

INCREASE EFFICIENCY IN LOGISTIC OPERATION BY IMPLEMENTING
INTEGRATED ONLINE SYSTEM FOR FAZS'S TRADING AND SERVICES

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INCREASE EFFICIENCY IN LOGISTIC OPERATION BY IMPLEMENTING
INTEGRATED ONLINE SYSTEM FOR FAZS TRADING AND SERVICES

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DEDICATION

Alhamdulillah to Allah for giving me live and strengths to live in this world. Dedication to my wife who sacrifice a lot during my journey of completing this thesis. To my kids as this thesis will inspire them achieving the greatness in their life. To my parents who always supporting me with wholeheartedly.

To all disable people (Orang Kelainan Upaya) who always be my big family as I also one of them. To Liverpool Football Club which their *You'll Never Walk Alone* philosophy uplift my spirit during hard time.

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ABSTRACT

This study involves an integrated online system implementation for 3rd Party Logistic company to improve its operation efficiency by implementing integrated online system. Development of information systems can be regarded as activities that produce solution and in this case, development of information systems can be a valid method of intervention. This research is using a sample of feedback on questionnaires ranging from managerial level, operation staff and client of FAZS Trading and Services. As a new startup of SME (Small Medium Enterprise), this company need to adopt information system in order to grow and expand the business as last mile logistic provider. This research starts with a description of the company and problems finding to find the root cause of order and delivery process using manual method and communication (Manually Produce Excel Report and WhatsApp as tool of communication). Research design which using mixed method for qualitative and quantitative in pre and post intervention. The intervention by implementing information system using Software Development Life Cycle which to eliminate discrepancies in using manual process. Results of the intervention were analysed in order to proof the intervention meet the research objectives criteria.

ABSTRAK

Kajian ini melibatkan pembangunan sistem dalam talian bersepadu bagi meningkatkan kecekapan operasi di syarikat Logistik Pihak Ketiga (3PL). Pembangunan sistem maklumat boleh dianggap sebagai aktiviti yang memberi kesedaran dan dalam hal ini, pengembangan sistem maklumat dapat menjadi kaedah intervensi yang sah. Kajian-kajian ini menggunakan sampel maklum balas mengenai soal selidik mulai dari peringkat pengurusan, kakitangan operasi dan pelanggan FAZS Trading and Services. Sebagai permulaan baru PKS (Perusahaan Sederhana Kecil), syarikat ini perlu menggunakan sistem maklumat untuk membangunkan dan mengembangkan perniagaan sebagai penyedia logistik terakhir. Penyelidikan ini dimulakan dengan penerangan mengenai syarikat dan penemuan permasalahan untuk mencari punca ketidakcekapan proses pesanan dan penghantaran dengan menggunakan kaedah dan komunikasi manual (menghasilkan laporan Excell secara manual dan aplikasi Whatsapp sebagai alat komunikasi). Reka bentuk penyelidikan yang menggunakan kaedah campuran untuk kualitatif dan kuantitatif dalam intervensi pra dan pasca. Campur tangan dengan melaksanakan sistem maklumat menggunakan kaedah Kitaran Hidup Pengembangan Perisian yang dapat mengeliminasi proses manual. Hasil intervensi dianalisis untuk membuktikan bahawa intervensi memenuhi kriteria objektif kajian.

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LIST OF ABBREVIATIONS

SME	Small Medium Enterprise
NDD	Next Day Delivery
SDD	Same Day Delivery
PNP	Pack and Post
B2C	Business to Client
LSP	Logistics Service Provider
3PL	Third-Party Logistics
MVP	Minimal Viable Product
SDLC	System development Life Cycle
UAT	User Acceptance Test
SRS	Software Requirement Specifications
DO	Delivery Order
EOA	Expert Opinion Analysis
TAM	Technology Acceptance Model

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Businesses and business systems are increasingly becoming dynamic as the world is shifting to a globalized and digital era. These changes shaped the business world, increasing demand for specific services that are not popular in the traditional business environment. Companies such as logistic providers have become vital due to globalization, and many business entities rely on them to order and deliver products. However, as the need for logistic companies' increases, so does the need for efficiency to streamline the ordering and delivery process. As such, logistic companies need to integrate systems that will increase their operations' efficiency, enabling other entities that rely on their services to conduct uninterrupted and profitable business and transactions.

This first chapter of the study comprises eight subtopics that seek to present the case under investigation and set the background of the entire research. These subchapters include information about the case company, statement of the problem, research objective and research questions, the researcher's role, research ethics, importance of the proposed study, the definition of terms, and a conclusion, which will provide a summary of the entire paper.

1.2 Problem Statement

Outsourcing logistics has become an integral part of the business world in Logistic Service Provider (LSP), by offering services to customers. As a result, LSPs are considered the essential services, making efficiency and important aspect in their operations. According to Vivaldini et al. (2012), LSPs play a critical role in the movement of raw material and goods from producers, manufacturers, and finally to consumers. However, Vivaldini et al. (2012) note that several logistic companies lack efficiency due to outdated processes and lack of integrating technology. The researcher state that technological advancements and vehicle tracking systems are some of the logistic management approaches that can improve logistic services. They further state that increasing efficiency and streamlining information allows LSPs to respond to consumer needs in real-time. In recent years, the share of overall retail sales accounted for by internet shopping has increased rapidly (see **Figure 1.1**)

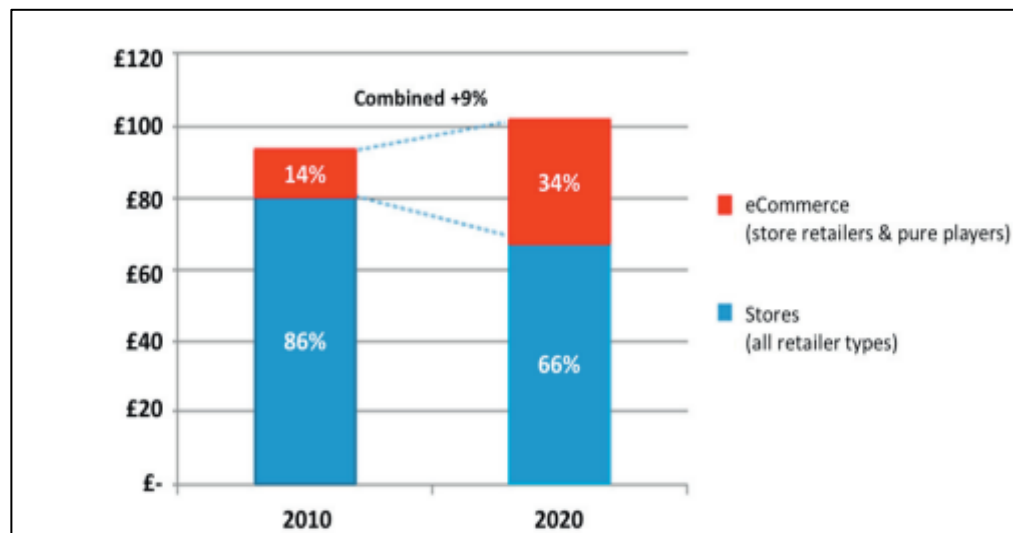


Figure 1.1: Global sales forecast by store and e-commerce (Billion Pound)

This study involved with FAZS Trading & Services company. FAZS Trading and Services is a startup company, whose processes are still underdeveloped, thus cannot affect its operations. The company's ordering and delivery process currently rely on manual operations such as telephone, excel spreadsheet, and messaging. As such, the company fails to meet the needs and expectations of its customers. However, a

combination of technology with its current practices can become a distinguishing feature of the company by improving its ordering and delivery system. Leading emerging logistics markets in 2021 based on the Agility Emerging Markets Logistics Index presents Malaysia position 5 in the South East Asian Markets (**Figure 1.2**). However, the trend demonstrated in **Figure 1.3** shows a downward trajectory of the Malaysia’s logistics performance since 2014.

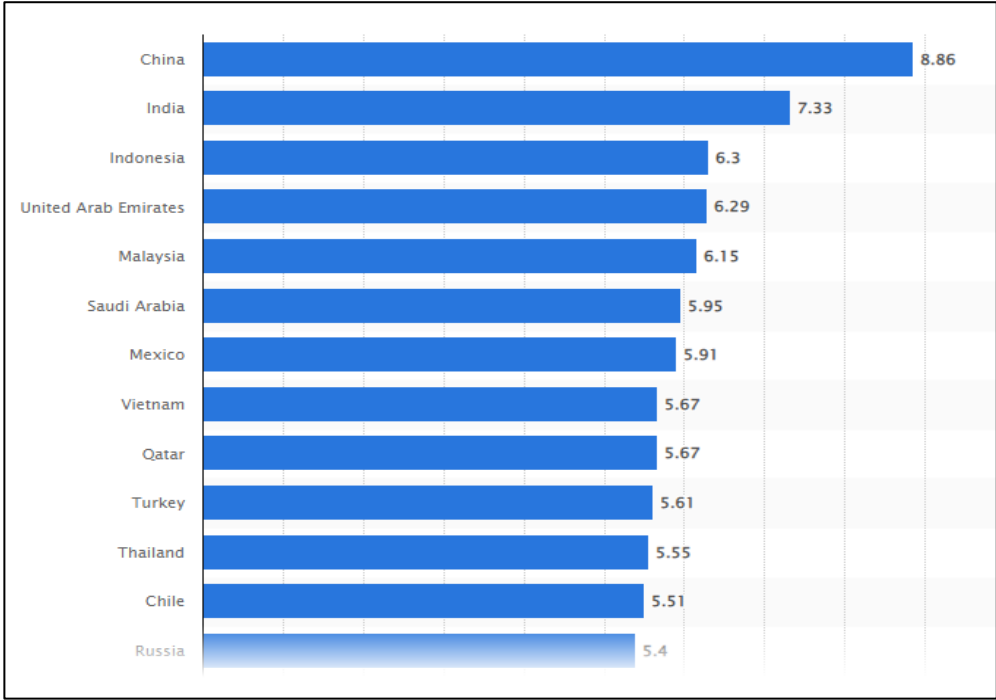


Figure 1.2: Leading emerging logistics markets in 2021 based on the Agility Emerging Markets Logistics Index

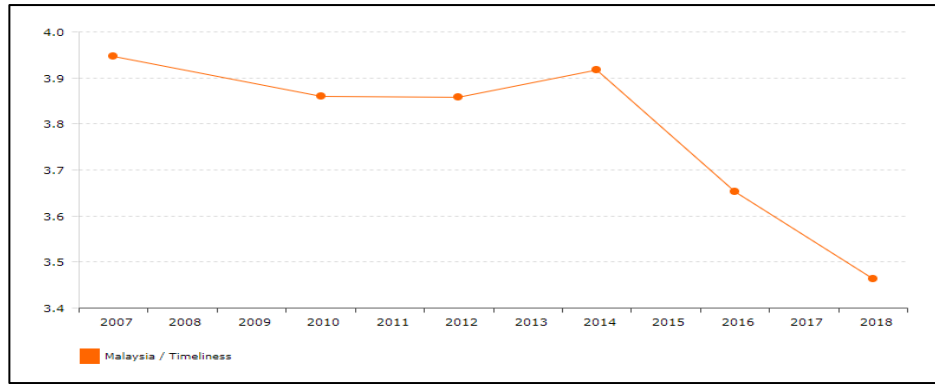


Figure 1.3: The logistics service performance (LPI) in Malaysia

1.3 Information About the Case Company

This section briefly explains the company information that will be used for this research. This includes the background of the company, SWOT analysis and organization analysis for the use of researcher during the study.

1.3.1 Background of The Company

FAZS Trading and Services company is a startup company that is founded under the logistic and supply chain industry. The company is based in Klang Valley and provides critical delivery services to different businesses in the region. FAZS is an essential company for businesses operating in Klang Valley since its services enable entrepreneurs, especially those that own Small and Medium-sized Enterprises (SMEs) to expand their outreach throughout the valley. Notably, FAZS helps businesses in Klang Valley address logistical challenges that have hindered business organizations in the region for several years. The company provides fast, efficient, and cost-effective delivery services.

Additionally, FAZS is capable of providing both bulk orders and delivery services. The company offers a multitude of services such as next day delivery (NDD), which involve delivering products within 24 hours of the next day. Same day delivery (SDD), which entails delivering products within 8 hours after customers books the service. Pack

and Post (PNP), which is packing, and delivery services provided throughout Malaysia. These three types of services offered by the company act as its pillar of conducting business because they make it flexible and readily available to execute and meet its customers' needs.

1.3.2 Swot Analysis

Swot analysis is used to identify the strengths, weaknesses, opportunities, and threats of a business. This analysis is crucial for a business to make decisions and it helps in strategic planning for the use of researcher during the study.

1.3.2.1 Strength

FAZS Trading and Services provides a 24-hour delivery service that is fast, efficient, and cost-effective. This company has a strong Business-to-Business (B2B) model. The business is offered in bulk as well as on an individual basis. They also offer a various selection of delivery options.

1.3.2.2 Weakness

This company is new to the logistics business and does not apply the B2C approach. The company does not have a properly functioning online client order and delivery system. The record collection is poor and insufficient.

1.3.2.3 Opportunity

The logistics industry is expanding rapidly. Small and medium-sized enterprises (SMEs) that operate in business-to-consumer (B2C) processes have the potential to grow their businesses. In Malaysia, 84.2 percent of the population has access to the internet. This business has good potential because it is high demand.

1.3.2.4 Threats

The record collection process is out of date and has a negative impact on the flow of product through the production process. It's difficult to find a potential customer.

1.3.3 Organizational Analysis

According to Mothilal et al. (2012), several factors affect the success of logistic companies. The researcher note that on-time delivery performance is a crucial success factor in enhancing the relationship between logistic companies and customers as well as enhances satisfaction and financial measures for profitability and growth. Furthermore, Mothilal et al. (2012) argue that skilled and professional services improve the operational measures of consumer satisfaction and profit growth by enhancing the breadth of service by a significant margin. Based on this analysis, logistic companies should ensure they streamline their services so as to guarantee customer satisfaction and enhance profitability.

FAZS Trading and Service company tapped into an increasingly growing industry since globalization, technology, and outsourcing have taken over the business world. A simple analysis of the company's business environment shows a lot of strengths and opportunities that when FAZS utilizes, can enhance profitability and growth. However, despite these opportunities, the logistics industry requires companies to have efficiency in the ordering and delivery process. Being a startup company, FAZS's systems and operations lack efficiency, which can have adverse effects on the company's performance, profitability, and growth. Additionally, the lack of efficiency lowers a company's competitive advantage. Thus FAZS can lose its current customers to competitors. As Erkan (2014) notes, enhancing system efficiency and employing cost-benefit measures in the logistics industry is vital because it increases a company's competitiveness. As such, the FAZS Trading and Service company should enhance efficiency in the order and logistic delivery process to gain a competitive advantage and guarantee growth.

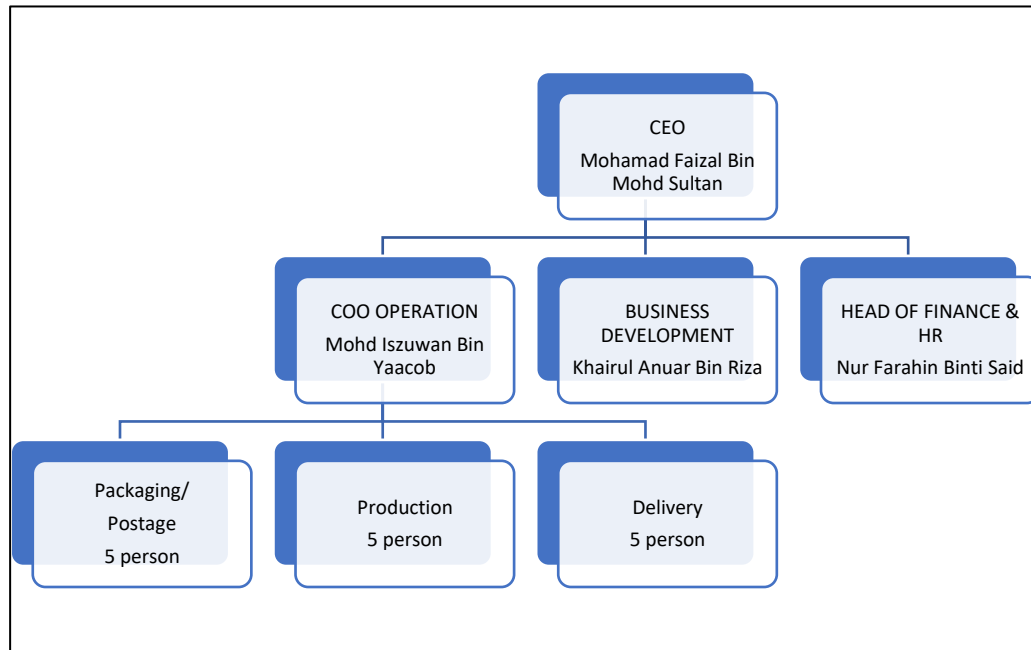


Figure 1.4: Organizational structure of FAZ Trading and Services

1.3.4 Problem Formulation

Being a startup company, this study adopted the Fishbone Technique to analyze the FAZS Trading and Services company's possible strengths and weaknesses. The company's problematic situation was then identified using the technique, as shown in **Figure 1.5** below. The research adopted the Fishbone Technique because it identifies a problem and its root cause (Loredana, 2017).

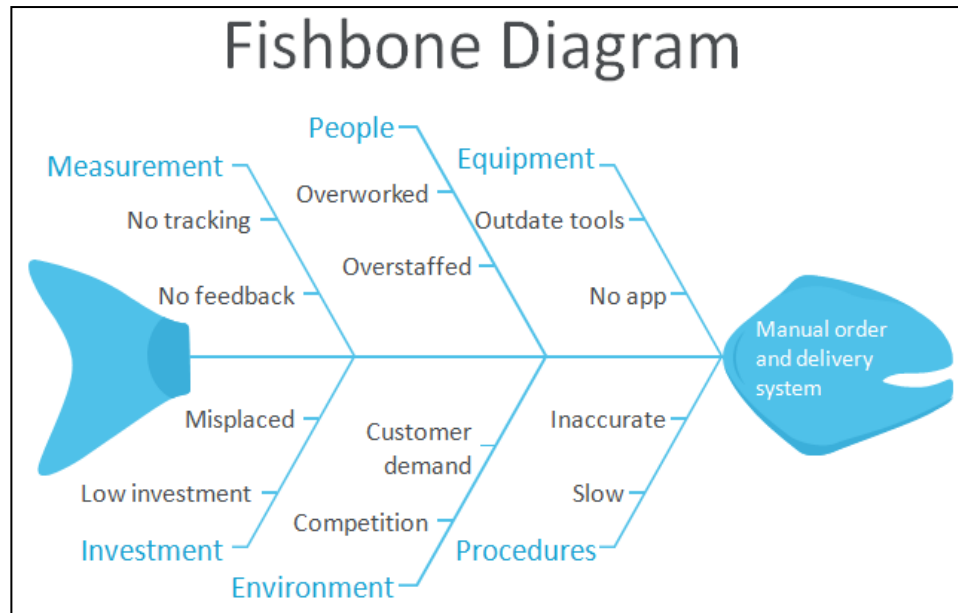


Figure 1.5: Fishbone Technique

As mentioned earlier, FAZS Trading and Service is a startup company. Therefore, its processes and systems have several weaknesses. The Fishbone diagram above was useful in diagnosing the company's problem since it analyses the company's internal and external processes and systems. As highlighted in the Fishbone diagram, the general problem facing FAZS Trading and Services Company is related to the fact that the organization uses manual ordering and delivery process.

1.3.4.1 Specific Problem

A manual ordering and delivery system is likely to be slow and inaccurate. It is also likely to be tasking to FAZS' staff and customers. Staff are expected to capture customers' information manually, fill in an excel spreadsheet, retrieved it when needed, fill the order, manually track the product, and message client. Performing such a process manually is not only tasking but also it is prone to errors and other inefficiencies. In essence, the lack of automation in performing the organization core functions forces FAZS Trading and Services to overwork its employees or hire a huge number of workers. The

table below presented a comprehensive review of the specific problem FAZS Trading and Services faces.

Table 1.1 Description of the finding of the Fishbone technique

Possible Root Cause	Discussion	Root Cause Y/N
Equipment		
Outdated tools	Tools like telephone, and Microsoft Excel, messaging are not outdated but the organization is using them in an outdated manner to perform its order and delivery business	Y
No application (app)	Lack of App makes it difficult for customers to order the	Y

	<p>organization services.</p> <p>Customers has to call, a process that extent the ordering process.</p>	
Procedure		
Slow	<p>Outdate utilization of tools and technologies imply the ordering and delivery business is conducted in a manual way. The process is thus slowed down. For instance, after the customer call, a representative has to take the call, manually</p>	Y

	input the order, and pass it to the next worker. The process is thus slow and long.	
Inaccurate	Manual approach is vulnerable to human mistakes and errors. A mistake made by one staff is passed on to other staff. Rectifying it can costly and time consuming	N
People		
Overworked	Manual process implies that employees will have to perform extra-tasks related to	N

	capturing, filling, tracking the order, and communicating the tasks	
Overstaffed	The organization must have extra-staff for it to perform most of the manual tasks. Automation would have cut down on tasks and human resource management costs	N
Environment		
Intense competition	The competitive environment is characterized by competitors such as lalamove and	N

	<p>bungkust that have an integrated online ordering and delivery system thus automating and making their process more effective.</p> <p>Competing with such firms when having a manual system may be difficult, if not impossible.</p>	
<p>Customers demand</p>	<p>Customers are increasingly demanding efficient, fast, and simplified ordering and delivery system. Such a system can only be achieved by using</p>	<p>Y</p>

	integrated online system.	
Investment		
Misplaced priorities	Instead of investing on hiring and paying more workers, the company should focus on acquiring latest technology.	Y
Low investment in latest tech	Currently the company does not have an integrated online system and mobile app due to low investment in the resources.	Y
Measurement		
Poor tracking	The organization engages in poor	Y

	tracking approach that is characterized by human inefficiency	
Ineffective feedback collection	The ordering delivery system is cumbersome and hence customer rarely issue feedback	N

1.4 Research Questions And Objective

The purpose of this section is to achieve both research questions and objectives through this research. Research questions refer to the 3 questions in 1.5.1 that relate to the research objectives.

1.4.1 Research Questions

- What usability and functionality should an integrated online system contain to influence order and delivery service positively?
- Which are the user's benefits should an integrated online system contain to influence order and delivery services positively.
- How is the integrated online system can attract more customers and still positively impact order and delivery services?

1.4.2 Research Objectives

The main aim of this study is to develop and implement an integrated online system that will increase the efficiency of order and delivery services. To achieve this objective, the researcher will pursue the following objectives:

- To enhance order and delivery services by developing and implementing an integrated online system which usability is in line with users input.
- To evaluate the intervention of using integrated system for order and delivery services that is focused on providing the positive benefits its users seek.
- To propose a potential intervention of using integrated system for order and delivery services which can attract more customers.

1.5 Researcher's Role

A researcher plays a pivotal role in organizing, implementing, and concluding a study. According to Creswell 2007, a researcher's role in qualitative or quantitative research is critical because they facilitate the collection of data and implement the analysis. The researcher's role in this study was to both an observer and participant because he served as an instrument of data collection and analysis. Additionally, Sutton and Austin (2015) posit that a researcher's role in a qualitative study is to attempt and access the feeling and thoughts of research participants and safeguard all the participants and their data despite collecting and analysing the data. Although the researcher's roles in this study might have encouraged some form of bias, they facilitated data collection and understanding the topic under study since the researcher was always in contact with the study participants.

1.6 Research Ethics

According to Rashid et al. (2019), one of the most central areas that research should focus on in the twenty-first century is ethical considerations. The researcher notes that initially, scientific research supported social ills such as racism among other atrocities that soiled its name and purpose. As such, every researcher is expected to observe ethical considerations while undertaking any form of research to prevent the occurrence of such atrocities. Based on the importance of ethics in research, this study took the matter of ethical consideration seriously, especially since the subjects used in the study were humans. The first ethical issue used in the research was informed consent. All participants were provided with forms that described the study's purpose and nature and were allowed to fill their names and sign once they agreed with the research terms. The researcher used participants who returned their forms with signatures, and those who failed to sign were excluded from the study. The second ethical consideration was respecting personal autonomy. All the research participants were offered freedom of choice, and none was enticed into performing an act against their will. The last ethical issue of the study was maintaining anonymity and confidentiality. Despite the participants agreeing to provide their information, only the researcher can access it and ensure that any data was handled with the utmost confidentiality.

1.7 Significance Of The Proposed Research

The findings provided by these previous studies are significant, in that they provide insights that one can use while developing an integrated online ordering and delivery system. The generality of the findings is unquestionable. Generality means that the findings can be applied to areas outside the research context. To illustrate, Elberzhager and Holl (2017) find that applying MVP to develop simple online application can be applied for FAZS Trading and Services' case to establish a non-complicated integrated online ordering delivery system. Nevertheless, each organisation is usually characterised by unique attributes. The uniqueness of the organisation can make it difficult for it to adopt and apply general knowledge. The general knowledge is, without a doubt, relevant.

However, it must be customised to suit the specific needs of the organisation in question. It can also be used as a basis for conducting further inquiries.

Some specific needs for FAZS Trading and Services Company were identified using the Fishbone technique. Therefore, the proposed study is relevant because it is focused on establishing a framework that will assist in developing an integrated online delivery and ordering system that will precisely address the challenges facing FAZS Trading and Services. Past studies will provide foundational knowledge. The foundational knowledge will act as a starting base, but eventually, this study will provide knowledge and information that perfectly fits with the FAZS trading and service company's case.

1.8 Definition of Terms

Definition of terms refers to the technical terms that is related to this research which namely as integrated online system, logistic provider services and efficiency.

1.8.1 Integrated Online System

To understand the meaning of an integrated online system, it is vital to define system integration or integrated system. According to Langford (2013), system integration combines or puts sub-component systems together to form one functional system. This process is crucial when dealing with multiple or complex systems because it enhances coherence by making these components to work together (Langford, 2013). Based on the definition of system integration, an integrated online system is a combination of sub-components into a single functional system that is connected by or controlled by a computer and can be accessed anywhere through the internet.

1.8.2 Logistic Service Providers

Logistic service providers (LSPs), or sometimes referred to as third-party logistics (3PL) are outsource entities that other businesses leverage to manage their transportation, distribution, and warehousing of their products. Logistic service providers obtain, produce, store, transport, and distribute, products and material in their right quantities from the source to the final destination (Sheikh & Rana, 2011). Companies use logistic service providers to send services and associated information from the source point to customers to ensure they meet and fulfil consumer demands.

1.8.3 Efficiency

Efficiency refers to the highest level of performance or a point when performance is at its peak while using the least amount of inputs to attain the highest amount of output. Efficiency reduces the wastage of resources such as time, energy, and physical materials while accomplishing the desired output. Based on this definition, efficiency in logistics refers to achieving the highest level of performance in the entire operational process. As Andrejić and Kilibarda (2013) note, efficiency in logistics entails effective processes that a business uses to conduct its operations such as warehousing, transportation, and distribution of products.

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