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Impact Of Supply Chain Disruption On Small Enterprises During The 2022-2026 Global Conflicts

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Abstract- Supply chain disruptions brought about by global conflicts and economic uncertainties have posed significant challenges to small enterprises, particularly those with limited financial and operational resources. This study examined the impact of supply chain disruptions on small enterprises in Parañaque City during the 2022–2026 global conflicts. Specifically, it determined the effects of supply chain disruptions on daily business operations, business growth and performance, coping strategies, supply chain challenges, and the support needed by small enterprises. The study also determined whether a significant relationship exists between supply chain disruptions and business performance.

A descriptive quantitative research design was employed in the study. Data were collected from 100 small business owners and operators in Parañaque City using a researcher-made survey questionnaire. The respondents were selected through purposive sampling. The collected data were analyzed using frequency and percentage distribution, weighted mean, and Spearman Rank-Order Correlation.

The findings revealed that respondents generally agreed that supply chain disruptions negatively affected their daily operations and business performance through delivery delays, shortages of products and raw materials, rising operational costs, and changing market conditions. Businesses responded by adopting coping strategies such as utilizing technology, finding alternative suppliers, diversifying products and services, and improving operational practices. The Spearman Rank-Order Correlation analysis revealed a significant weak positive relationship between supply chain disruptions and business performance ($\rho = 0.338$, $p = 0.001$), leading to the rejection of the null hypothesis.

The study concludes that supply chain disruptions significantly influence the performance of small enterprises. It emphasizes the importance of strengthening supply chain resilience, enhancing business preparedness, and expanding government and institutional support to help small enterprises remain sustainable and competitive during periods of global uncertainty.

Keywords: Supply Chain Disruptions, Small Enterprises, Business Performance, Supply Chain Resilience, Global Conflicts, Parañaque City

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INTRODUCTION

The In today's global economy, the supply chain plays a vital role in business operations, particularly for small enterprises. A supply chain refers to the movement of goods, services, and information from suppliers and manufacturers, distributors, and ultimately to consumers (Chopra & Meindl, 2016). Earlier studies described supply chains as relatively stable and predictable because major global disruptions were less frequent. However, recent geopolitical conflicts and economic uncertainties have significantly changed this environment, making supply chains more vulnerable to unexpected disruptions.

Between 2022 and 2026, ongoing global conflicts and geopolitical tensions disrupted the normal flow of goods and services worldwide. These events resulted in delivery delays, shortages of raw materials, and rising operational costs (Ivanov, 2020). Consequently, supply chains became more complex and less predictable. Small enterprises were particularly affected because they generally had limited financial resources, fewer alternative suppliers, and lower capacity to respond quickly to unexpected disruptions (Laorden et al., 2022; Rahman et al., 2022).

This study aims to examine how supply chain disruption during the global conflicts from 2022 to 2026 affected small enterprises in Parañaque City. Specifically, it investigates how these disruptions influenced business operations, growth, and overall performance, as well as the strategies adopted by business owners to cope with these challenges. This study also seeks to contribute to a better understanding of how government agencies, policymakers, and other stakeholders can support small enterprises through improved policies, innovation, and stronger supply chain systems.

Previous studies have shown that supply chain disruptions can lead to production delay, increased operating costs, and difficulties in meeting customer demand, particularly among businesses with limited resources (Ivanov, 2020). Chopra & Meindl (2026) further emphasized that flexible and resilient supply chain practices, such as supplier diversification and contingency planning, are essential during periods of uncertainty. Building on these findings, the present study examines how small enterprises in Parañaque City experienced these disruptions during the 2022-2026 global conflicts and strategies they adopted to remain operational.

The study focuses on small enterprises in Parañaque City, Metro Manila, an area recognized for its active commercial activities and strategic location within the region's logistics network. Many businesses in the city depend heavily on efficient transportation and reliable supply chain systems. However, traffic congestion, infrastructure limitations, rising logistics costs, and service disruptions have made these businesses more vulnerable to supply chain challenges. These conditions make Parañaque City an appropriate setting for examining the effects of global supply chain disruptions on small enterprises.

Although previous studies have examined the effects of supply chain disruptions on business, most have focused on large industries, general small and medium enterprises (SMEs) populations, or the impacts of the COVID-19 pandemic. Limited research has specifically examined the experiences of small enterprises in Parañaque City during the global conflicts from 2022 to 2026. Furthermore, few studies have explored how these businesses adopted their operations and implemented resilience strategies within a local context. To address this gap, the present study investigates the impact of supply chain disruptions on small enterprises in Parañaque City, with particular emphasis on business performance, operational challenges, and coping strategies. The findings are expected to contribute to the growing body of knowledge on supply chain resilience while providing practical insights for business owners, policymakers, and future researchers.

BACKGROUND OF THE STUDY

In recent years, supply chain disruptions have become more frequent due to global conflicts, economic crises and unexpected events that affect businesses worldwide. Compared with corporations, small enterprises often struggle to cope with sudden increases in operational costs, transportation delays, and shortages of goods because of their limited financial and operational resources. As a result, disruptions in the supply chain can easily lead to financial instability and operational difficulties for small enterprises (Shcherbak, 2026).

The effects of major global events, such as the COVID-19 pandemic and the Russia-Ukraine War, have highlighted the importance of flexible and adaptive supply chain strategies. During these crises, many businesses experienced transportation delays, increased logistics costs, and limited access to raw materials. Consequently, small enterprises were forced to reduce production, increase prices, or seek alternative ways to continue operating despite these challenges (Mukha et al., 2026).

In addition to operational disruptions, global supply chain instability has contributed to inflation, product shortages, and reduced trade efficiency. These challenges have a greater impact on small enterprises because they often rely on a limited number of suppliers and process less bargaining power in the market. Consequently, maintaining stable prices and ensuring a continuous supply of products becomes more difficult, affecting customer satisfaction and overall business performance (Mishra et al., 2025).

To address these challenges, businesses are encouraged to strengthen their supply chain strategies by diversifying with suppliers, improving inventory management, and preparing for potential risks. However, implementing these strategies remains difficult for many small enterprises because of financial limitations and limited operational capacity. As a result, they often struggle to remain resilient and respond effectively to continuous supply chain disruptions (Le & Tran, 2026).

The experience of small and medium enterprises (SMEs) during the COVID-19 pandemic further demonstrated the importance of adaptability and resilience. Many businesses became more flexible in their operations, improved management practices, and innovative solutions to remain competitive despite supply chain disruptions. These responses emphasize that resilience plays a critical role in sustaining business operations during periods of uncertainty (Rahman et al., 2022).

Collectively, these studies demonstrate that supply chain disruptions affect businesses in multiple ways, including operational delays, rising costs, and reduced business performance. While Mukha et al. (2026) emphasized the operational challenges caused by disruptions, Mishra et al. (2025) highlighted their broader economic effects, such as inflation and reduced trade efficiency. Similarly, Rahman et al. (2022) showed that business resilience and adaptability are essential for sustaining operations during periods of uncertainty. Together, these findings suggest that small enterprises require both operational flexibility and strategic planning to withstand prolonged supply chain disruptions.

Global trade has become increasingly uncertain, continuing to influence business operations across different countries. Economic and geopolitical tensions disrupt supply chains by creating delays, increasing risks, and generating unpredictable market conditions. Consequently, small enterprises are often the most affected because they have limited resources and fewer opportunities to adjust quickly to sudden market changes (Ersahin et al., 2023).

Financial systems and supply chains are closely interconnected, meaning that disruptions in one area can quickly affect the other. Economic instability and fluctuations in financial markets often result in higher production costs, supply delays, and weaker business performance. These conditions place greater pressure on small enterprises because of their limited financial resources and lower capacity to respond to unexpected disruptions (Yang et al., 2023).

Recent global conflicts and economic crises have demonstrated that supply chain disruptions affect not only multinational corporations but also small and medium enterprises (SMEs), which are generally more vulnerable because of their limited resources and lower capacity to manage risks effectively. These conditions may also reduce entrepreneurial activities and create a more challenging business environment for small enterprises (Audretsch et al., 2023).

To address these challenges, researchers emphasize the importance of strengthening supply chain resilience through supplier diversification and the integration of modern technologies such as artificial intelligence. These innovations improve demand forecasting, risk monitoring, and decision-making, enabling businesses to respond more effectively to supply chain disruptions (AlMahri et al., 2026).

Moreover, global trade uncertainties and macroeconomic instability continue to influence business performance and international trade flows (World Trade Organization [WTO], 2024). These conditions highlight the importance of understanding how businesses adapt to supply chain disruptions in order to maintain long-term sustainability and competitiveness. This study contributes to the existing literature by examining how small enterprises in Parañaque City experienced supply chain disruptions during the 2022–2026 global conflicts and the strategies they adopted to remain operational despite these challenges.

STATEMENT OF THE PROBLEM

This study aims to understand how supply chain disruptions during global conflicts from 2022 to 2026 have affected small businesses in Parañaque City. It also seeks to learn how these businesses have coped with challenges and what support might help them thrive in the future.

Specifically, it seeks to answer the following questions:

1. What is the profile of the respondents in terms of:
   1.1. Type of business (Retail, Service, or Manufacturing);
   1.2. How long the business has been operating; and
   1.3. Number of employees?

2. What are the effects of global supply chain disruptions on their businesses in terms of:
   2.1 Daily operations and activities;
   2.2 Business growth and overall performance; and
   2.3 Strategies they have used to cope, including resilience, diversification, and use of technology?

3. What kinds of supply chain challenges have these small businesses faced, in terms of:
   3.1 Delays or shortages of materials or products;
   3.2 Rising costs or pricing pressures; and
   3.3 Changes in customer demand or market conditions?

4. Do you think the strategies your business has used have helped reduce the impact of supply chain disruptions? (Yes / No)

5. Do you feel that additional support or policies are needed to help small businesses in Parañaque City become more resilient and sustainable? (Yes / No)

OBJECTIVES OF THE STUDY

This study aims to examine how global supply chain disruptions caused by the 2022–2026 conflicts have affected small enterprises in Parañaque City. It also seeks to understand the strategies these businesses have used to maintain their performance during this period.

Specifically, the study aims to achieve the following:

- Examine the impact of global supply chain disruptions on the operations and growth of small enterprises in Parañaque City.
- Identify the key factors contributing to supply chain vulnerabilities and economic instability among these businesses.
- Analyze strategies such as resilience, diversification, and technological adoption for managing supply chain disruptions.
- Evaluate how supply chain disruptions have affected business performance and profitability.
- Provide practical recommendations for improving supply chain management and strengthening the sustainability of small enterprises in Parañaque City.

SIGNIFICANCE OF THE STUDY

This study on the impact of supply chain disruptions caused by global conflicts on small enterprises in Parañaque City for the years 2022–2026 is expected to provide valuable insights and benefits to the following groups:

- Small Business Owners in Parañaque City – The study helps them understand how global conflicts affect the availability and cost of supplies, allowing them to plan, modify strategies, and keep their businesses running while facing challenging times.

- Policy Makers and Government Agencies – The findings can guide the creation of programs and policies that support small businesses, such as financial assistance, local sourcing support, and emergency response plans.
- Suppliers and Logistics Providers – This study helps them recognize how disruptions impact small enterprises, encouraging improvements in delivery systems and alternative supply solutions.
- Investors and Financial Institutions – The study provides insight into the risks faced by small businesses, helping them make better decisions in providing financial support and investments.
- Researchers and Academics – The findings serve as a reference for future studies on supply chain disruptions, small business resilience, and the effects of global conflicts in a local context.

SCOPE AND LIMITATIONS

The study focuses on analyzing how supply chain disruptions resulting from the global conflict from 2022 to 2026 affect small enterprises in Parañaque City. It assesses how these affect the daily operations, the overall business performance , and the availability of supplies. The goal of the study is to understand how external factors such as delays in delivery, high costs, and shortage of materials affect the ability of businesses to continue their operations as well as address the needs of customers, particularly the strategies they use to cope with these problems, such as finding alternative suppliers, adjusting prices, managing inventory, and using technology.

Our study was limited to selected small enterprises in Parañaque City and does not include large companies or other locations of small enterprises. The results are based on the experiences of the participants, which may differ depending on their situation and perspective. Additionally, the study covers only the period from 2022 to 2026 and does not include supply logistics disruptions that occurred before or after this period. Therefore, there may be other factors or experiences that are not recorded in the study.

CONCEPTUAL FRAMEWORK

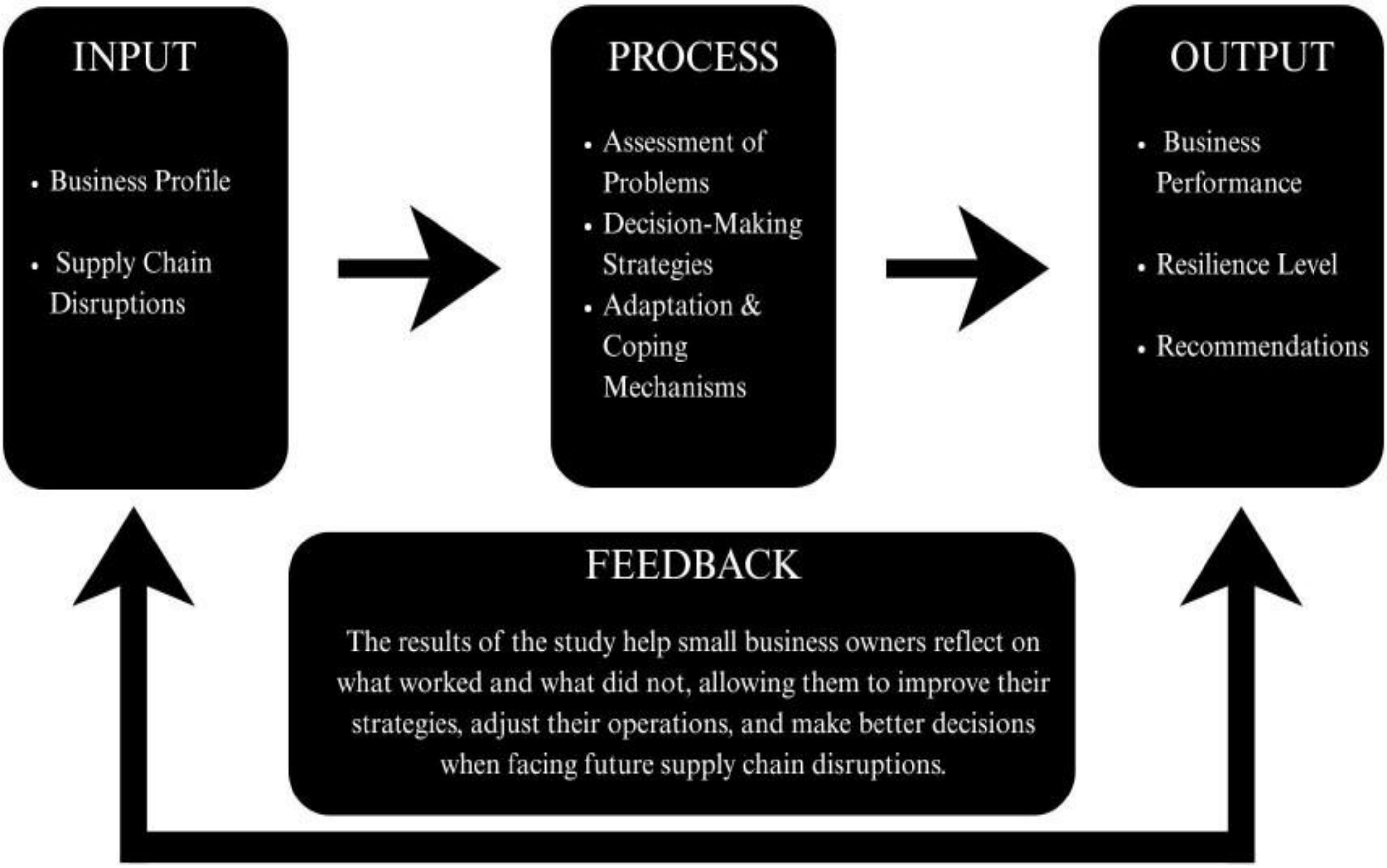
This study uses the **Input–Process–Output (IPO)** model to clearly show how supply chain disruptions affect the performance of small enterprises. The input of the study includes two main components: the profile of the business respondents and the different types of supply chain disruptions they experience. The business profile consists of factors such as the type of business, how long it has been operating, and the number of employees. On the other hand, the disruptions include common challenges like delivery delays, shortages of materials or products, increasing costs, and sudden changes in customer demand. These factors serve as the starting point of the study, as they influence how businesses operate under uncertain conditions.

The process focuses on how small businesses respond to these problems. It starts with how business owners recognize and assess the impact of disruptions on their daily operations. After understanding the situation, they make decisions and use different strategies to cope. These include finding alternative suppliers, adjusting prices, improving inventory management, and using technology to make operations more efficient. This stage also highlights the ability of businesses to adapt by making the necessary changes in their operations and planning to reduce risks. In simple terms, this part shows businesses how to think, decide, and act when faced with supply chain problems.

The output represents the results of these actions and decisions. It includes the overall performance of the business in terms of its daily operations, growth, and profitability. It also reflects how resilient the business has become—whether it can continue operating despite disruptions and maintain stability over time. Additionally, the study aims to provide practical recommendations that can help improve supply chain management and support small enterprises in becoming more prepared for future challenges.

Furthermore, the framework includes a feedback mechanism, which shows that the process does not simply end with the results. Instead, the outcomes—such as business performance and resilience—help business owners reflect on their experiences and learn from them. Through this, they can identify which strategies worked well, make improvements, and adjust their operations when needed. This continuous process of learning and improvement allows small enterprises to become more flexible, prepared, and capable of handling future disruptions.

Overall, the IPO framework helps explain the connection between supply chain disruptions and business performance in a clear and organized way. Showing how inputs are processed through decision-making and adaptation, it leads to meaningful outcomes. With the addition of feedback, the framework also highlights that businesses do not just respond once, but continuously learn, adjust, and improve as they face new challenges in a constantly changing environment.



HYPOTHESES

Null Hypothesis (H_0): There is no significant relationship between the extent of supply chain disruptions experienced by small enterprises and their business performance in terms of daily operations, business growth, and profitability.

Alternative Hypothesis (H_1): There is a significant relationship between the extent of supply chain disruptions experienced by small enterprises and their business performance in terms of daily operations, business growth, and profitability.

DEFINITION OF TERMS

Alternative Suppliers – refer to backup suppliers or sources of products and materials used by businesses when their main suppliers experience disruptions.

Business Performance – refers to how well a business operates in terms of sales, productivity, customer satisfaction, and overall operations.

Business Resilience – refers to the ability of a business to adapt, recover, and continue operating despite disruptions or unexpected challenges.

Customer Demand – refers to the quantity of products or services that customers need or want during a certain period.

Dynamic Capabilities – refer to the ability of businesses to adjust strategies, reorganize resources, and respond quickly to changing situations and disruptions.

Global Conflicts – refer to international issues such as wars, political tensions, trade restrictions, and economic crises that affect global trade and supply chain activities.

Operational Efficiency – refers to the ability of a business to maximize productivity while minimizing the use of time, cost, labor, and resources.
Risk Management – refers to the process of identifying, assessing, and reducing possible risks that may negatively affect business operations.
Small and Medium Enterprises (SMEs) – refer to businesses with limited employees, capital, and resources compared to large corporations.
Small Enterprises – refer to small-scale businesses with limited employees, resources, and capital.
Supply Chain Disruption – refers to unexpected problems or interruptions in the flow of goods, materials, and services that affect business operations.
Supply Chain Management (SCM) refers to the process of managing the flow of goods, services, information, and materials from suppliers to customers efficiently and effectively.
Technology Adoption – refers to the use of digital tools, online platforms, and automated systems to improve business operations and manage supply chain activities.

REVIEW OF RELATED LITERATURE LOCAL STUDIES

The World Bank (2022) reported that the Philippine supply chain and logistics system continues to face significant challenges, including inefficient transportation networks, customs delays, high logistics costs, and inadequate infrastructure. These weaknesses increase product prices, reduce delivery efficiency, and limit the overall competitiveness of businesses, particularly small enterprises that rely heavily on timely and cost-effective distribution. The report further emphasized that improving logistics infrastructure and strengthening coordination among supply chain stakeholders are essential to enhancing the country's economic performance. These findings provide important context for the present study, as they demonstrate how structural weaknesses in the Philippine supply chain can intensify the effects of global disruptions on small enterprises.

Parilla and Abadilla (2021) examined the relationship between supply chain management adoption and the profitability of Philippine micro, small, and medium enterprises (MSMEs). Their findings revealed that businesses implementing effective supply chain management practices, such as improved inventory control, supplier coordination, and logistics planning, achieved better financial performance. The study also highlighted that organizational size alone does not guarantee profitability; rather, effective supply chain strategies and operational flexibility are more important in improving business resilience. These findings support the present study by emphasizing that strengthening supply chain management enables small enterprises to better withstand disruptions and maintain business stability during periods of uncertainty.

Laorden et al. (2022) investigated the effects of supply chain disruptions during the COVID-19 pandemic on micro, small, and medium enterprises (MSMEs) in the Davao Region. The study found that shortages of raw materials, delivery delays, and supply interruptions significantly reduced production, sales, and daily business operations. Because of these challenges, many MSMEs adopted coping strategies such as adjusting product prices, reducing product variety, and seeking alternative suppliers. The study further emphasized that small businesses are particularly vulnerable to supply chain disruptions because of their limited resources and dependence on stable supplier networks. These findings reinforce the importance of resilience and adaptability, which are also central to the present study on the experiences of small enterprises during the 2022–2026 global conflicts.

Collectively, the local studies indicate that supply chain disruptions continue to pose significant challenges for Philippine MSMEs. While the World Bank (2022) emphasized structural weaknesses in the country's logistics system, Parilla and Abadilla (2021) demonstrated that effective supply chain management improves business performance despite operational challenges. Similarly, Laorden et al. (2022) showed that disruptions force businesses to adopt adaptive strategies to sustain operations. These studies suggest that although external disruptions cannot always be prevented, strengthening supply chain management, improving operational flexibility, and developing resilience strategies can help small enterprises reduce their vulnerability and maintain business continuity.

FOREIGN STUDIES

Ivanov (2018) emphasized that supply chain resilience depends on a combination of proactive and reactive strategies. The study explained that proactive measures, such as maintaining backup suppliers, strategic inventory, and contingency planning, help reduce the impact of disruptions before they occur, while reactive strategies enable businesses to recover more quickly after unexpected events. These findings highlight the importance of preparedness and flexibility in minimizing operational risks, particularly for businesses operating in uncertain environments. The study supports the present research by demonstrating that resilience is a key factor in sustaining business operations during supply chain disruptions.

Shekarabi et al. (2020) highlighted the importance of supply chain resilience in maintaining business continuity during disruptions. The authors explained that resilient supply chains are characterized by flexibility, collaboration, and effective risk management, allowing businesses to respond more efficiently to unexpected events. Their findings further suggest that organizations investing in resilience strategies are better positioned to recover from disruptions and sustain long-term performance. These insights reinforce the importance of resilience strategies examined in the present study.

Gereffi (2020) examined how the COVID-19 pandemic exposed weaknesses in global supply chains and demonstrated the need for greater flexibility and diversification. The study emphasized that overdependence on a limited number of suppliers and production locations increases business vulnerability during global crises. As a result, organizations are encouraged to diversify suppliers, strengthen regional networks, and improve coordination across the supply chain to reduce future risks. These findings are relevant to the present study because they highlight practical strategies that small enterprises may adopt to cope with supply chain disruptions.

The European Central Bank (2023) reported that geopolitical conflicts and economic uncertainty continue to disrupt global trade, resulting in higher production costs, inflationary pressures, and supply shortages. These conditions affect businesses of all sizes; however, small enterprises are particularly vulnerable because of their limited financial resources and lower capacity to absorb unexpected costs. The report underscores the importance of strengthening business resilience to maintain operational stability during prolonged disruptions.

Vo et al. (2024) emphasized that digital transformation has become an essential strategy for improving supply chain resilience. The study found that digital technologies enhance demand forecasting, inventory management, communication, and real-time decision-making, enabling businesses to respond more effectively to supply chain disruptions. The findings suggest that technology adoption not only improves operational efficiency but also strengthens long-term business sustainability, making it highly relevant to the present study.

Collectively, the foreign studies emphasize that supply chain disruptions have become increasingly complex because of globalization, pandemics, and geopolitical conflicts. Ivanov (2018) and Shekarabi et al. (2020) focused on the importance of resilience and risk management, while Gereffi (2020) highlighted the need for supplier diversification to reduce vulnerability. Similarly, the European Central Bank (2023) demonstrated the economic consequences of prolonged disruptions, whereas Vo et al. (2024) emphasized the role of digital transformation in strengthening supply chain resilience. Taken together, these studies indicate that businesses can improve their ability to withstand disruptions by combining resilience strategies, supplier diversification, and technology adoption.

SYNTHESES

The reviewed local and foreign literature consistently demonstrates that supply chain disruptions have become one of the most significant challenges affecting business operations worldwide. Previous studies revealed that disruptions caused by global conflicts, economic instability, pandemics, and logistics constraints result in transportation delays, shortages of raw materials, increased operational costs, and declining business performance. These challenges are particularly critical for small enterprises because of their limited financial resources, dependence on a smaller number of suppliers, and lower capacity to respond to unexpected disruptions.

The literature also highlights several strategies that businesses have adopted to improve supply chain resilience. Local studies emphasized the importance of effective supply chain management, operational flexibility, and adaptive business practices in helping Philippine MSMEs sustain their operations during periods of disruption. Similarly, foreign studies stressed the value of supplier diversification, risk management, digital transformation, and technological innovation in strengthening business resilience and reducing supply chain risks. Although the specific strategies vary depending on the business environment, both local and international studies consistently recognize resilience as a key factor in maintaining business continuity.

Despite these similarities, differences between the local and foreign literature were also evident. Foreign studies generally focused on global supply chain resilience, technological innovation, and strategic risk management, whereas local studies primarily examined the operational challenges experienced by Philippine MSMEs, including logistics inefficiencies, infrastructure limitations, and the effects of supply chain disruptions on business performance. These differences indicate that while supply chain disruptions are global in nature, their impact and the effectiveness of coping strategies depend largely on the local business environment and available resources.

However, limited studies have specifically examined the experiences of small enterprises in Parañaque City during the 2022–2026 global conflicts. Existing studies generally focused on broader MSME populations, the COVID-19 pandemic, or international supply chain issues, with limited attention given to the combined effects of recent geopolitical conflicts on the daily operations, business performance, and resilience strategies of small enterprises within a local context.

To address this gap, the present study investigates the impact of supply chain disruptions on small enterprises in Parañaque City by examining their business profile, the effects of disruptions on daily operations and business performance, and the coping strategies they employed during the 2022–2026 global conflicts. The findings are expected to contribute additional evidence to the existing literature while providing practical insights for business owners, policymakers, and future researchers.

METHODOLOGY

RESEARCH DESIGN

This study employed a descriptive quantitative research design to examine the impact of supply chain disruptions on small enterprises in Parañaque City during the 2022–2026 global conflicts. A descriptive research design was considered appropriate because it enabled the researchers to systematically describe the experiences, challenges, and coping strategies of small business owners. The quantitative approach facilitated the collection of numerical data through a structured survey questionnaire, allowing the researchers to summarize and analyze the responses using appropriate statistical techniques. This design provided a clear understanding of how supply chain disruptions influenced business operations, performance, and sustainability.

RESEARCH LOCALE

The study was conducted in Parañaque City, a highly urbanized city with diverse commercial establishments and a growing number of small enterprises. The city is home to businesses engaged in retail, service, and manufacturing, many of which depend on efficient transportation systems, timely deliveries, and reliable supplier networks. Consequently, these businesses are vulnerable to supply chain disruptions brought about by global conflicts during the period 2022–2026.

Parañaque City was selected as the research locale because it provides an appropriate setting for examining how small enterprises experience and respond to supply chain disruptions. Business owners in the city commonly encounter challenges such as delayed deliveries, rising transportation costs, shortages of supplies, and changes in customer demand. These conditions make the city relevant to the objectives of the study and provide valuable insights into the experiences of small enterprises operating under uncertain economic conditions.

RESPONDENTS OF THE STUDY

The respondents of the study consisted of 100 small business owners and business operators from Parañaque City. They were selected because they were directly involved in managing their businesses and had experienced supply chain disruptions during the 2022–2026 global conflicts. These disruptions included delivery delays, shortages of products or raw materials, rising supply costs, and changes in market conditions.

The respondents represented different business sectors, including retail, service, and manufacturing. Their direct involvement in business operations enabled them to provide reliable information regarding the effects of supply chain disruptions on daily operations, business performance, and business sustainability.

A total of 100 respondents was considered adequate to provide meaningful descriptive information regarding the experiences of small enterprises that met the study's inclusion criteria.

SAMPLING TECHNIQUE

The study employed purposive sampling, a non-probability sampling technique in which respondents were selected based on specific qualifications relevant to the objectives of the study. Only small business owners and business operators in Parañaque City who had experienced supply chain disruptions during the 2022–2026 global conflicts were included as respondents.

Purposive sampling was considered appropriate because not all business owners possessed the necessary experience related to the research topic. Selecting respondents with direct knowledge of supply chain disruptions ensured that the data collected were relevant, accurate, and aligned with the objectives of the study.

RESEARCH INSTRUMENT

The researchers utilized a researcher-made survey questionnaire as the primary instrument for data collection. The questionnaire was developed based on the objectives of the study and the related literature on supply chain disruptions, business performance, resilience, and sustainability. The questionnaire consisted of three parts: (1) gathered the demographic profile of the respondents, including the type of business, years of operation, and number of employees, (2) measured the effects of supply chain disruptions on business operations and overall business performance, and (3) identified the coping strategies adopted by small enterprises, including resilience, supplier diversification, and the use of technology. Responses in Parts II and III were measured using a five-point Likert scale. Before the actual data collection, the questionnaire was reviewed by the research adviser to ensure that the items were clear, relevant, and aligned with the objectives of the study.

DATA GATHERING PROCEDURE

The researchers first prepared the survey questionnaire and sought permission from the selected small business owners and business operators in Parañaque City to conduct the study. Before administering the questionnaire, the respondents were informed about the purpose and objectives of the research. They were also assured that their participation was voluntary, that their responses would remain confidential, and that the information collected would be used solely for academic purposes. Informed consent was obtained from all respondents before data collection.

The questionnaires were distributed either personally or through online platforms, depending on the respondents' convenience. The researchers explained the instructions clearly to ensure that all questions were properly understood. After the completed questionnaires were retrieved, the responses were organized, coded, tabulated, and encoded for statistical analysis. The collected data were carefully checked to ensure completeness and accuracy before analysis.

DATA ANALYSIS

The collected data were analyzed using both descriptive and inferential statistical tools.

Frequency and Percentage Distribution were used to describe the demographic profile of the respondents, including the type of business, years of operation, and number of employees.

Weighted Mean was used to determine the respondents' level of agreement regarding the effects of supply chain disruptions on business operations, business performance, and coping strategies.

Spearman Rank-Order Correlation (Spearman's rho) was used to determine whether a significant relationship exists between supply chain disruptions and the business performance of small enterprises. This non-parametric statistical test was selected because the variables were measured using five-point Likert scale responses, and the study aimed to determine the relationship between the two variables. The hypotheses were tested at the 0.05 level of significance.

ETHICAL CONSIDERATION

The researchers observed ethical principles throughout the conduct of the study. Participation was entirely voluntary, and respondents were free to decline or withdraw from the study at any time without penalty. Before completing the questionnaire, respondents were informed about the purpose and objectives of the research.

To protect the privacy of the respondents, confidentiality and anonymity were strictly maintained. No personally identifiable information was required unless voluntarily provided by the respondents. All data collected were used solely for academic and research purposes.

The questionnaire contained no harmful, offensive, or discriminatory questions that could cause psychological, emotional, or social harm. Respondents were encouraged to answer honestly based on their actual experiences to ensure the accuracy and credibility of the study.

Furthermore, the researchers were committed to analyzing, interpreting, and presenting the data objectively and without manipulation. All findings and conclusions were reported honestly, fairly, and in accordance with accepted academic and ethical standards.

SUMMARY

This study employed a descriptive quantitative research design to examine the impact of supply chain disruptions on small enterprises in Parañaque City during the 2022–2026 global conflicts. Parañaque City was selected as the research locale because of its diverse commercial establishments and the presence of numerous small businesses that rely on efficient transportation, timely deliveries, and stable supplier networks. The respondents consisted of 100 small business owners and business operators, who were selected through purposive sampling based on their direct experience with supply chain disruptions.

The study utilized a researcher-made survey questionnaire to gather data on the respondents' demographic profile, the effects of supply chain disruptions on business operations and performance, and the coping strategies adopted by small enterprises. Prior to data collection, the questionnaire was reviewed by the research adviser to ensure that the items were clear, relevant, and aligned with the objectives of the study. Data were collected through the personal and online distribution of questionnaires after obtaining informed consent from the respondents.

The collected data were analyzed using both descriptive and inferential statistical tools. Frequency and Percentage Distribution were used to describe the respondents' profile, while the Weighted Mean was used to determine the respondents' level of agreement regarding the effects of supply chain disruptions and their coping strategies. Spearman Rank-Order Correlation (Spearman's rho) was employed to determine whether a significant relationship existed between supply chain disruptions and the business performance of small enterprises at the 0.05 level of significance.

Throughout the conduct of the study, the researchers adhered to ethical principles by ensuring voluntary participation, obtaining informed consent, maintaining confidentiality and anonymity, and handling the collected data with honesty, integrity, and fairness. The findings were analyzed and presented objectively to ensure the credibility and reliability of the research.

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter presents, analyzes, and interprets the data gathered from the 100 small business owners and operators in Parañaque City who participated in the study entitled Impact of Supply Chain Disruption on Small Enterprises During the 2022–2026 Global Conflicts. The findings are presented according to the objectives of the study. Specifically, this chapter discusses the respondents' profile, the effects of supply chain disruptions on business operations and performance, the coping strategies adopted by small enterprises, the supply chain challenges experienced, the effectiveness of business strategies, and the support needed to improve business resilience. The results are interpreted using appropriate statistical tools and are supported by relevant literature where applicable.

PROFILE OF RESPONDENTS

Table 1. Profile of Respondents (N=100)

Profile Variable	Category	Frequency	Percentage
Type of Business	Retail	30	30%
	Service	53	17%
	Manufacturing	17	53%
Years of Operation	Less than 1 year	15	15%
	1-3 years	37	37%
	4-6 years	31	31%
	7-10 years	10	10%
	More than 10 years	7	7%
Number of Employees	1-5 Employees	35	35%
	6-10 Employees	25	25%
	11-15 Employees	21	21%

	16 and Above	19	19%

Analysis and Interpretation:

Table 1 presents the demographic profile of the respondents according to the type of business, years of operation, and number of employees. Among the 100 respondents, the majority were engaged in service businesses, followed by retail and manufacturing enterprises. This indicates that service-oriented businesses were more represented in the study, reflecting the active participation of service providers in Parañaque City's local economy.
In terms of years of operation, most respondents had been operating their businesses for one to three years, suggesting that many small enterprises are relatively new. This may also imply that newer businesses are more vulnerable to supply chain disruptions because they often have limited financial resources, fewer supplier networks, and less experience in managing unexpected challenges.

Regarding the number of employees, most businesses employed one to five workers, indicating that the respondents were primarily micro and small enterprises. This finding is consistent with the characteristics of small businesses, which typically operate with limited manpower and resources. Such limitations may reduce their ability to respond quickly to supply chain disruptions and other external business challenges.

EFFECTS OF SUPPLY CHAIN DISRUPTION ON SMALL BUSINESS

Table 2.1 Effects of Supply Chain Disruption on Daily Operation and Activities

Indicator	Mean	Interpretation
Supply chain disruptions caused delays in our daily business operations.	3.99	Agree
Our business experienced a shortage of product or materials	3.75	Agree
Delayed deliveries affected our customers' service.	3.92	Agree
Supply problems interrupted our normal business activities.	3.92	Agree
Composite Mean	3.90	Agree

Analysis and Interpretation:

The results indicate that the respondents generally agreed that supply chain disruptions significantly affected their daily business operations, as reflected by the composite mean of 3.90. Among the indicators, "Supply chain disruptions caused delays in our daily business operations" obtained the highest mean (3.99), suggesting that operational delays were the most common challenge experienced by small enterprises.

Likewise, respondents agreed that delayed deliveries affected customer service and that supply problems interrupted normal business activities, both obtaining a mean of 3.92. These findings suggest that supply chain disruptions not only affected internal operations but also influenced customer satisfaction and the continuity of business activities. Although the shortage of products or materials received the lowest mean (3.75), respondents still agreed that it remained a common operational concern.

These findings support the studies of Mukha et al. (2026) and Mishra et al. (2025), which emphasized that supply chain disruptions result in delivery delays, shortages of raw materials, and operational interruptions that reduce business efficiency, particularly among small enterprises.

Table 2.2 Effects of Supply Chain on Business Growth and Overall Performance

Indicator	Mean	Interpretation
Supply chain disruptions negatively affected our sales and income.	3.88	Agree
Rising costs reduced our business performance.	3.74	Agree

Our business growth slowed down because of supply-related problems	3.79	Agree
Supply chain issues affect customer satisfaction.	3.90	Agree
Composite Mean	3.83	Agree

Analysis and Interpretation:

The results show that respondents generally agreed that supply chain disruptions affected their business growth and overall performance, as reflected by the composite mean of 3.83. Among the indicators, "Supply chain issues affect customer satisfaction" obtained the highest mean (3.90), indicating that disruptions had a considerable influence on customers' experiences and satisfaction with business services.

Meanwhile, respondents also agreed that supply chain disruptions negatively affected sales and income (3.88), slowed business growth (3.79), and reduced overall business performance because of rising costs (3.74). These findings suggest that supply chain disruptions have broad consequences extending beyond operational delays to financial performance and customer relationships.

The findings are consistent with Yang et al. (2023), who explained that disruptions in global supply chains and financial systems negatively affect business performance by increasing production costs and reducing operational stability. Similarly, World Trade Organization (2024) reported that continuing global trade uncertainties have affected business performance and market competitiveness worldwide.

Table 2.3 Coping Strategies, Resilience, Diversification, and Use of Technology

Indicator	Mean	Interpretation
Our business looked for alternative suppliers during disruptions.	3.81	Agree
We used technology or online platforms to manage operations better.	3.97	Agree
Our business adjusted quickly to supply chain challenges.	3.78	Agree
Diversifying products or services helped our business cope with disruptions	3.85	Agree
Composite Mean	3.85	Agree

Analysis and Interpretation:

The results indicate that respondents generally agreed that resilience strategies helped reduce the effects of supply chain disruptions, as shown by the composite mean of 3.85. The highest mean (3.97) was obtained by the statement "We used technology or online platforms to manage operations better." This suggests that technology played a vital role in helping businesses maintain communication, manage transactions, and continue operations during supply chain disruptions.

Respondents also agreed that diversifying products or services, finding alternative suppliers, and adapting to supply chain challenges contributed to business continuity. Although adapting quickly to disruptions received the lowest mean (3.78), it was still interpreted as Agree, indicating that businesses were generally able to respond to changing circumstances despite operational difficulties.

These findings support Rahman et al. (2022), who emphasized that business resilience, innovation, and adaptability are essential for maintaining business continuity during periods of uncertainty.

SUPPLY CHAIN CHALLENGES EXPERIENCE

Table 3.1 Delay or Shortages of Materials or Products

Indicator	Mean	Interpretation
Our business experienced delays in receiving supplies or products.	3.37	Sometimes
Some products or materials became unavailable during the disruption	3.61	Often
Composite Mean	**3.49**	**Often**

Analysis and Interpretation:

The results show that businesses often experienced delays and shortages of materials or products during supply chain disruptions, as reflected by the composite mean of 3.49. Product shortages occurred more frequently than delivery delays, suggesting that limited product availability became one of the major operational challenges faced by small enterprises.

These findings indicate that disruptions in supply chains affected businesses' ability to maintain adequate inventories and provide continuous products and services to customers. Similar findings were reported by Mukha et al. (2026), who found that shortages of raw materials and transportation delays significantly disrupted business operations.

Table 3.2 Rising Costs or Pricing Pressures

Indicator	Mean	Interpretation
The prices of products or raw materials increased significantly.	3.75	Often
Increased cost affected our pricing decisions	3.74	Often
Composite Mean	**3.75**	**Often**

Analysis and Interpretation:

The respondents often experienced rising costs and pricing pressures during supply chain disruptions, as reflected by the composite mean of 3.75. The increase in the prices of products and raw materials received the highest mean, indicating that higher procurement costs became one of the most common challenges encountered by businesses.

These findings suggest that businesses were compelled to adjust their pricing strategies to cope with increasing operational costs. This supports the findings of Mishra et al. (2025), who reported that supply chain disruptions significantly increase production costs and reduce business efficiency.

Table 3.3 Changes in Customer Demand or Market Conditions

Indicator	Mean	Interpretation
Customer demand changed during supply chain disruptions.	3.47	Often
Market changes created challenges for our business.	3.59	Often
Composite Mean	**3.53**	**Often**

Analysis and Interpretation:

The respondents often experienced changes in customer demand and market conditions, with a composite mean of 3.53. Market changes created greater challenges than changes in customer demand, indicating that external economic conditions significantly influenced business operations.

The findings suggest that businesses had to continuously adjust their operations and marketing strategies to respond to changing customer preferences and market conditions. These findings support World Trade Organization (2024), which highlighted that global trade uncertainty continues to influence market demand and business competitiveness.

EFFECTIVENESS OF BUSINESS STRATEGIES

Table 4. Do you think the strategies your business has used have helped reduce the impact of supply chain disruption?

Response	Frequency	Percentage
Yes	**99**	**99%**
No	**1**	**1%**
Total	**100**	**100%**

Analysis and Interpretation:

Nearly all respondents (99%) believed that the strategies implemented by their businesses helped reduce the impact of supply chain disruptions. This indicates that adopting appropriate business strategies enabled many small enterprises to maintain their operations despite ongoing challenges.
This finding supports Rahman et al. (2022), who concluded that adaptive management practices and business resilience contribute significantly to sustaining business operations during periods of disruption.

Table 4.1 If yes, which strategies help your business the most?

Strategies	Frequency	Percentage
Finding alternative suppliers	76	76%
Increasing inventory or stock	48	48%
Using online platforms or technology	73	73%
Adjusting product prices	59	59%
Reducing operational expenses	36	36%
Improving delivery methods	54	54%

Analysis and Interpretation:

Finding alternative suppliers (76%) and using online platforms or technology (73%) were identified as the most effective strategies for reducing the impact of supply chain disruptions. These findings indicate that businesses relied on flexibility, supplier diversification, and digital technologies to improve operational continuity.
The results support Le and Tran (2026), who emphasized that supplier diversification and technology adoption improve supply chain resilience and business sustainability.

SUPPORT AND POLICIES FOR SMALL BUSINESS

Table 5.1: Do you feel that additional support or policies are needed to help small businesses in Paranaque City become more resilient and sustainable?

Response	Frequency	Percentage
Yes	98	98%
No	2	2%

Analysis and Interpretation:

Most respondents (98%) believed that additional support and government policies are necessary to strengthen the resilience and sustainability of small enterprises. This finding suggests that small businesses recognize the importance of external assistance in addressing supply chain challenges.
This finding is consistent with Audretsch et al. (2023), who emphasized that SMEs require stronger institutional support because of their limited resources and higher vulnerability to supply chain disruptions.

Table 5.2: If yes, what type of support would help your business the most?

Type of Support	Frequency	Percentage
Financial assistance	**49**	**49%**
Government support programs	**52**	**52%**
Lower transportation costs	**50**	**50%**
Training and seminars	**60**	**60%**
Better access to suppliers	**72**	**72%**

Technology support	**69**	**69%**
Tax relief or incentives	**50**	**50%**

Analysis and Interpretation:

Better access to suppliers (72%) and technology support (69%) were identified as the most important forms of assistance needed by businesses. This indicates that respondents consider reliable supplier networks and digital technologies essential for strengthening business resilience and ensuring operational continuity.

The findings also suggest that government agencies and business organizations should prioritize programs that improve supplier accessibility, digital transformation, and business capability development to help small enterprises respond effectively to future supply chain disruptions.

Table 6: Relationship Between Supply Chain Disruptions and Business Performance

Variables	Spearman's rho (ρ)	p-value	Decision	Interpretation
Supply Chain	0.338	0.001	Reject H_0	Significant weak

Analysis and Interpretation:

To determine whether a significant relationship exists between supply chain disruptions and business performance, the researchers employed the Spearman Rank-Order Correlation. The analysis revealed a weak positive relationship between supply chain disruptions and business performance ($\rho = 0.338$, $p = 0.001$). Since the computed p-value is less than the 0.05 level of significance, the null hypothesis was rejected.

The findings indicate that supply chain disruptions are significantly associated with the business performance of small enterprises in Parañaque City. Although the relationship is weak, the results suggest that disruptions such as delivery delays, shortages of materials and products, rising operational costs, and changing market conditions influence business operations and overall business performance. The weak correlation also suggests that other factors, such as financial capacity, management practices, organizational resilience, and market conditions, may also influence business performance.

These findings are consistent with the studies of Mukha et al. (2026), Mishra et al. (2025), Rahman et al. (2022), and Laorden et al. (2022), which likewise reported that supply chain disruptions significantly affect the operational and financial performance of small and medium enterprises.

SUMMARY, CONCLUSION, AND RECOMMENDATIONS SUMMARY OF FINDINGS

SUMMARY

This study examined the impact of supply chain disruptions on small enterprises in Parañaque City during the 2022 – 2026 global conflicts. Specifically, it determined the effects of supply chain disruptions on daily business operations, business growth and overall performance, coping strategies, supply chain challenges, business resilience, and the support needed by small enterprises. The study also determined whether a significant relationship exists between supply chain disruptions and business performance.

A descriptive quantitative research design was employed. Data were collected from 100 small business owners and operators in Parañaque City through a researcher-made survey questionnaire. The respondents were selected using purposive sampling, and the data were analyzed using frequency and percentage distribution, weighted mean, and Spearman Rank-Order Correlation.

The findings revealed that respondents generally agreed that supply chain disruptions affected their daily operations and business performance. Delays in deliveries, shortages of products and materials, rising operational costs, and changing market conditions were among the major challenges experienced by small enterprises. These disruptions affected customer satisfaction, sales, income, and overall business growth.

The study further found that businesses adopted various coping strategies to minimize the effects of supply chain disruptions. The most common strategies included using technology and online platforms, finding alternative suppliers, and diversifying products or services. These strategies helped businesses maintain operational continuity despite external challenges.

Most respondents also believed that additional government support and business assistance programs are necessary to strengthen the resilience and sustainability of small enterprises. Better access to suppliers, technology support, and training programs were identified as the most important forms of assistance.

Finally, the Spearman Rank-Order Correlation analysis revealed a significant weak positive relationship between supply chain disruptions and business performance ($\rho = 0.338$, $p = 0.001$). Since the p-value was less than the 0.05 level of significance, the null hypothesis was rejected. This indicates that supply chain disruptions significantly influence the business performance of small enterprises in Parañaque City.

CONCLUSIONS

Based on the findings of the study, the researchers concluded that supply chain disruptions significantly affected the operations and performance of small enterprises in Parañaque City during the 2022–2026 global conflicts. Business owners experienced delays in deliveries, shortages of products and raw materials, rising operational costs, and changing market conditions, which affected daily operations, customer satisfaction, sales, and business growth.

The study also concludes that small enterprises demonstrated resilience by adopting various coping strategies, including the use of technology, supplier diversification, and adjustments in business operations. These strategies enabled businesses to continue operating despite the challenges brought about by supply chain disruptions.

Furthermore, the results of the Spearman Rank-Order Correlation indicated a statistically significant relationship between supply chain disruptions and business performance. Although the relationship was weak, the findings suggest that supply chain disruptions influence business outcomes and highlight the importance of resilience, effective management practices, and strategic planning in reducing their negative effects.

Overall, the study concludes that strengthening supply chain resilience, improving business preparedness, and enhancing collaboration among business owners, government agencies, and other stakeholders are essential for promoting the long-term sustainability and competitiveness of small enterprises.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are offered:

Small business owners should strengthen their supply chain management practices by establishing alternative supplier networks, improving inventory management, and utilizing digital technologies to monitor business operations and communicate with suppliers and customers more efficiently.

Government agencies, particularly the Department of Trade and Industry (DTI) and local government units (LGUs), should continue providing financial assistance, training programs, and business support initiatives that help small enterprises strengthen their resilience and respond effectively to supply chain disruptions.

Business organizations and industry associations should encourage collaboration among small enterprises through knowledge-sharing activities, supplier partnerships, and capacity-building programs that improve business continuity and preparedness during periods of uncertainty.

Educational institutions may use the findings of this study as reference material in business, entrepreneurship, and supply chain management courses to enhance students' understanding of the challenges faced by small enterprises during global disruptions.

Future researchers are encouraged to conduct similar studies involving larger samples, different industries, or other geographic locations. Future studies may also examine additional factors such as financial resilience, digital transformation, government support, and organizational capabilities that may influence business performance during supply chain disruptions.

SUMMARY OF THE OVERALL STUDY

This study investigated the impact of supply chain disruptions on small enterprises in Parañaque City during the 2022 – 2026 global conflicts. It aimed to determine how supply chain disruptions affected the daily operations, business growth, and overall performance of small enterprises. The study also examined the coping strategies adopted by business owners, the challenges they encountered, the support needed to strengthen business resilience, and the relationship between supply chain disruptions and business performance.

The researchers employed a descriptive quantitative research design to achieve the objectives of the study. A total of 100 small business owners and operators from the retail, service, and manufacturing sectors in Parañaque City participated in the research. The respondents were selected through purposive sampling because they had direct experience with supply chain disruptions during the period covered by the study. Data were collected using a researcher-made survey questionnaire, and the responses were analyzed using frequency and percentage distribution, weighted mean, and Spearman Rank-Order Correlation. Ethical principles, including voluntary participation, confidentiality, anonymity, and informed consent, were observed throughout the conduct of the study.

The results showed that supply chain disruptions had a considerable impact on small enterprises. Respondents generally agreed that delays in deliveries, shortages of products and raw materials, increasing operational costs, and changing market conditions negatively affected their daily business operations, customer satisfaction, sales, and overall business performance. Despite these challenges, many businesses remained operational by adopting strategies such as utilizing technology, diversifying suppliers, improving inventory management, and adjusting their business operations to changing market conditions.

Furthermore, the study found that government support, access to technology, and business development programs were viewed as important in helping small enterprises strengthen their resilience against future supply chain disruptions. The Spearman Rank-Order Correlation analysis also revealed a statistically significant relationship between supply chain disruptions and business performance, indicating that disruptions in the supply chain have a measurable influence on the performance of small enterprises.

Overall, the study highlights the importance of resilience, adaptability, and effective supply chain management in helping small enterprises respond to global disruptions. The findings provide useful information for business owners, policymakers, and future researchers in developing strategies and policies that promote business continuity, sustainability, and long-term competitiveness during periods of uncertainty.

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