics as to ensure the goods arrive on time.

Being an expert in logistics to facilitate the maritime sector, there will be challenges that been identified faced by the freight forwarders especially involving freight transportation as a study conducted by the Economic and Social Commission for Asia and the Pacific (ESCAP). One of the major problem in maritime freight forwarding is congestion of the land transport accesses to ports causing excessive dwell times for freight at ports or inland border checkpoints. The reasons behind of this problem is slow customs inspection, slow document transmission, intermodal transfer and operational get delays and lastly the lack of human workforce in this sector will decreases the performance in the freight forwarding companies.

Slow customs inspection happened due to the intention of the Customs to catch a few 'bad hats' that tried to smuggled illegal items to the ports with a surprise checks, causing serious delays and congestions (Tan, 2016). Freight forwarders consider these initiatives to improve the internal operations which should not cause any delays in the clearance but as the result, it affects the majority of the unaffected businesses that occur at the same time. Transmission of document get delay because of the management that in charge unable to manage the transmission since there are many documents about cargo and containers. Intermodal transfer and operational get delays as clients, manufacturers and customers wanted to send their stock of products in a huge batch causing the freight needed to arrange the schedule for every stocks is fit into the shipment. Furthermore, challenges occurs whenever drivers and carriers that responsible to deliver the goods are inexperienced which causes huge delay. Some of the problems which are dispatch and booking errors that causing extra costs for carriers as the transportation cost is expensive for the drivers to travel from a destination to another destination (Benks, 2017).

Another reason is because retention in ports of certain container handling or processing activities such like container stuffing or stripping. According to (Sgouridis, 2003), there are another problem that existed in freight transportation which is poor management of rail and road loading/unloading activities in ports due to different authorities involved, different priorities of the organizations involved that causes argument and confusion, and competitive attitude in the organization. “Massive traffic congestion is lasting for hours at Westport as it is one of the Malaysia’s main trading gateway which it does have impact on rating of Malaysia in the ease of doing business” Deputy President Soo Chee Yeong from Association of Malaysian Hauliers (AMH) to the reporters (Ching, 2017). This are the current situation of freight transportation in Malaysia as the challenges identified for specific region and the problems need to be fixed so that the sector prepare for an efficient and sufficient coverage of the needs in the future of Malaysia in terms of freight transport.

Overall of these current issues will affect the whole performance of the freight forwarding companies. Productivity decreases along with the efficacy and this will affects the profit earns by the freight companies which they faced huge losses in spending a sum of money to settling the problem of transporting those goods to the end users. The President of International Malaysian Society of Maritime Law (IMSML), Sitpah Selvaratnam, said that both foreign and local institutions to facilitate maritime certifications, diplomas and post graduates courses to increases the confidence and reliance on local talents (Reserve, 2017). Malaysia has the infrastructure and wide capacity in place but the human factor is the lacking factor in relations of qualifications and competitiveness as freight is an international business and grouped with other parties from overseas countries. In the nutshell, this research is to develop TQM and ERP to overcome the dwell times and issues in management of freight forwarding sectors in order to enhance the quality performance.

## **1.4 Research Questions**

This research questions propose TQM and ERP to enhance the overall performance of maritime freight forwarding. The research questions will decide the finding in this research as well as research objectives. These research questions are:

- What is the relationship between ERP and quality performance of maritime freight forwarding?
- What is the interrelationship between TQM and ERP implementation?
- What is the relationship between TQM and quality performance of maritime freight forwarding?

## **1.5 Research Objectives**

This study aims to determine the role of TQM and ERP in improving maritime freight forwarding sector. These objectives are constructed as the followings:

- To investigate the relationship between ERP and quality performance of maritime freight forwarding.
- To find out the fundamental relationship between TQM and ERP implementation.
- To determine the relationship between TQM and quality performance of maritime freight forwarding.

## **1.6 Significant of Study**

This research has the contribution to the future research in maritime freight forwarding sector. The research related to the maritime sector as the maritime support services take place to facilitate the industry by keeping it running consistently and improving the performance of this sector. Many manufacturing and service industry had been implemented TQM for a long period of time but it have not been implement in maritime support services. There are research that implement TQM in maritime sector involving logistics at other countries, thus, TQM is suggested to apply in maritime support services especially in freight forwarding industry as they play the important role to keep the industry generate high performance and avoid the dwell times to occur frequently. This research also proposes a relationship between TQM and quality performance of freight forwarding towards maritime support services. TQM always involved in organizational performance which it did not stated before it in Malaysia. This attempt will specify further justification on the elements of TQM that connecting with the overall performance of maritime freight forwarding industry. Moreover, freight forwarding should know the knowledge of ERP that can greatly impact in this sector as it enhances productivity and development. ERP is suggested act as role of mediator in maritime freight forwarding to make the overall performance able to perform well in maritime sectors of Malaysia.

## **1.7 Scope of Research**

The research will focus on maritime freight forwarding in maritime support services of Malaysia. Selangor Freight Forwarders & Logistics Association (SFFLA) will be the core focus of this research as it have 670 company members in maritime sector. The Federation of Malaysian Freight Forwarders (FMFF) have over 1091 members currently and SLFFA members stands 61% out of 1091 members which giving the researcher opportunity to distinguish whether TQM and ERP are able to implement with maritime freight forwarding. Freight forwarders act as an intermediary that organizes shipments from manufacturer or goods to a market, customer or towards