

Challenges Faced By Logistics Companies Towards The Implementation Of Customs Modernization

Rimorin, Darlyn Joy M. 1, Mendiola, Zhyra M. 2, Postre, Samantha Armagne S. 3, Medina, Loushiene Mica M. 4, Vince S. Capil, CB 5, Ricardo S. Jimenez, ChBA, DBA, LPT, 6,

1 Institute of Business and Computing Education, Mabalacat City College, Mabalacat City, Pampanga, Philippines
20211.rimorin.darlynjoy.m@gmail.com

2 Institute of Business and Computing Education, Mabalacat City College, Mabalacat City, Pampanga, Philippines
20211.mendiola.zhyra.m@gmail.com

3 Institute of Business and Computing Education, Mabalacat City College, Mabalacat City, Pampanga, Philippines
20211.postre.samanthaarmagne.s@gmail.com

4 Institute of Business and Computing Education, Mabalacat City College, Mabalacat City, Pampanga, Philippines
20211.medina.loushienemica.m@gmail.com

5 Institute of Business and Computing Education, Mabalacat City College, Mabalacat City, Pampanga, Philippines
Vince16.capil@gmail.com

6 Research Management Office, Don Honorio Ventura State University
rsjimenez@dhvsu.edu.ph

Abstract: *This study investigated the challenges faced by logistics towards the implementation of Customs Modernization. A purposive-convenience sampling method was employed to select 15 logistics companies. Data were collected through a researcher-designed questionnaire and analyzed using descriptive statistics and Pearson's correlation coefficient. The results revealed that the most common challenges faced by logistics firms included improper lodgment, unavailability of in-charge staff, typographical errors, lack of information in documents, incomplete documents, outdated technology, and unclear communication. The findings also showed a strong positive relationship between the challenges faced by logistics companies and the expected benefits of Customs Modernization. This suggests that as logistics companies encounter more challenges, they are likely to experience greater benefits from the modernization process. Based on the significance of the study, the researchers made recommendations to benefit logistics companies, the Bureau of Customs, the government, and future researchers. By identifying the most common challenges, stakeholders can prioritize their efforts to address the most impactful issues first, ensuring they tackle the biggest obstacles hindering smooth implementation*

Keywords— *Modernization, Bureau of Customs, Government. Implementation*

1. INTRODUCTION

The shipping and logistics business has evolved significantly over time, with logistics first originating in the military domain and being adopted by corporations after World War II. With the rise in globalization, it was crucial for firms to secure proficient shipping and logistics services to achieve success. Prior to the 3rd century B.C., commercial activities involved local communities selling or exchanging goods. In the 3rd century B.C., sea transportation was faster, more cost-effective, and efficient than land-based methods. However, there were no standardized containers, and goods were packed into various sizes and placed below deck.

Modern shipping practices emerged in the early 20th century, with businesses relying on local transportation and uncomplicated supply chains. This simplified approach reduced logistical complexities and planning requirements. The concept of logistics originated from ancient civilizations like the Roman and Greek forces, with Rome having a specialized cadre called "logistakas" responsible for material allocation and transportation.

In the 1960s, businesses began incorporating logistics into their shipping operations, which included order fulfillment, production scheduling, product distribution, inventory management, storage, and customer support. Research has shown that logistics significantly enhances the efficiency and cost-effectiveness of shipping operations, enabling faster transportation of goods to customers.

The mid-20th century saw a shift in company priorities towards shipping and logistics, driven by globalization. Technological advancements like vehicles, trains, airplanes, and ships facilitated expedited transportation of goods, allowing businesses to distribute their products globally. Machinery, such as forklifts, was crucial in warehousing and item transportation. The expansion of businesses' customer reach led to the need for efficient and economical methods to deliver products to consumers.

The invention of metal shipping containers in 1956 by Malcolm McLean revolutionized the transportation sector, allowing businesses to transport and warehouse their products in large volumes. Today, various shipping container grades are used for different categories of goods, such as food.

In the 1980s, corporations began using computer systems to manage logistics and shipping operations. The internet in 1990 led to the use of spreadsheets and map-based interfaces to enhance logistical operations. Today, the shipping and logistics sector is heavily dependent on technology, enabling businesses to efficiently strategize, monitor, and arrange their shipments through a streamlined digital interface.

Supply chain management encompasses the entire product or service flow, from raw materials to end-user consumption. A comprehensive understanding of transportation, supply chain, and logistics technology is essential for a supply chain manager. The shipping and logistics sector, rooted in historical discoveries, utilizes shipping containers, machinery, and technology for global transportation. Today, shipping procedures are efficient and expedient, enabling delivery within 24 hours. The industry will continue to evolve with technological advancements.

The logistics sector assumed a crucial position in the Philippine economy by serving as a critical intermediary in the supply chain, facilitating the connection between enterprises and the global market. Mabalacat City, Pampanga, played a crucial role in facilitating trade and business. Nevertheless, the obstacles faced by enterprises operating in the logistics industry while interacting with the Bureau of Customs (BOC) had been hindering their ability to reach maximum effectiveness.

This study examined the complex challenges encountered by the logistics industry in Mabalacat City, Pampanga, towards the implementation of the Customs Modernization program. Due to the trends of economic globalization and offshoring production, today's logistics and supply networks are more complex and stringent than ever before (Ivanov and Dolgui, 2020). As a result, the challenges faced by logistics and supply chain management (LSCM) were also much higher, as they needed to support operations that had to be more efficient, effective, agile, resilient, and sustainable. One of the most obvious consequences was that today's supply networks were becoming more and more interdependent and interconnected for the purpose of collaboration, including vertical cooperation and horizontal cooperation (Pan et al., 2019).

One of the key trends that drove the need for reform in the Philippine customs system was the growth of e-commerce. E-commerce had led to a significant increase in the number of cross-border transactions, which had put a strain on the BOC's existing systems and procedures. According to a report by the Philippine E-Commerce Association (PECA), the e-commerce market in the Philippines is expected to grow from \$13 billion in 2022 to \$35 billion by 2025. This growth was being driven by a number of factors, including the increasing penetration of smartphones and the internet, the growing popularity of online shopping platforms, and the convenience of cashless payments. It was evident that Philippine customs system reform was crucial for e-commerce growth and job creation. The Bureau of Customs (BOC) digitized processes, integrated

with e-commerce platforms, and simplified regulations. However, more funding, collaboration with the private sector, and raising awareness of e-commerce and customs regulations were needed. With the right reforms, the Philippine customs system could transform into a world-class system, supporting e-commerce and the Philippine economy.

The growth of e-commerce put a strain on the BOC's existing systems and procedures. For example, the BOC's manual processes could lead to delays in clearing goods and materials, impacting the delivery time of e-commerce orders. Additionally, the lack of transparency in the BOC's processes made it difficult for e-commerce businesses to understand and comply with the requirements.

According to Joong-Kun Cho et al., 2018, e-commerce was one of the most important and rapidly growing sectors of the economy. It was also one of the main factors driving economic competitiveness. The growth of e-commerce was fueled by the rapid expansion of internet access and the increasing popularity of portable devices. Therefore, the growth of e-commerce was a positive development for the Philippine economy. However, it was important for the BOC to modernize its systems and procedures to keep up with the changing landscape. By investing in new technology, streamlining processes, and improving transparency, the BOC could help ensure that the growth of e-commerce benefited everyone.

The BOC MCP program was designed to address the challenges posed by the growth of e-commerce. By streamlining and automating customs processes and improving transparency, the MCP program would help make the Philippine customs system more efficient and transparent for logistics businesses. This trend was also seen in other countries around the world. For example, the World Customs Organization (WCO) recognized the importance of logistics and developed a number of initiatives to help customs administrations adapt the execution of this program.

According to Vorotyntseva, 2020, customs processes were intended to protect international trade logistics and supply chains from threats posed by smugglers, commercial fraudsters, terrorists, and potentially dangerous goods for life and health, while simultaneously streamlining trade processing with low-risk operations across all business capabilities. An automated customs system was deemed crucial for achieving this balance. We agreed that the Bureau of Customs Modernization Program (BOC MCP) was a positive step in addressing the challenges of e-commerce in the Philippines. By streamlining and automating customs processes, improving transparency, and reducing corruption, the MCP program would make the Philippine customs system more efficient and transparent for e-commerce businesses. This would boost the sector's growth and benefit the Philippine economy. The program aligned with the global trend towards more efficient and transparent customs systems, as recognized by the World Customs Organization. It also improved the lives of ordinary Filipinos by making it harder for criminals to operate.

One of the main objectives of the BOC MCP program was to streamline and automate customs processes. This would help reduce the time it took to clear goods and materials, benefiting both e-commerce businesses and their customers. Another objective of the BOC MCP program was to improve transparency. The BOC's procedures could be opaque, making it difficult for businesses to understand what was required of them. The MCP program aimed to make the BOC's procedures more transparent and easier to understand, thereby reducing delays and additional costs for e-commerce businesses.

As stated by Sakyi, 2019, streamlining customs formalities for imports, exports, and transit of goods has multiple benefits, including increasing trade activity, reducing bureaucratic red tape and expensive delays for traders, and lessening administrative costs at the border. Repeated studies have shown that improvements using trade facilitation measures have comparatively greater positive effects on trade flows than reductions in tariff barriers. Additionally, increased trade activity has a positive correlation with increased income/growth and reductions in poverty and inequality. It is evident from Sakyi's research that trade facilitation measures can significantly boost trade activity by streamlining customs formalities and reducing bureaucratic red tape, leading to increased investment, job creation, and economic growth. Trade facilitation also helps reduce poverty and inequality by making goods and services more affordable for consumers and businesses.

The BOC MCP program is also designed to reduce corruption, which can further complicate the process of clearing customs and make it more difficult and expensive for businesses to import or export goods. The MCP program will implement a number of measures to reduce corruption, such as increasing transparency and accountability within the organization. The BOC MCP program is a positive step towards modernizing the Philippine customs system and making it more efficient and transparent for e-commerce businesses.

According to Boudreaux (2018), the negative effects of corruption include reduced economic growth, lower investment, and eroded trust in government officials, creating an institutional environment that pushes entrepreneurs from productive to destructive activities. Corruption also affects industries differently, as some are better situated to profit from it than others. Corruption not only lowers economic output but also shifts resources toward some industries and away from others. Corruption can indeed destroy economies, societies, and even individuals. It is important to support openness and responsibility in business and government by reducing corruption.

By streamlining and automating customs processes, the MCP program will help reduce delays, lower costs, and make it easier for e-commerce businesses to operate. This will have numerous benefits for the Philippine economy, making it easier for e-commerce businesses to import and export goods, boosting trade, creating jobs, and making the Philippines a more attractive destination for foreign investment. The BOC

MCP program is a win-win for e-commerce businesses, their customers, and the Philippine economy as a whole.

2. REVIEW RELATED LITERATURE

Rajagopal (2018), a study on competitive logistics capabilities in the Philippines, highlighted the importance of organizational flexibility and customer service. The Bureau of Customs (BOC) was often criticized for its lack of flexibility and poor customer service. Investing in these capabilities could improve organizational performance and position logistics companies better to handle BOC challenges. To overcome these challenges, companies could invest in technology, cross-train employees, develop relationships with BOC officials, provide training on regulations, and regularly review operations. This investment in competitive logistics capabilities could enhance customer service.

The Philippines' logistics industry faced challenges with the Bureau of Customs (BOC), including an inefficient customs clearance process. This led to delays and increased costs for businesses. Additionally, the BOC lacked necessary infrastructure and resources to efficiently clear high volumes of imported goods, causing delays and congestion at ports and airports. These issues could hinder the smooth functioning of the logistics industry in the Philippines (World Bank Logistics Performance Index, 2022).

According to Aravindaraj and Chinna (2019), a contemporary on recent development activities and challenges in the logistics sector in India revealed in his article that the majority of the logistics sector in India was unorganized, which was nearly 90%. And it was also said that the government of India had spent approximately 14% on logistics compared to other developed countries. This article also focused on various measures taken by the Government of India to boost the domestic logistics sector in India and revealed the major challenges faced in the logistics sector in India. Despite these challenges, the logistics sector in India was poised for growth. The growing e-commerce sector and the government's focus on infrastructure development were expected to drive demand for logistics services. As the sector grew, it was expected to become more organized and efficient, leading to lower costs for businesses and consumers.

Ojadi (2020) highlighted the importance of cargo dwell time in international logistics as a key indicator of port efficiency. As trade progressed, customs port administration processes, including pre-arrival and post-cargo clearance, became crucial for strategic economic parameters. Challenges in logistics operations included inefficiency, delays in customs clearance, lack of transparency, and corruption. These issues could increase costs in warehousing, inventory, transportation, planning, and budgeting, while also adding significant costs to logistics operation.

The Bureau of Customs implemented the Philippine Customs Modernization Program (PCMP), supported by the World Bank Group, to modernize the country's customs

administration. The program aimed to streamline operations, automate procedures, and reduce clearance times and costs for importers and exporters. It also aimed to improve predictability and transparency, enhance border security, and boost the Philippines' competitiveness as a trading nation. This was expected to attract foreign investment, create jobs, and boost economic growth (Bureau of Customs, 2021).

Bachár and Makyšová (2019) emphasized the importance of streamlining logistics processes to gain a competitive advantage in changing market conditions and customer demands. They emphasized the need to monitor and evaluate individual logistic indicators at every stage of the process, as each logistics element contributed to efficiency. They also emphasized the importance of adaptability, data-driven decision-making, and a holistic view of logistics processes for maintaining a competitive advantage in a rapidly changing business landscape. Continuous improvement and a keen eye on key performance indicators were crucial for modern logistics and supply chain management.

The World Bank had approved an \$88.28 million loan for the Philippines Customs Modernization Project, aiming to improve customs administration, reduce transaction costs, and enhance transparency. The project would automate the Bureau of Customs' procedures, develop a world-class customs processing system, and digitalize paper-based systems. The approval was seen as a positive development for the Philippines, as it could significantly improve the country's trade environment, boost the economy, and create a more transparent and liable customs system, potentially reducing corruption (The World Bank, 2020).

The study of Kozenkova (2020) discussed the strategic development of customs and logistics activities in the Philippines, focusing on factors like state policy effectiveness, risk management, foreign partner relations, Western sanctions, and the economic environment. The authors suggested optimizing management systems, modernizing business processes, and formulating strategic objectives to address challenges faced by the logistics industry and the Bureau of Customs. To improve efficiency, BOC could invest in technology, streamline procedures, and train staff. This collaboration could enhance customs operations in the Philippines, benefiting all stakeholders.

The research explored the International North-South Transport Corridor's development and its customs and logistics infrastructure improvements. It revealed commodity turnover patterns, cargo transportation volumes, and foreign trade cooperation prospects. The study also addressed challenges in the logistics industry, such as complex customs procedures, a lack of transparency, and corruption. Improving customs and logistics infrastructure could boost trade and economic growth by making it easier and less expensive for businesses to transport goods. Governments could simplify customs procedures, increase transparency, and combat corruption to create a more favorable environment for the logistics industry (Fedorenko, 2019).

According to Rose (2019), e-commerce referred to the exchanging of organization data, preserving business

relations, and conducting operational transactions via telecommunication systems. E-commerce was a versatile tool that could enhance the efficiency and effectiveness of business operations in multiple ways, from streamlined processes and improved data exchange to cost reduction and better customer relations. As technology continued to advance, businesses that embraced e-commerce were better positioned to thrive in the digital age.

Mansur (2019) emphasized the importance of consumer culture theory in the digital era for creative industries to compete effectively. They emphasized the need to increase consumer confidence for sustainable e-commerce development. The philosophy of technology acceptance could be incorporated into a comprehensive marketing strategy and company innovation to achieve a competitive advantage in the future. This approach could help businesses develop and innovate in the digital world.

According to the study by Riadi (2022), the adoption of e-commerce was one of the tactics used to promote the sustainability of small businesses and boost the economy in the face of a significant health crisis. Considering its size and its tech-savvy consumers, Southeast Asia's e-commerce market had expanded to become the largest in the region, making up more than half of the whole market. We, the researchers, believed that this seemed to say that the adoption of e-commerce was not just about business survival but also about helping to support the general economy in hard times. Small businesses could continue to run, serve clients, and possibly contribute to economic stability or recovery by embracing internet commerce.

Electronic commerce had opened doors to business organizations. It had provided them with opportunities to further improve and advance their prevailing market position by delivering an inexpensive, more operational distribution sequence for their products and/or services. E-commerce had a positive impact on business organizations. It had made it easier and more affordable for businesses to reach a global audience and deliver their products and services to customers. This had led to increased competition and innovation in the marketplace, which had benefited consumers (Abbas 2021).

A convenient interactive platform had been made available to businesses and customers thanks to the development of e-commerce platforms, which fundamentally broke the constraints of time and space. Customers found it easier to fulfill their social and shopping needs on e-commerce platforms, and consumer engagement behavior had grown to be a crucial driver of e-commerce platforms' success (Roy 2018).

Electronic commerce was thought of as phenomenal, as its powerful concepts and processes had profoundly changed the present. For many businesses, electronic commerce had become a priority because it had the power to change the way they did business. It had made it possible for businesses to reach a wider audience, sell their products and services more easily, and reduce their costs. As a result, e-commerce was essential for businesses that wanted to succeed in the 21st century (Nanehkaran, and Abdulaali 2019).

Capistrano (2023) suggested that while the use of information and communication technologies (ICTs) had increased, some entities still struggled to fully utilize their benefits due to differing adoption and appreciation of their potential. The study suggested a more directed approach to managing e-commerce technologies, considering the context, and collaborating with the government and logistics industry to educate stakeholders on ICTs' benefits and potential. Financial and technical support could also be provided to businesses to implement ICT solutions, reducing adoption costs and addressing challenges.

Galvez (2018) proposed using blockchain technology to address traceability and transparency issues in the food supply chain. Blockchain stored data chronologically, preventing manipulation and ensuring authenticity. It could also address logistics challenges, particularly with the Bureau of Customs (BOC). It provided a tamper-proof record of goods' movement, preventing counterfeiting, and ensuring compliance with regulations. Blockchain could also make transactions transparent, reduce corruption, and automate customs clearance processes. It could also verify shipping documents' authenticity and track duty payments, preventing fraud. Overall, blockchain technology had the potential to revolutionize logistics interactions.

According to Mirabelli and Solina (2020), Blockchain technology, initially introduced in the financial sector, had been applied in various sectors like healthcare, smart cities, energy markets, and government due to its reliability, transparency, and immutability. It could streamline customs clearance processes, increase transparency, and reduce costs. It could improve trade finance, shipment tracking, and customer service by providing real-time information. Blockchain could also enable new logistics solutions like decentralized marketplaces for transportation and warehousing services, enhancing efficiency, transparency, and security.

According to Sarmah (2018), blockchain was a significant technological invention that had transformed business operations by providing a transparent money exchange system. It revolutionized business operations by providing a transparent money exchange system, automating manual processes, reducing corruption, and improving visibility. It also provided a tamper-proof record of customs clearance, reducing errors. As blockchain matured, it was expected to see more innovative applications in the logistics sector, enhancing customer service and streamlining processes.

The study of Gao (2018) explored the growing interest in blockchain as an alternative to traditional centralized systems, focusing on its implementation techniques and applications in the Internet of Things (IoT), big data, cloud computing, and edge computing. It discussed challenges like security vulnerabilities, privacy leakage, and performance limitations. Blockchain technology had the potential to revolutionize the logistics industry, especially in dealing with the Bureau of Customs (BOC). TradeLens, a blockchain-based platform, used blockchain to create a

secure, transparent record of shipment data for real-time tracking and customs clearance.

Nganda (2020), conducted research delving into the effects of system automation on cargo documentation, customs release procedures, and payment systems to bolster customs efficiency at the port of Mombasa in Kenya. Drawing upon theories like technological determinism, the rational expectations theory of technology adoption, and the unified theory of technical acceptance and use, the study unveiled that heightened automation led to enhancements in customs operations. The results underscored the importance of stakeholders such as the Kenya Revenue Authority (KRA) and the Kenya Ports Authority (KPA) ramping up system automation to amplify effectiveness and streamline processes within the customs domain.

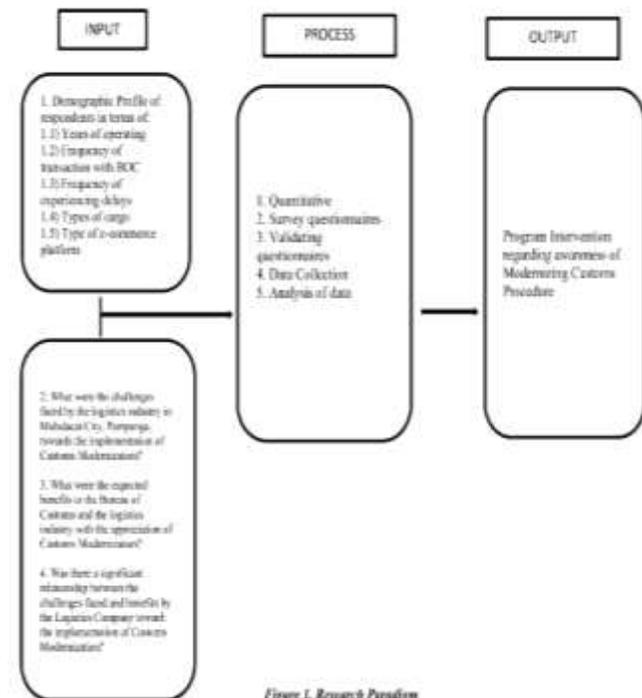
Grainger (2021), delved deeply into the transformative impact of modernized customs systems on the logistics industry. By emphasizing the pivotal role of such systems, Grainger illuminated how they effectively alleviate administrative burdens and substantially trim costs within the logistics sector. Through the implementation of streamlined processes and advanced technologies, modernized customs systems facilitate smoother transactions, expedite clearance procedures, and minimize bureaucratic hurdles. This not only enhances operational efficiency but also contributes to significant cost savings for logistics companies. Grainger's research underscores the crucial importance of embracing technological advancements to optimize operational effectiveness and competitiveness in the modern logistics landscape.

Eusebio (2022), tackled the challenge of delayed delivery of final duties and taxes within a private banking corporation, aiming to diminish customer complaints and address outstanding transactions. The team utilized various tools including process mapping, lean thinking methodology, workflow instructions, and time and motion analyses to devise a more effective procedure. Within a month of implementation, this revamped process successfully eradicated complaints, minimized the necessity for follow-ups, and slashed pending transactions by half. This streamlined approach not only saved time, effort, and expenses but also resulted in swifter delivery of products or services and heightened customer contentment.

Ware (2020), underscored the significance of transparent customs processes in optimizing supply chain operations and elevating customer service. The study accentuated the benefits of furnishing precise and timely shipment information in enhancing supply chain efficiency. Furthermore, it delved into the advantages of aligning trade procedures and embracing international standards through customs modernization endeavors, which facilitate smoother trade flows for logistics firms. By diminishing trade barriers and simplifying regulatory requirements, these initiatives foster a more conducive environment for international trade and logistics, ultimately showcasing a positive impact on the overall efficiency and efficacy of supply chain operations.

3. CONCEPTUAL FRAMEWORK

This study's skeletal framework employs the IPO model (input-process-output). The SOP is discussed in the input section. Researchers utilized survey questionnaires to gather information during the process phase. The output consists of the results obtained from the respondents.



4. STATEMENT OF THE PROBLEM

This study was conducted to comprehensively investigate and analyze the challenges to shed light on the objectives of modernizing customs procedures set by the BOC. Specifically, it aimed to answer the following questions:

Specific Problem

1. Demographic Profile of respondents in terms of:
 - 1.1) Years of operating
 - 1.2) Frequency of transaction with BOC
 - 1.3) Frequency of experiencing delays
 - 1.4) Types of cargo use
 - 1.5) Type of e-commerce platform use
2. What were the challenges faced by the logistics industry in Mabalacat City, Pampanga, towards the implementation of Customs Modernization?
3. What were the expected benefits to the Bureau of Customs and the logistics industry with the appreciation of Customs Modernization?

4. Was there a significant relationship between the challenges faced and benefits by the Logistics Company toward the implementation of Customs Modernization?

5. THE HYPOTHESIS OF THE STUDY

Null Hypothesis (H0)

There was no significant difference found between Challenges and Benefits.

Alternative Hypothesis (H1)

There is a significant relationship between the challenges faced and benefits by the Logistics Company toward the implementation of Customs Modernization.

6. SIGNIFICANCE OF THE STUDY

The Bureau of Customs (BOC), which enforced and facilitated the import and export of products, was an extremely important component of the Philippine economy. The logistics industry in Mabalacat City, Pampanga encountered a variety of difficulties. These obstacles might have put a company in a position where they faced greater costs, delays, and uncertainty. The main objective of this study was to identify and address the issues encountered by the logistics business in Mabalacat City, Pampanga, towards the implementation of Customs Modernization. This study was expected to benefit a wide range of stakeholders, including:

Logistics businesses in Mabalacat City, Pampanga. The study was expected to help the logistics industry by identifying and addressing the specific challenges they faced towards the implementation of Customs Modernization. This would lead to a cost-effective approach and would avoid delays and uncertainty for businesses, making them more competitive.

The BOC. The study was expected to help the BOC by providing insights into the challenges faced by the logistics industry. This information could be used by the BOC to identify areas for improvement towards modernizing its procedures and making the bureau more efficient and effective while catering to the needs of the logistics industry.

The Philippine government. The study was expected to benefit the Philippine government by providing insight into the challenges faced by logistics operators. This information could be used by the government to create laws, rules, and regulations that could make the flow of goods as smooth as possible, thereby making the Philippines more attractive to foreign investment and increasingly competitive in international trade. With these benefits, job creation and subsequent economic growth could occur.

Future Researchers. This study could encourage future researchers to investigate the topic further, serving as their first step towards pursuing similar studies in the future.

7. METHODOLOGY OF THE STUDY

This study will employ a descriptive correlational research design to investigate the challenges faced by logistics companies in Mabalacat City, Pampanga, towards the implementation of Customs Modernization. Researchers plan to utilize a closed-ended questionnaire to gather data on various challenges encountered during customs procedures, along with company-specific variables like size and industry type. This will allow us to identify potential correlations between the challenges faced and these variables, contributing to an in-depth understanding of the challenges and their specific context. Data analysis will involve frequency tables and statistical correlations to explore these relationships further.

8. INSTRUMENT AND PROCEDURES

The researchers plan to utilize a questionnaire as the primary data collection instrument. This questionnaire will be designed to gather information relevant to the study's objectives and will be obtained and modified to ensure its suitability for the target respondents in Mabalacat City, Pampanga. The questionnaire will consist of two parts designed for ease of use with checkboxes corresponding to the desired responses. The first part will cover the demographic information of the company, the type of cargo they handle, and their length of operation in the industry. The second part, on the other hand, will consist of questions that will help the researchers gain an in-depth understanding of the challenges faced by the logistics companies towards the implementation of Customs Modernization.

To ensure the questionnaire's dependability, a pilot test will be conducted. This will involve administering the questionnaire to 15 respondents from various companies outside Mabalacat City, Pampanga. The purpose of this pilot test will be to assess the reliability and consistency of the questionnaire's outcomes.

Table 1. Summary of the Reliability Test

Variables	Number of Items	Cronbach's Alpha	Reliability Level	Overall
Challenges	10	0.94	EXCELLENT	GOOD
Bureau of Customs	4	0.96	EXCELLENT	GOOD
Logistics	5	0.93	EXCELLENT	GOOD

The analysis conducted on the questionnaire's reliability is expected to produce favorable outcomes, encompassing variables such as challenges faced by the logistics industry, benefits of BOC (Bureau of Customs), and benefits of logistics companies. These findings will indicate consistent measurement of the intended constructs within

each variable. In summary, the questionnaire is anticipated to exhibit a commendable level of reliability, suggesting that the data collected from respondents will be dependable and consistent.

This format has been chosen to ensure ease of completion for the respondents and facilitate data analysis. Its suitability will be rigorously tested through expert evaluation (reliability and face validity) and plagiarism detection. Furthermore, survey questionnaires and Google Forms will be employed as an alternative data collection method, disseminated among various companies to enhance accessibility and engagement in the process.

9. RESULTS AND DISCUSSION

This chapter presents the data gathered from the survey and the researchers' analysis of the data to determine its significance. The answers to the questions presented in Chapter 1 were determined by using the methods of statistical analysis previously discussed.

Statement of the Problem

1. Demographic Profile of respondents in terms of:

1.1 Years Operating

Table 1. Frequencies for Year Operating

Year Operating	Frequency	Percent
1 – 5 years	26	63.41
11+ years	15	36.59
Total	41	100.00

The table above shows the demographic profile of the respondents, particularly, years of operating. As presented, 26 (63%) stated that the firm is operating for 1 - 5 years. 15 (37%) mentioned that their logistics firm is operating for 11 + years already.

1. 2 Frequency of transaction with BOC

Table 1.2 Frequencies for Transaction with BOC

Transaction with BOC	Frequency	Percent
Daily	41	100
Total	41	100

The table above shows the demographic profile of the respondents, particularly, frequency of transaction with BOC. As presented, it's clear that all logistic firms transacted with BOC daily.

1.3 Frequency of experiencing delays

Table 1.3 Frequencies for Delays

Delays	Frequency	Percent
0 -5 times	24	58.54
6 -10 times	17	41.46
Total	41	100.00

The table above shows the demographic profile of the respondents, particularly, delays with the BOC in the customs clearance procedure. As presented, 24 (59%) of them revealed that they experienced delay 0 – 5 times. On the other hand, 17 (41%) experienced delays 6 – 10 times.

1.4 Types of cargo

Table 1.4 Frequencies for Type of cargo

Type of cargo	Frequency	Percent
Air freight	27	66
Sea freight	3	7
E –commerce packages	11	27
Total	41	100

The table above shows the demographic profile of the respondents, particularly type of cargo handling. As presented, most of them are handling air freight cargo, having a frequency of 27 (66%). 11 (27%) are handling E – commerce package and 2 (7%) are handling sea freight cargo.

1.5 Type of e-commerce platform

Table 1.5 Frequencies for Type of e-commerce platform

Type of e-commerce platform	Frequency	Percent
Customs Clearance Portal	27	66
Online Trading Platform	9	22
Others	5	12
Total	41	100

The table above shows the demographic profile of the respondents, particularly the type of e-commerce platform use. As presented, 27 (66%) are using customs clearance portal. Meanwhile, 9 (22%) are using online trading platform and 5 (12%) are using other e – commerce platform.

2. What were the challenges faced by the logistics industry in Mabalacat City, Pampanga, towards the implementation of Customs Modernization?

Challenges	Mean	Interpretation
Improper Lodgment	1.62	Agree
Unavailability of in- charge staff	1.4	Disagree
Typographical error	1.4	Disagree
Lack of information in Documents	1.4	Disagree
Incomplete Documents	1.4	Disagree
Outdated Technology	1.3	Disagree
Unclear Communication	1	Disagree
Delays in customs clearance processes	1.4	Disagree
Overall Mean	1.3	Disagree

The table above shows the challenges faced by the logistics industry in Mabalacat City, Pampanga, towards the implementation of Customs Modernization. As presented, improper lodgment obtained the highest mean of 1.62, interpreted as agree, Unavailability of in- charge staff, Typographical error and Lack of information in Documents, obtained a mean of 1.4, interpreted as disagree. Outdated Technology obtained a mean of 1.3, interpreted as agree. Unclear communication obtained a mean of 1, interpreted as disagree. Lastly, Delays in customs clearance processes, obtained a mean of 1.4, interpreted as disagree. Overall, items obtained a mean of 1.3, interpreted as disagree. These data implies that most logistics industry are not experiencing the aforementioned challenges except for improper lodgment. In 2020, the Bureau of Customs implemented new penalties and additional charges for errors in documentation, false declarations, misclassifications, and understated goods declarations. This directive provided clarity on Sections 108 and 1400 of the Customs Modernization and Tariff Act, amending regulations governing the imposition of surcharges outlined in CAOs 01-2014 and 06-2014. Offenders faced fines of P5,000 for recurrent errors, along with a 250% levy on outstanding duty and VAT.

3. What were the expected benefits to the Bureau of Customs and the logistics industry with the appreciation of Customs Modernization?

Table 3.1 Benefits of BOC

Benefits (BOC)	Mean	Interpretation
Increased transparency in communication and regulations	1.71	Effective
Streamlining clearance procedures	1.71	Effective
Increased efficiency and speed of customs clearance	1.71	Effective
Improved trade facilitation	1.71	Effective
Overall Mean	1.71	Effective

by the logistics industry in Mabalacat City, Pampanga, towards the implementation of Customs Modernization. As presented, all items obtained a mean of 1.71, interpreted as effective. The data suggest that Increases transparency, streamlining clearance procedures, increased efficiency and speed of customs clearance and improved trade facilitation are reliable and they are all benefits to the Bureau of Customs.

Table 3.2 Benefits of Logistics

Benefits (Logistics Industry)	Mean	Interpretation
Strengthened Supply Chain Partnerships	1.71	Effective
Enhanced Data-Driven Decision Making	1.71	Effective
Improved inventory visibility	1.71	Effective
Reduced cost such as storage fees and transportation cost	1.71	Effective

The table above shows the expected benefits faced by the logistics industry in Mabalacat City, Pampanga, towards the implementation of Customs Modernization. As presented, all items obtained a mean of 1.71, interpreted as effective. The data suggest that Increases transparency, streamlining clearance procedures, increased efficiency and speed of customs clearance and improved trade facilitation are reliable and they are all benefits to the Logistics Industry.

Customs modernization emerged as a crucial aspect of international trade facilitation, greatly impacting stakeholders such as the logistics sector. Various studies have underscored its potential to lower transaction costs for logistics firms. For instance, we noted substantial savings in time and resources through streamlined customs procedures and automation. Similarly, Andrew Grainger (2021) highlighted how modernized customs systems alleviated administrative burdens and associated costs for the logistics industry.

4. Was there a significant relationship between the challenges faced and benefits by the Logistics Company toward the implementation of Customs Modernization?

Pearson's Correlations

	Pearson's r	p
Challenges - Benefits	0.90	< .001

The table above shows the relationship between the challenges faced and benefits by the Logistics Company toward the implementation of Customs Modernization, using Pearson's r correlation coefficient. As presented, it obtained an r value of 0.90, which falls on very high correlation, and a p value of less than .001. This entails that the more the logistic industry experience challenges, the higher they can expect benefits from custom modernization. Thus, the decision to reject the null hypothesis.

10. CONCLUSION

In conclusion, the study identified improper lodgement as the primary challenge in implementing Customs Modernization, causing delays and inefficiencies due to inaccuracies in document submission. Despite these issues, most participants believe that the modernization program offers significant benefits, such as increased transparency, streamlined clearance procedures, and improved trade facilitation. The study also found a strong positive relationship between the challenges faced and the benefits gained, suggesting that as challenges increase, the benefits from modernization become more pronounced.

11. RECOMMENDATION

By implementing these recommendations, all logistics companies can work together to address the challenges

associated with implementing customs modernization and embrace its full potential to benefit the Philippine economy. Based on the identified challenges and potential benefits for various logistics industries, recommendations are as follows:

1. For Logistics Businesses in Mabalacat City, Pampanga:
Allotted budget for training and continuing learning. Equipping employees with a thorough understanding of modernized customs procedures and being vigilant in electronic filing systems and new documentation requirements will minimize errors and delays during clearance processes. Research and development is also recommended.

Leverage technology. Utilizing automation tools and digital platforms can streamline internal operations and communication with the BOC, improving efficiency and reducing administrative burdens.

2. For the Bureau of Customs (BOC):
Allot a budget for technology infrastructure. Upgrading IT systems and adopting automation tools can expedite cargo clearance and improve operational.

Enhance communication and transparency. Providing clear and consistent guidelines on modernized customs procedures and regular updates on policies and regulations will minimize confusion and uncertainties faced by logistics firms.

3. For the Philippine Government:
Regular review and evaluation of trade regulations. Regularly evaluating and revising existing trade laws and regulations to align with best practices and international standards can facilitate smoother customs clearance and enhance the Philippines' competitiveness in global trade.

Promote trade facilitation initiatives. Collaborating with international trade organizations and neighboring countries on trade facilitation initiatives can further streamline cross-border trade procedures.

4. For Future Researchers:
Conduct in-depth studies on specific challenges. Further research can delve deeper into specific challenges identified in this study, such as improper lodgment or unclear communication. This can provide more targeted recommendations for improvement. A qualitative research investigation would provide a deeper understanding and richer contextualization of this phenomenon.

Conduct comparative studies. Analyzing customs modernization practices in other countries can provide valuable insights and potential best practices that can be adapted to the Philippine context.

12. ACKNOWLEDGEMENT

The researchers express their sincere gratitude to **Mabalacat City College** for this valuable opportunity to grow and learn professionally. Many people provided support throughout the research project, titled "**Challenges Faced by**

Logistics Companies towards the Implementation of Customs Modernization". Their contributions were instrumental in the project's success, and the researchers deeply appreciate their assistance.

First, the researchers would like to express their deepest gratitude to **Almighty God** for being their source of strength during the challenging times of this study. Without His guidance and blessings, this research would not have been possible. They are also grateful for the knowledge and love He bestowed upon them, which significantly contributed to the research's success.

Second, the researchers extend their sincere gratitude to **Mr. Ricardo S. Jimenez**, their research instructor, and **Vince S. Capil**, their research advisor, for their unwavering support, encouragement, and invaluable knowledge throughout the research process. Their guidance and insights were instrumental, and the researchers would not have been able to complete the study successfully without their help.

The researchers also want to express their heartfelt thanks to everyone who helped in this study, including their friends and loved ones. Their insightful recommendations and counsel significantly enhanced the research. The encouragement and support of their family members provided them with the willpower to persevere, and their combined contributions were crucial to the study's accomplishment.

The researchers are deeply appreciative of the invaluable knowledge gained throughout the research project. They are eager to apply the insights and skills acquired to their future endeavors. This experience has not only enriched their understanding of the subject but has also equipped them with practical skills that they are excited to utilize. The researchers extend heartfelt thanks to everyone who contributed to the realization of this research, as it has played a significant role in advancing their academic and professional growth.

13. REFEREENCES

Basa, (2023): https://mb.com.ph/2023/4/14/empowered-e-commerce-for-the-philippines?fbclid=IwAR3wIpAC9rmF40k6oeddtUM7DPxpfujbrWK_srA0W_o92MBPedBh82vfOxly

Czajkowska, A., and Betlejewska, R. (2015). Quality management tools applying in the strategy of logistics services quality improvement. *Serbian journal of management*, 10(2), 225-234. <https://doi.org/10.5937/sjm10-8095>

Gupta, A., et al. (2018). Analysis of challenges faced by indian logistics service providers. *An international journal*, 11(4), 214-225. <https://doi.org/10.31387/oscm0350215>

Koroghlian, A. (2022): https://www.dtsone.com/the-history-of-the-logistics-and-shipping-industry/?fbclid=IwAR2iOuzATC-u8fANXwqj2914-HU_u0T2A5iqHwnFqRY5NCK0R09m3uKgAXw

Uthandu, A., et al. (2020) https://www.researchgate.net/publication/339090491_Challenges_And_Opportunities_In_Logistics_At_Domestic_And_International_An_Overview?fbclid=IwAR2yHiwIN7fri7ujjCo_XddXxKy2EWMVO8AwcdfILvuIS4wEcqlH3Bt44

Tran, L. (2021). Managing the effectiveness of e-commerce platforms in a pandemic. *Journal of retailing and consumer services*, 58(102287) <https://doi.org/10.1016/j.jretconser.2020.102287>

Kozenkova et al. (2020). In studies in system, decision and control (pp. 1105-1115) https://doi.org/10.1007/978-3-030-57831-2_118

Emmanuel OPOKU Ware et al. (2020) <https://www.researchgate.net/publication/361866228>

Russell, (2023): https://www.highway-logistics.co.uk/the-economic-impact-of-shipping-containers-in-global-trade-and-logistics/?fbclid=IwAR2_ITCT6P9uFbqAR8HI_5Zosfn_yEaGdr6_RVLRx2IA7ziIev5sr2pKvc

Rodrigue, (2023): https://transportgeography.org/contents/chapter7/globalization-international-trade/?fbclid=IwAR0f7thK5gOCY0qNiZc1-TYeLWQl7zqSxg0C5wYR7OyH63_yobkqK0UO6G0

Regie, (2023). E-commerce Logistics: https://golocad.com/logistics/?fbclid=IwAR0x-F_1k7ArK0Rd5Wwcjtf09tBTckT7dx6sJnTNKHqGHXCt3DoGiAWDjDU

Grainger, (2021): [https://books.google.com.ph/books?hl=en&lr=&id=rY05EAAAQBAJ&oi=fnd&pg=PP1&dq=Andrew+Grainger,+2021\).+CrossBorder+Logistics+Operations,+Effective+Trade+Facilitation+and+Border+Management.](https://books.google.com.ph/books?hl=en&lr=&id=rY05EAAAQBAJ&oi=fnd&pg=PP1&dq=Andrew+Grainger,+2021).+CrossBorder+Logistics+Operations,+Effective+Trade+Facilitation+and+Border+Management.)

Vorotyntseva, T., et al. (2020). International trade and customs operations in digitalera. *Directory of open access journals*. 10(2991), 2352-5398 <https://doi.org/10.2991/assehr.k.201212.010>

Imran, M., et al. (2018). Influence of industry 4.0 on the production and service sectors in Pakistan: evidence from textile and logistics industries. *Social sciences*, 7(12), 246. <https://doi.org/10.3390/socsci7120246>

Lee, P., et al. (2019). Sustainability challenges in maritime transport and logistics industry and its way ahead. *Sustainability*, 11(5), 1331.

<https://doi.org/10.3390/su11051331>

Eusebio, (2022):

<https://ojs.rsu.edu.ph/index.php/rsurj/article/view/85>

Llorito, (2020):

<https://www.worldbank.org/en/news/press-release/2020/10/27/philippines-customs-procedures-to-be-modernized-with-world-bank>

Nganda, (2020):

<https://ikesra.kra.go.ke/server/api/core/bitstreams/baeebf5f-91e3-438b-a06c-22e754c670ea/content>

Bureau of Customs, (2021). Philippine Customs Modernization Program.

<https://customs.gov.ph/philippine-customs-modernization-program/>

WordReference.com, 2024. Challenges Definition.

<https://www.wordreference.com/definition/challenge>

Official Gazette of the Republic of the Philippines. Bureau of Customs definition.

<https://www.officialgazette.gov.ph/section/briefing-room/department-of-finance/bureau-of-customs/>

Bureau of Customs. CUSTOMS MEMORANDUM CIRCULAR No. 85 - 2023. Customs

procedure definition. <https://customs.gov.ph/wp-content/uploads/2023/06/2023CMC-85-2023.pdf>

Kenton, 2024. Logistics: What It Means and How Businesses Use It.

<https://www.investopedia.com/terms/l/logistics.asp>