

Implementation and Challenges of Logistics Management for Electronic Commerce (E-Commerce) Transactions in Malaysia

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Abstract

Electronic commerce applications (E-commerce) include various things and are not limited to business affairs. E-commerce transactions and logistics are interconnected in the chain of sales, purchase of goods and services. Logistics management of E-commerce transactions also has challenges and is exposed to risk. This is because the transaction is not seen directly because it depends on the use of smart devices, tablets and laptops. Among the challenges and risks faced through E-commerce transactions are the risk of delivery, security, fraud on financial transactions and the quality of goods not as advertised. The study was conducted to evaluate the implementation and challenges of logistics management for E-Commerce transactions in Malaysia. The analysis will also assess the level of coordination of government agencies with industry players and logistics companies in dealing with the challenges of logistics management of E-Commerce transactions. The analysis is focused on the statistics released by the Ministry of Home Affairs and Consumer Affairs (KPDNHEP) which is a total of 24,150 complaints received related to E-commerce transactions for the period 18 March 2020 to 28 February 2022. The research method is carried out through

qualitative methods and analysis with reference to primary documents and secondary such as official reports, academic journals and online news. The results of the analysis found that the involvement of government agencies towards industry players and logistics companies is reactive in playing its role in dealing with the logistics management challenges of Electronic Commerce Transactions (E-Commerce).

Keywords: Electronic commerce (E-commerce), Logistics, Implementation and challenges, Coordination of government agencies, Industry players and logistics companies

1. Introduction

This article will analyze the implementation and challenges of logistics management in electronic commerce (E-commerce) transactions in Malaysia. Therefore, this article begins by explaining the term logistics, which revolves around development, revolution, and significance to economic development. Next, the analysis will focus on the concept and importance of E-commerce. Logistics generally involves planning the supply chain process, executing, controlling the storage and flow of goods, services, and all related types of information from the point of supply to the point of demand to meet customer demand (Shinta Wahyu Hati and Aisyah Juliati, 2019).

The rapid development of the internet and changes in usage patterns have encouraged users to purchase various products online. For new e-commerce enterprises, logistics is an important aspect of customer satisfaction (Wei Hong et al., 2019). The elements of logistics services related to customer satisfaction are convenience, communication, integrity, responsiveness, and reliability. The quality assessment structure, using exploratory factor analysis, shows a direct correlation between the quality of logistics services and the direct success of e-commerce. In-depth research has identified individuals or human resources as the main variables for measuring the quality of logistics services.

E-commerce has significantly changed the way buying and selling are done. In this way, sellers can meet the needs of buyers from afar, and buyers can also experience greater comfort and easier access when shopping online. Meanwhile, sellers or traders can increase their chances of reaching a wider market and can be accessed by all age groups. All strategic decisions in E-commerce are influenced by technology, including the visual design of online businesses, the quality of customer service, and website content.

It is important to understand that the success in E-commerce does not happen overnight, and it requires a long-term commitment by understanding customer needs. From the perspective of economists, e-commerce is seen as an alternative solution. This is due to the fact that in the E-commerce system, goods, services, and data are transferred either from company to company or from company to consumer. This chapter will delve into the importance, quality, and digitization related to e-commerce logistics.

2. Logistics

Logistics usually demands very high expectations in fulfilling orders, contracts, deliveries, and returns. Logistics relies on real-time data sharing, integration of goods flow, capital flow,

and information flow, as well as various management strategies. Modern logistics has become a key factor in improving the efficiency of material flows, reducing distribution costs across various industries (Ying Yua et al., 2016). At the same time, the recent developments in E-commerce also contribute to the expansion of the logistics market, encouraging the development of logistics-related technologies. Due to the rapid development and significant influence of E-commerce, logistics has undergone much evolution compared to a few decades ago. As evidenced by (Nabilah & Vikaliana, 2022) in the current economic development where industrial competition is rapidly evolving worldwide, businesses or organizations are constantly enhancing efforts to implement work efficiency and effectiveness. This factor is crucial in facing intense competition to maintain business operational continuity, especially those related to logistics. Logistics is a key performance area in transportation and warehousing activities. These activities encompass the movement of goods from one place to another with the aim of meeting needs according to the desired location, time, and conditions. Christopher (2002) states that logistics is a process that strategically manages the procurement, movement, and storage of materials, spare parts, and goods, along with the flow of information gathered through the organization's and its marketing methods in a way that seeks to profit the company, both now and in the future.

The logistics industry is constantly undergoing transformation towards digitalization. Continuously, new and innovative technologies are being created, one of which is to refine the delivery of products to customers in a short period. The information systems and logistics operations currently used cannot handle new challenges such as delivery quality, storage, and service product tracking (Erwin Raza et al., 2020). E-commerce, globalization, cyber threats, complex organizational structures, disruptive startups, and increasingly demanding business environments and customers drive businesses to adopt new technologies that enable them to enhance automation and digitization.

In the fourth industrial revolution, businesses can operate digitally by building dynamic and adaptable organizational structures. The main step is to address issues such as embracing the rapid changes in technology and implementing a digital enterprise model. To implement modern technology, an organization needs to enhance flexibility and the ability to adapt to challenges (Ricardo Moreira et al., 2023). Through the 4.0 industrial revolution, almost all organizations have begun implementing digitization in their logistics activities.

According to Kayikci (2018), the concept of logistics digitization is to enable transparency at all times from suppliers to customers, or in other words, the implementation of the transparency concept throughout the supply chain system. In addition, logistics must gain a broader vision to meet the needs of Industry 4.0 in a sustainable manner through the proper use of technology and by enhancing vertical and horizontal integration as well as all aspects among supply chain partners. However, in reality, the implementation of logistics digitization is not an easy task. Various situations need to be addressed by fostering awareness and readiness among multiple parties in the supply chain to collaborate in achieving it.

The total volume of E-commerce transactions has increased year by year, and E-commerce platforms have become an important channel for consumers. For example, China has also

shown stable growth in its E-commerce economy. Records in economic achievements show that China maintained a stable growth of 29.2% in 2019, reaching US\$162 billion. It exceeded US\$260 billion in 2020, and reached US\$310 billion in 2021 (Yi Jiang et al., 2021).

Logistics with solutions to the end recipient in E-commerce transactions occurring within the urban logistics system must be understood within the context of the urban logistics framework. The increasing demand for economic development and rapid E-commerce has further elevated the social standards and negative externalities of the urban logistics system environment. Among them, long-distance logistics distribution of goods within the city has become critical when viewed from the perspective of issues in the overall urban logistics development. Currently, Yi Jiang et al. 2021 found that logistics services with solutions for the last mile in E-commerce focus on the following:

- (1) Changes in consumer habits and behaviors influenced by long-distance delivery and aspects affecting people in urban environments and the quality of life of residents.
- (2) The cost of transportation in urban areas on distribution systems and optimization aspects that have the potential to make them more efficient.
- (3) Research on the impact of long-distance logistics on the development of technology applications in cities.

The assessment of each customer regarding the quality of logistics services is different. Therefore, the evaluation factors that meet the quality of E-commerce logistics services must be precisely determined. Based on previous studies, the need to integrate E-commerce features and establish a logistics service quality evaluation system is a key factor (Yi Jiang et al., 2021). Logistics delivery information can be easily obtained for companies or organizations to enhance resource allocation and improve all technical aspects. To implement this, companies or organizations need to provide more user-friendly information acquisition services through technological advancements. Logistics service providers should strive to provide comfort and offer good return services when necessary. Additionally, the process of receiving returns and exchanges should be simplified to the best extent possible, so that users can experience a more friendly and considerate service.

2.1 Electronic Commerce

When the internet was opened for commercial purposes in the 1990s, E-commerce emerged to dominate business. Businesses and online marketplaces like Amazon began selling online, directly to customers. Over the past ten years, store-based retailers have become multi-channel and eventually created omni (multi) channels (Asmare dan Zewdie, 2021). Brynjolfsson et al. (2013) state that global retail E-commerce sales in 2020 amounted to 4,280 billion USD, with an extraordinary annual growth of 22% over the past 5 years. In 2020, E-commerce accounted for 18% of total global retail sales and showed a twofold increase compared to 8.6% in 2016.

E-commerce has significantly changed the way buying and selling is done. Through E-commerce, traders can meet customer demands without the constraints of time, location,

and geographical factors. In addition, traders can expand their market without considering the limitations and constraints of demographic factors (Zennaro et al., 2022). E-commerce is an integrated system and differs from traditional commerce. The main difference in E-commerce is that the setting of key strategies relies more on technology. E-commerce is a highly popular and effective business practice in the digital era of this millennium. This increases the likelihood for traders to sell products and services online, expands the market for distant consumers, and provides convenience for customers. A study by Zennaro et al. (2022) found that the main advantages of E-commerce include cost optimization efficiency, 24-hour market accessibility, and the ability to reach customers worldwide. However, it is also necessary to pay attention to aspects of security, logistics, and good marketing strategies for success in E-commerce.

E-commerce is always expanding and developing as a sales channel across global markets, and its importance has increased and continues to do so. E-commerce has also changed the role of logistics in the supply chain. There are various studies linking key logistics research areas related to the implementation of E-commerce and key performance indicators, which need to be considered for each logistics research area, with special attention to sustainability aspects (Heitz, 2019). Outbound logistics encompasses many aspects that need to be considered in the implementation of E-commerce because it is a fundamental part of many E-commerce supply chains. Logistics in the context of E-commerce is characterized by layers of business structure and business capacity, high flow within the supply chain, various delivery options, and direct delivery to consumers. Factors and functions that influence outbound logistics strategies are:

- (1) Operations management.
- (2) Various ports and ships available.
- (3) Location of facilities.
- (4) Logistics strategy.
- (5) Information technology.
- (6) Human resources.
- (7) Layout of facilities.
- (8) Communication structure.

Shorter delivery times involve companies changing their management and inventory policies, anticipating higher delivery costs and not utilizing the maximum truck capacity, with some environmental impacts (Villamizar et al., 2021). With the development of the internet and information technology, the idea of purchasing services in the form of products such as food, skincare, clothing, and various other items has been sold online and has become an effective alternative. The method of online purchasing simplifies the buying process without bringing customers to the store like the conventional way (Nabilla & Mohd Hamdi, 2023).

Nowadays, almost every type of goods can be sold online. The concept of online business has encouraged society to sell various goods. The factors of business cost and business efficiency are the main keys to the implementation of online business. Online merchants do not have their own business premises, and they carry out deliveries and market products online. Some

traders deliver the goods themselves to customers according to their orders or through a delivery service. This system has many advantages, including saving costs and time.

E-commerce has transformed the process of industrial trade activities that influence and supported by technology (Anna Amalyah et al., 2020). As part of the digital economy, E-commerce platforms have become evident not only in developed countries but also in developing countries. Hsiao & Chen, 2013 found that the greatest variation in channeling strategies to overcome E-commerce development is a result of the competitiveness of manufacturers and strategies. Picot-Coupey et al. (2016) found two interesting facts through their research, namely focusing on the types of E-commerce channels and their evolution. The first finding shows that the challenges faced in transitioning to an omni-channel strategy are so numerous and diverse that it is impossible to evolve directly from multiple channels.

Secondly, the concept of E-commerce through the transformative channel process, the challenges faced by companies gradually evolve in terms of scope and priorities and can be categorized into two main categories, namely strategy-related challenges that consist of organization, culture, management issues, marketing, and resources. Additionally, development-related challenges consist of mixed retailing, information systems, and customer relationship management. In the development of E-commerce, it has not only evolved into a website that buys and sells services or exchanges with each other. E-commerce websites are now equipped with systems that can classify certain data so that the results can be considered for implementing special policies for the future.

The presence of various E-commerce platforms such as Lazada, Shopee, Amazon, eBay, and so on is expected to increase company revenue and add value to customers. E-commerce platforms can be accessed by various segments of society to post brief advertisements or obtain information about a product or service. E-commerce can be classified into various categories, among which is business-to-business where all parties involved are businesses or organizations. Business to customer where transactions occur between businesses and individual buyers. Customer to business or user to business, mobile commerce, intra-trade, business to employer, collaborative commerce, and so on (Joseph, 2008).

Business-to-business is far more complex than business-to-consumer, due to the large capacity and extensive growth patterns among all the categories mentioned above. Market studies show that business-to-consumer is still immature. This can be proven through previous study findings that show differences in sales volume and customer segments.

The benefits of E-commerce as summarized by Turban et al. (2008) are:

(1) Benefits to organizations:

Providing global access, cost reduction, supply chain improvements by reducing inventory and delivery delays, business can be conducted 24/7, customization is possible, sellers can specialize and make more money from niche markets, efficiency in procurement, customer service can be improved, and electronic products (such as mp3s) can be easily delivered, new products or updates can be introduced to customers faster, new business models like Google can emerge and increase transparency as

information related to the comparison of organizations, products, and others becomes easily available.

(2) Benefits to consumers:

A wide variety of products and services provide many options, cost savings due to high competition among online businesses because entering the online market is easy, hard-to-find items and spare parts for obsolete products are usually available, information is easily accessible, opportunities to participate in auctions, purchase unique items, and no local sales tax.

2.2 The Importance of E-commerce Logistics

The leader in E-commerce is the logistics service provider itself, which plays an important role in the development of E-commerce. Logistics service providers need to pay attention to the quality of the logistics services provided because this aspect will directly affect customer satisfaction and loyalty levels. According to Shinta Wahyu & Aisyah (2019), the quality of logistics services has a positive and significant impact on customer satisfaction levels when using the services. The quality of logistics services has a positive and significant impact on the level of customer loyalty. Customer satisfaction has a positive and significant impact on the level of customer loyalty.

From a social dimension, logistics in E-commerce enables delivery from one place to another and involves local and global cycle networks. The logistics cycle in E-commerce triggers product output, improves living conditions, reduces poverty levels, and offers livelihoods in different countries. (Akil & Ungan, 2022). Additionally, changes in the planning and management of E-commerce logistics in a sustainable manner must be supported by government policy. Matters related to regulations, restrictions, regional and national integration, investment in infrastructure, and the implementation of strategies that satisfy stakeholders and enable them to thrive in the long term while maintaining harmony between economic, social, and environmental aspects (Cano et al., 2022).

Local governments and companies operating in urban areas must focus final solutions on easily accessible collection points, discouraging home delivery, while in non-urban zones, it is better to encourage home delivery through established logistics operators. The logistics factors shown and explained theoretically influence the value for customers. This value is subjective and dynamic. For this reason, online sellers should develop a system to create sustainable value that is accepted by all parties. (Kawa & Swiatowiec-Szczepanska, 2021). This is driven by the probability factors that exist when a company or individual chooses the type of delivery, collection date and its changes, as well as the likelihood of returning the product. Based on these factors, customers decide on the method of order execution, reservation, and create a value chain in E-commerce logistics.

Some Malaysians are turning to E-commerce platforms to purchase daily necessities, food, and groceries. The demand for food such as vegetables, fruits, meat, seafood, and fish continues to increase, making the availability of fresh food a key driver for E-commerce stores and supermarkets. (Boxme, 2021). According to Tseng et al. (2018), sustainable

services are defined as products or services provided to customers to meet customer demand and significantly improve social and environmental performance throughout their lifespan, compared to traditional products or competitors.

The quality of delivery involving goods is challenging for certain orders, but it is beneficial for service firms to continuously provide high-quality products. Delivery quality is also a type of service quality provided by the company. Providing good delivery quality in services can offer a long-term competitive advantage (Melan et al., 2023). The quality of good logistics services leads to information and data among the user cycle that can build trust among customers.

The term "timeliness" relates to whether an order arrives at the customer's address on time. The factor of timeliness affects information and communication technology. (ICT). Third-party logistics in Malaysia is a core competency in business. (Omotayo & Melan, 2017). On the other hand, ICT plays an important role in daily activities in logistics. The main method to have extensive knowledge and practice about the term punctuality is to use and ensure the market at a specific time. Generally, timeliness refers to the amount of time that elapses between placing an order and receiving the goods. It can help reduce operational time through services due to complaints about late orders received, which can affect the overall operations of the company or business.

Digital logistics is a series of logistics activities that encompass the processes of planning, executing, and controlling the flow of goods or services efficiently and effectively. This process involves the flow of information from the point of origin to the point of use to meet customer needs, which is the transformation of information sources into digital format. (Rahmat & Aprilia Prastiana, 2023). Companies and organizations use digital media to increase brand awareness and inform the audience about the presence of products or services from the brand. The factor between digital logistics and digital marketing positively influences purchasing decisions to improve outcomes. Riyanto (2015) explains that the function of the internet in business is to provide information to online users in the form of emails, media, promotions, electronic surveys, bulletin boards, and mailing lists, so that users can participate proactively and interactively in designing, developing, marketing, and selling services or products. (Shinta Wahyu & Nur Anisa, 2021).

Online purchases through Shopee better meet customer demands as it provides logistics delivery services that deliver goods to customers. Customers are also free to choose between JNE and J&T Express logistics services. A study by Shinta Wahyu and Nur Anisa (2021) found that the delivery service more responsible for resolving customer delivery issues is J&T Company, accounting for 61% compared to JNE Company, which accounted for 39%, due to the policies practiced by J&T Company regarding the handling of damaged products or packages being more straightforward. The J&T company also does not make it too difficult and complicated to arrange a refund if the package sent by J&T is damaged. This is evidenced through the application system by filling out the form and submitting the form by contacting customer service via email, and the processing time for submission does not take long.

The study also found that the delivery of services in sending customer orders is faster through J&T with a rate of 74% compared to JNE with a rate of 26%. The J&T company uses cashless payment methods so that legal issues, whether domestic or international, can be easily addressed. For example, customs inspections are not very strict, allowing packages to exit quickly during the tax assessment process. A large amount of data from E-commerce logistics may bring knowledge and important information to influence decision-makers within organizations and businesses. Therefore, data analysis (Big Data Analytic) is another perspective that will emerge in the future to transform logistics into E-logistics for commerce. Data collection (Big Data) refers to a dataset with such large input or complexity that ordinary data processing technologies or approaches cannot handle it efficiently and effectively.

The increasing popularity of E-commerce logistics is based on information technology factors. It plays an important role in enhancing the efficiency and effectiveness of supply chain management (Yu et al., 2016). In the next century, technologies such as the Internet of Things (IoT), Big Data Analytics, and cloud computing may be adopted to enhance E-commerce logistics in terms of system levels, operational stages, and decision-making stages that could be real-time and smart in the coming decades.

In future developments, the development of E-commerce logistics should take into account the level and position of logistics service classes based on the current performance of the company or business. For example, the company IKEA divides its products into high-flow and low-flow categories based on product circulation, while the company Home Depot adopts different delivery methods according to the channels for its products based on circulation and product size. The JingDong company classifies its service categories primarily based on regions rather than product characteristics, and Amazon likes to divide customers into different service groups. Information such as inventory levels and product types can be shared and displayed together. It allows companies to receive orders or manage deliveries better using their supply chain business model.

3. Methodology

This research uses qualitative methods through literature review, interviews with relevant informants, observation, and document analysis as reference sources. The analysis is conducted with reference to the service-dominant logic (S-D Logic) framework, which considers customers as value creators in their interactions with product and service providers. It views all interactions in the economy, including product purchases, as service-to-service interactions. According to Vargo and Lusch (2004), the dominant logic focuses on interactions between producers, consumers, and collaborators in the supply network, as well as value creation as parties that co-create value through collaborative processes.

This study has used a qualitative design. The use of this design is intended to delve further into the experiences of study participants consisting of students of higher learning institutes, civil servants and members of the public with the status of Malaysian citizens. Through qualitative research, the researcher will be face-to-face with the study participants and have the opportunity to self-assess the reactions shown by the study participants through emotions

born either verbally or in body language. The study participants also consisted of well-known companies related to logistics operators in Malaysia. Two companies have been selected in order to obtain relevant data from the company's manager. The character or criteria of the respondents from the logistics company is set by the researcher to obtain precise and accurate information. A study with a qualitative design does not require a lot of data collection but the researcher will try to get quality information with a small sample size (Azizah Hamzah, 2010). This study has focused on 15 participants who have met the criteria required in this study. The findings of the study are also said to have reached saturation level with interviews with 15 participants.

4. Discussions

In developing countries like Malaysia, the main barrier to E-commerce involvement is the attitude of individuals running businesses (Ng, 2000). Business companies in Malaysia tend to be followers rather than pioneers or leaders in E-commerce investment. More and more individuals are afraid of facing failure and some are hesitant to invest in E-commerce because it is an unknown space and opportunity (Ng, 2000). In Malaysia, the implementation of E-commerce has not yet been fully realized. Geographical factors in certain areas still need to be addressed in terms of internet line development. For example, in rural areas either in West Malaysia or East Malaysia. In the hospitality service, only 20.5% of companies or organizations are involved in e-business.

According to Ainin and Noorismawati (2003), and Norhayati (2000), the lack of successful stories and promotions by click-and-mortar companies (a combination of physical and online businesses by one company) in Malaysia is the main reason traditional businesses are reluctant to start E-commerce transactions. Through the study by Ainin and Noorismawati (2003), it was found that the stimulation and practice of E-commerce among Small and Medium Enterprises (SMEs) in Malaysia, for example, revealed that 79% of respondents agreed that "the lack of E-commerce success stories" is the primary barrier to E-commerce adoption. Other barriers include "lack of knowledge in E-commerce" (72.6%), "low internet access among buyers" (72.2%), and "lack of knowledge about the potential of E-commerce" (69.6%).

To be competitive, business companies in Malaysia must act swiftly to the changing business environment. They must seize opportunities and take risks to transform the internet space for business within the internet network (Intan Salwani et al., 2008). Although many studies on E-commerce have been conducted in leading countries, Austin (1990) argues that theories developed in the context of mature markets will not be suitable for developing markets.

Due to this matter, a study was conducted to examine how the implementation of E-commerce affects business performance. The focus of the study is not on whether to use E-commerce but on how to use E-commerce profitably with the aim of encouraging newcomers in E-commerce. The results of the study can help click-and-mortar companies identify current issues in their E-commerce positioning and provide useful information to comply with regulatory bodies related to legislation.

According to the International Data Corporation (IDC) Malaysia, the sales revenue generated by E-commerce in Malaysia recorded positive year-on-year growth, with \$105 billion and \$144 billion for 2010 and 2011 (IDC Malaysia, 2011). The growth in E-commerce is due to the rapid increase in the number of personal computers as well as the growth of WiFi services, broadband, and hotspots in Malaysia. This development has seen the emergence of a new group of users known as electronic users. E-consumers generally refer to buyers of goods and services through electronic systems such as the internet and other computer networks (Naemah dan Roshazlizawati, 2013).

This new group of users is increasing in number every year as online shopping has become a trend and a manifestation of modern lifestyle. A survey conducted by PayPal in 2010 on 400 customers who used its services for online payments showed that Malaysia spent RM1.8 billion on purchasing goods and services online (Nazrin, 2012). Time savings can be achieved through the implementation of E-commerce compared to purchasing through traditional methods. Shopping online does not involve face-to-face communication, and in most cases, sales contracts are not made on paper, which provides an advantage in terms of savings.

The benefits of E-commerce are diverse and depend on the goals of each seller and buyer. In fact, E-commerce brings many benefits to both merchants and buyers. For traders, online transactions bring higher efficiency, increased responsiveness, and reduced costs. It allows small companies and newcomers in the market to expand their business reach far beyond what was previously done face-to-face. Users or buyers also have the opportunity to benefit from a wider range of choices, increased availability of specialized products, more comprehensive product information, lower costs, and more responsive services (Naemah dan Roshazlizawati, 2013).

Overall, this medium of transaction has made the world a smaller place and has enabled businesses to operate 24 hours a day in an environment that appears borderless. The main concerns regarding the implementation of E-commerce in Malaysia include payment security, data protection, the validity and enforce ability of e-contracts, insufficient information disclosure, product quality, and the enforcement of rights (Paynter dan Lim, 2002). The way of shopping online is different from traditional transactions, as it has become more sophisticated, thereby exposing and increasing consumers' vulnerabilities to unfair trading practices. A user may face various problems, for example, in placing an order; the wrong item is delivered or there is no delivery at all even though payment has been made to the supplier via the user's credit or debit card. Additionally, users may also encounter issues where the ordered item is delivered, but when the user changes their mind and exercises their right to return, the supplier refuses to provide a refund (Naemah dan Roshazlizawati, 2013).

In Malaysia, there are different legislation's under the jurisdiction of various ministries that directly or indirectly regulate or affect the operation of online shopping. The main legislation governing E-commerce transactions is the Electronic Commerce Act 2006 (ECA) under the jurisdiction of the Ministry of Domestic Trade. (KPDN). However, the ECA does not contain provisions on how electronic transactions can be conducted in a secure and guaranteed

environment, which is essential for the protection of E-commerce users. Meanwhile, general laws regarding contracts and the sale of goods can be found in the Contracts Act 1950 and the Sale of Goods Act 1957. However, these pre-independence laws are somewhat outdated and have not yet been amended to align with modern business transactions. The main legislation regarding consumer protection in Malaysia is the Consumer Protection Act 1999. (CPA). The CPA could initially not be applied to any trade transactions conducted electronically, but this law was amended in 2007. Protection for E-commerce users has been further strengthened recently with the enactment of the Consumer Protection (Electronic Trade Transactions) Regulations 2012.

E-commerce analysis in Malaysia has been conducted by Global Data and states that the Malaysian E-commerce market is expected to grow by 24.7% in 2020. This analysis has been proven when the Department of Statistics Malaysia reported that E-commerce transactions surged by RM71.7 billion to RM268 billion in the second quarter of 2021 compared to RM196 billion in the first quarter of 2020. Malaysia is included in the Southeast Asian E-commerce market, driven by increased access to the internet, computers, and smartphones to enhance the convenience resulting from the development of the country's economy.

The application of technology that makes daily life easier has led to the innovation of various applications for online shopping and subsequently continues the continuity of the E-commerce concept in Malaysia. (Noraznida dan Siti Nurashidah, 2021). In addition, different social background factors also influence online shopping in Malaysia. A study by Nur Ain et al. (2021) shows that the majority are women who use online transaction services more frequently compared to men.

Previous research by Farhan Mat Arisah, Shamsul Azahari Zainal Badari, and Ahmad Hariza Hashim (2016) also showed that female customers prefer online shopping compared to male customers due to factors such as the flexibility of shopping time. If compared in terms of generational factors, younger generations, such as millennials, use E-commerce platforms more frequently than previous generations.

According to Ahmad Fariz Azri and Wan Nurul Karimah Wan Ahmad (2020), as stated by Phang (2016), although acknowledging the advantages of E-commerce and the internet in carrying out daily necessities shopping activities, the involvement and usage of Malaysians in online shopping are still low because there are groups who prefer to buy products in stores. This is due to the fact that this group prioritizes factors such as the need to touch or see something before purchasing the item. The stigma against doubt and the feeling of being more confident in prioritizing the quality of goods means they do not mind the convenience of online shopping.

Proof has been provided that traders and buyers benefit from using the internet as a source to obtain information about the latest products for sale (Rahim dan Husna Ahmad Dimiyati, 2018). Among them are competition in terms of price and also cost savings in advertising. However, the method of online shopping in this country has not developed rapidly even though most of the society has devices that use the internet and various applications that can make human life easier to meet the needs of living in today's increasingly busy world.

E-commerce in Malaysia has been gradually developing since the introduction of TMNET in 1996 (Abdolrazagh Madahi, 2015).

The researcher faces several limitations that will affect the results of this research. This study involves companies, customers and human resources involved with E-commerce logistics. Setting the time to get an interview session with the manager of the logistics company can be said to be delayed due to bureaucratic red tape that leads to the delay of the interview time. In addition, some respondents were indifferent during the data collection process. This can be seen through the body language shown by the respondents. Therefore, the honesty of the respondents in answering the questions from the researcher is likely to be disputed.

5. Conclusion

Overall, this article illustrates how E-commerce logistics management impacts the country's economic development, making it a national agenda and priority. At the same time, the analysis results also showcase the role of the government through the Ministry of Domestic Trade (KPDN), the Ministry of Transport (MOT), and the Ministry of Economy (MEA) as the main coordinating institutions of the national logistics sector.

According to Nur Ain et al. (2021), data from a study in January 2020 found that most Malaysians, ranging from teenagers to the elderly, totaling 61%, use applications to search for the products they want and shop with their phones. Factors related to buyers, such as more flexible purchases, saving time, saving money, and having many options to make comparisons based on comments and user feedback, are important for societal selection in implementing the concept of E-commerce. Although technology is rapidly advancing, the fourth industrial digital revolution is still limited to society in Malaysia, including traders and buyers, causing its presence to be underutilized. (Noraznida dan Siti Nurashidah, 2021).

Before the COVID-19 pandemic, some countries like Malaysia were quite slow in embracing the industrial revolution and were reluctant to engage in technology-related e-commerce. However, the COVID-19 pandemic forced this transformation, which in turn accelerated the digital transformation for both sellers and buyers. (Soto-Ascota, 2020).

The process of digital transformation during the COVID-19 pandemic has shown success in the adaptation of E-commerce. With the increasing need for a workforce related to health and safety, enhanced communication and cooperation between individuals and organizations, and the reduction of social distancing becoming catalysts for E-commerce. To achieve development at the level of globalization, it has been decided that e-commerce is among the main agendas for the recovery of the economic situation caused by the pandemic. Therefore, strengthening the network of cooperation between the government and the private sector in the field of digital infrastructure will support the ongoing digital transformation across all industries, especially in the context of E-commerce. Efforts to accelerate the process of E-commerce transformation in Malaysia are known as digital transformation in business activities. Business management using technology and seeking opportunities that can aid the business process opens the market to all levels of society.

Users have been using E-commerce platforms during the pre- and post-COVID-19 pandemic.

Shopee and Lazada are highly favored online shopping platforms in Malaysia. Lazada successfully broke the record for the longest sales period in twelve hours during the Lazada sale on 12.12 in 2020. According to Zainuddin, in 2020, Shopee recorded over 825 thousand sales and significant profits within one hour during the 12.12 sale. The sales figures on Lazada and Shopee are strong and sustainable examples of the digital transformation of E-commerce in Malaysia. These sales platforms encourage various chains that exist within the economic context to be participated in by all segments of society. For example, E-commerce platforms involve the demand and supply of goods, creating a circular cycle between couriers, producers, and distributors of goods in economic mathematics.

Participation in the gig economy has increased due to the COVID-19 pandemic. Those who work in this industry are known as giggers or part-time workers. The gig economy is a term that refers to a freelance environment where workers have the ability to work part-time or independently. In addition to being driven by flexibility in terms of time and work location, it also provides the freedom to choose profitable types of work and lucrative pay (Nuradli Ridzwan Shah et al., 2021). An example of the gig economy is online companies like Grab and Uber. In 2017, the gig economy became popular in Malaysia. At first, not many people wanted to become giggers. However, due to the pandemic, people were forced to try any job that could generate income. It turns out that the gig economy helped people survive during the pandemic.

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Authors contributions

Hidayatussarizal Sarmin & Mohd Iqbal Mohd Huda was responsible for study design and revising. Hidayatussarizal Sarmin & Mohd Iqbal Mohd Huda was responsible for data collection and drafted the manuscript and revised it. All authors read and approved the final manuscript, as well as contributed equally to the study.

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The authors have no competing interest to declare.

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No additional data is available.

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