

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

DEPARTMENT OF ECONOMICS



**THE EFFECT OF SUPPLIER DIVERSIFICATION ON PROCUREMENT CYCLE
TIME AT MINISTRY OF LOCAL GOVERNMENT AND PUBLIC WORKS.**

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TITLE OF DISSERTATION : THE EFFECT OF SUPPLIER
DIVERSIFICATION ON PROCUREMENT CYCLE TIME AT MINISTRY OF LOCAL
GOVERNMENT AND PUBLIC WORKS.

OCTOBER 2020 TO JUNE 2024

TITLE OF DEGREE : BACHELOR OF COMMERCE
HONOURS DEGREE IN SUPPLY CHAIN MANAGEMENT

FINISHING DEGREE IN: 2024

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ACKNOWLEDGEMENTS

Firstly, I want to show appreciation to the Almighty God for the strength throughout the course. I would also like to acknowledge Bindura University of Science Education for giving me the opportunity to do the Bachelors of Commerce Honours Degree in Supply Chain Management. To all the lecturers who gave impact to the knowledge and capabilities that I currently have, I would likely to offer gratitude for their energy and impact towards my success. I also offer much appreciation to my attachment workplace as an intern for I did grasp a lot of knowledge for which I am now fully equipped to do a lot based on that knowledge that I do have. Also I managed to do this research based on my attachment knowledge regardless of my academic knowledge.

Special appreciation and gratitude to Mr Bindu, my research Supervisor who took me throughout this research project and offered highly standardized guidance from the beginning till the final submission of this thesis in consideration of the institutional requirements. Not to forget my family, who took part of my academia period and offered more support from the first stage till now, I really appreciate. I would like to acknowledge my fellow classmates and friends for being very supportive especially in difficult times, they tried to make sure we walk and finish together and it hence gave me the power to keep moving till I win.

ABSTRACT

The study explored the effect of supplier diversification on procurement cycle time at the Ministry of Local Government and Public Works (MLGPW). The MLGPW in Zimbabwe is facing significant delays in its procurement cycle, leading to inefficiencies that adversely affect public service delivery. The annual report by PRAZ indicates that the average procurement cycle time within the ministry has increased by over 30% in the last five years, resulting in critical project delays and escalating costs. However, supplier diversification is a potential solution to reduce procurement cycle times, but current efforts to diversify the ministry's supplier base have encountered several challenges. While supplier diversification offers potential benefits, it remains unclear how it precisely affects the length of procurement cycles within government ministries. The study aimed to assess the current supplier diversification practices at MLGPW, evaluate their impact on procurement cycle time, and identify strategies to optimize these practices to reduce the procurement cycle. An explanatory research design was utilized, collecting data through structured questionnaires from a sample of 72 respondents, chosen by the use of stratified and simple random sampling. The data was analysed using both descriptive and inferential statistical methods. The study findings showed that The MLGPW utilizes various supplier diversification practices. Product and service diversification is highly valued and implemented, followed by geographical diversification and rotational sourcing. Moderately implemented practices include supplier size diversification, supplier base expansion, tiered contracting, and supplier ownership diversification, promoting diverse businesses. The study findings revealed that product and service diversification, with a significant negative estimate of -0.567, correlates with shorter cycle times at MLGPW. Rotational sourcing also significantly shortens cycle times, with an estimate of -0.678. Supplier base expansion shows a trend towards shorter cycle times, though not significantly. Conversely, tiered contracting is associated with longer cycle times, with a significant positive estimate of 0.789. Geographical diversification, supplier size diversification, and supplier ownership diversification do not show significant impacts. The study results indicated that leveraging technology, such as using e-procurement platforms, is viewed as the most effective strategy for improving procurement efficiency. Standardized procurement processes received strong agreement on their effectiveness. The study recommended that the MLGPW should continue to prioritize and expand its efforts in sourcing a wider variety of products and services from multiple suppliers.

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CHAPTER ONE

1.1 INTRODUCTION

Supplier diversification is a pivotal strategy for organizations aiming to enhance procurement efficiency and mitigate risks associated with single-source dependencies. The procurement process within government ministries is a complex and multifaceted endeavour, characterized by stringent regulations, intricate procedures, and the need for transparency and accountability. One crucial aspect that has garnered significant attention is the duration of the procurement cycle. Prolonged cycle times can lead to delays in project implementation, inefficient resource allocation, and potential cost overruns, ultimately undermining the effectiveness of government operations. In this context, supplier diversification has emerged as a potential strategy to streamline procurement processes and mitigate the risks associated with overdependence on a limited pool of vendors (Thevenin, Ben-Ammar & Brahim, 2022). By expanding the supplier base and fostering competition, government ministries can potentially leverage a broader range of capabilities, pricing structures, and delivery timelines, thereby optimizing the procurement cycle time. This study explores the effect of supplier diversification on procurement cycle time at Ministry of Local Government and Public Works (MLGPW).

1.2 Background of the Study

Globally, supplier diversification has been recognized as an effective approach to reducing procurement cycle times owing to technological advancements and the use of analytics to streamline processes (Dong, Geng, Xiao & Yang, 2022). Government ministries rely heavily on public procurement to acquire goods, services, and works necessary for delivering public services (Goldschmidt, Kremer, Thomas & Craighead, 2021). The efficiency of procurement processes directly influences a ministry's ability to function effectively, meet public needs, and judiciously use taxpayer funds (Jain, Girotra & Netessine, 2022). As averred by Lin, Fan, Shi and Fu (2021), supplier diversification and procurement cycle time are two critical aspects determining procurement efficiency (Svoboda, Minner & Yao, 2021). For instance, European Union countries have embraced e-procurement platforms, which aid in reducing procurement cycle time by enabling faster supplier selection and increased transparency (Li, Liu & Zheng, 2022). In North America, government ministries have used supplier diversification to address disruptions caused by geopolitical events and natural disasters, achieving greater resilience and shorter cycle times as a result (Blount & Li, 2021).

Supplier diversification refers to the practice of engaging with multiple suppliers rather than relying on a single or limited number of sources (van Hoek & Dobrzykowski, 2021). By engaging a broader range of suppliers, organizations can better navigate market fluctuations and geopolitical uncertainties (Barros, Cortez & Carvalho, 2021). This is especially relevant in the context of government ministries, where procurement delays can have far-reaching consequences on public service delivery (Berenguer, Costas Lorenzo & Sáez de Tejada Cuenca, 2024). Procurement cycle time encompasses the total duration of the procurement process, encompassing phases such as need identification, requirements development, tendering, evaluation, contract award, and contract execution (Wissuwa, Durach & Choi, 2022). Shortening procurement cycle time is a key goal for many organizations, as it directly impacts operational efficiency and cost-effectiveness (Sonar, Gunasekaran, Agrawal & Roy, 2022).

In Africa, supplier diversification faces unique challenges, including limited access to technology, bureaucratic hurdles, and corruption (Esmaeili-Najafabadi, Azad & Nezhad, 2021). These factors contribute to longer procurement cycle times in many African countries (Saputro, Figueira & Almada-Lobo, 2022). However, there are also opportunities for improvement. Governments are increasingly adopting digital procurement systems to streamline processes and enhance transparency (Thevenin et al., 2022). These initiatives aim to reduce procurement cycle times by facilitating supplier diversification and improving efficiency (Jain et al., 2022). On the other hand, managing multiple suppliers in the African context, where logistical and communication systems can be less developed, may add complexity and potentially increase procurement cycle times (Li et al., 2022). The relationship between supplier diversification and procurement cycle time is complex (Blount & Li, 2021). While supplier diversification can lead to shorter cycle times by increasing competition and reducing reliance on single sources, it can also introduce additional complexities (Sonar et al., 2022). For instance, managing relationships with multiple suppliers may require more resources and coordination, potentially leading to delays if not handled effectively (Wissuwa et al., 2022).

In Zimbabwe, like many African countries, faces significant challenges in reducing procurement cycle times (Machirori, Pande & Fundira, 2022). The country's economic instability, regulatory issues, and limited infrastructure contribute to prolonged procurement

processes (Jere, Msipa & Mazhazhate, 2021). However, Zimbabwe has taken steps to improve supplier diversification through policy reforms and increased adoption of e-procurement systems (Witter et al., 2020). These measures aim to enhance competition among suppliers and shorten procurement cycle times. For instance, in the case of Zimbabwe's MLGPW, the economic and regulatory environment presents hurdles that affect the procurement cycle time. The MLGPW has undergone significant procurement reforms aimed at improving efficiency, transparency, and competitiveness (Chikwiri, 2019). Prior to the enactment of the Public Procurement and Disposal of Public Assets Act (PPDPAA) in 2017, procurement practices at the MLGPW were centralized and often plagued by corruption, bid rigging, and inefficiencies (Mapako & Mareva, 2021). The PPDPAA decentralized procurement processes, granting the MLGPW greater autonomy while ensuring compliance with established regulations (Government of Zimbabwe, 2017). This paved the way for supplier diversification, a key strategy adopted by the ministry in 2018 after the establishment of the Procurement Regulatory Authority of Zimbabwe (PRAZ) and the Procurement Management Unit (Chikwiri, 2019). Supplier diversification has played a crucial role in enhancing competition and reducing the risk of over-reliance on a limited pool of suppliers (Rwelamila & Mafini, 2020). By expanding its supplier base, the MLGPW has been able to foster a more competitive environment, leading to better pricing, improved quality, and increased innovation (Zengeni & Zengeni, 2022).

Furthermore, the PPDPAA introduced stricter timelines for the procurement cycle, requiring tenders to be completed within 14 days, compared to the previous 30-day timeframe under the State Procurement Board Act (Government of Zimbabwe, 2017). This change has significantly improved the efficiency of the procurement process, enabling the MLGPW to respond more promptly to its procurement needs and better support its operational requirements (Mapako & Mareva, 2021). While challenges such as the manipulation of tender processes and political interference persist (Chikwiri, 2019), the MLGPW has made notable strides in enhancing the transparency and efficiency of its procurement practices. The combination of supplier diversification and streamlined procurement cycles has contributed to a more robust and competitive procurement environment, aligning with the ministry's broader efforts to promote good governance and effective service delivery (Zengeni & Zengeni, 2022). Prolonged procurement cycles can have significant consequences for government ministries, such as delays in project implementation, increased costs, and inefficient resource utilization. These issues can ultimately hinder service delivery and development initiatives, which are critical responsibilities of ministries like the MLGPW. Therefore, understanding how supplier

diversification can influence procurement cycle time is essential for optimizing public sector procurement procedures, improving operational efficiency, and enhancing service delivery within government ministries.

Previous research has explored the potential benefits of supplier diversification, such as reduced risk of supply disruptions, enhanced competition, and potential cost savings (Gheibi & Fay, 2021; Shan, Xiong & Zhang, 2023; Grossman, Helpman & Lhuillier, 2021). However, there exists a significant research gap concerning the specific relationship between supplier diversification and procurement cycle time within the context of government ministries. Studying the effect of supplier diversification on procurement cycle time is crucial because prolonged procurement cycles can lead to delays in project implementation, increased costs, and inefficient resource utilization, ultimately hindering service delivery and development initiatives (Ambe & Badenhorst-Weiss, 2021; Munzhedzi, 2021). This study aims to bridge this gap by examining how supplier diversification influences the length of government procurement cycles at the MLGPW, providing valuable insights for optimizing public sector procurement procedures and improving the ministry's operational efficiency and service delivery.

1.3 Problem Statement

The Ministry of Local Government and Public Works in Zimbabwe is facing significant delays in its procurement cycle, leading to inefficiencies that adversely affect public service delivery. The annual report by PRAZ indicates that the average procurement cycle time within the ministry has increased by over 30% in the last five years, resulting in critical project delays and escalating costs (PRAZ, 2023). However, supplier diversification is a potential solution to reduce procurement cycle times, but current efforts to diversify the ministry's supplier base have encountered several challenges. Moreover, corruption remains a significant concern (Zengeni & Zengeni, 2022). Transparency International's 2023 Corruption Perceptions Index ranked Zimbabwe 157th out of 180 countries, suggesting that corrupt practices within the procurement process could be causing further delays and inefficiencies (Transparency International, 2023). These practices complicate the ministry's efforts to diversify its supplier network and increase public distrust.

While supplier diversification offers potential benefits, it remains unclear how it precisely affects the length of procurement cycles within government ministries. A clear understanding of this relationship is vital to optimize public procurement strategies. This research gap takes on particular significance in the Zimbabwean context. The nation faces unique challenges in public procurement, including potential limitations in the supplier market, centralized systems, and capacity constraints within ministries. The MLGPW, with its critical role in infrastructure development and public service provision, provides a compelling case study to explore the intricate relationship between supplier diversification and procurement cycle time.

1.4 Objectives of the Study

The main objective of study is the effect of supplier diversification on procurement cycle time at MLGPW.

1.4.1 Specific Objectives of the Study

1. To assess the current forms of supplier diversification practices at MLGPW.
2. To evaluate the impact of supplier diversification on the procurement cycle time at MLGPW.
3. To establish ways optimizing supplier diversification strategies to reduce procurement cycle at MLGPW.

1.5 Research Questions of the Study

1. What are the current forms supplier diversification practices at MLGPW?
2. What is the impact of supplier diversification on the procurement cycle time at MLGPW?
3. What are the ways of optimizing supplier diversification strategies to reduce procurement cycle at MLGPW?

1.6 Research Hypothesis

H_1 : There is a positive and a statistically relationship between supplier diversification and procurement cycle time at MLGPW.

1.7 Significance of the Study

The study holds considerable significance for the MLGPW, offering insights that can lead to improved procurement efficiency and better public service delivery. By exploring the relationship between supplier diversification and procurement cycle time, this research provides actionable recommendations to optimize the ministry's procurement processes.

The study's findings can contribute to the following areas:

1. **Policy Development:** The results will offer evidence-based guidance for policymakers in the ministry to develop and refine procurement policies that promote supplier diversification. Effective policies could streamline procurement processes, reduce costs, and enhance public sector efficiency.
2. **Risk Mitigation:** Understanding the impact of supplier diversification on procurement cycle time can help the ministry identify strategies to mitigate risks associated with supply chain disruptions. This knowledge can lead to a more resilient public service infrastructure, reducing delays and ensuring continuity.
3. **Public Trust and Accountability:** By addressing issues that contribute to extended procurement cycle times, such as corruption and bureaucratic inefficiencies, the study can foster greater transparency and accountability in government procurement. This can strengthen public trust in the ministry's operations.
4. **Academic Contribution:** The study contributes to the existing body of knowledge on procurement processes and public sector management, particularly in the context of developing countries. It provides a unique perspective on the challenges and opportunities related to supplier diversification in a Zimbabwean setting, offering a reference point for future research.
5. **Improved Public Services:** Shorter procurement cycle times can lead to faster project implementation and more efficient public service delivery. This can have a direct positive impact on local communities, improving infrastructure and the quality of life for citizens.

Overall, the significance of this study lies in its potential to drive meaningful change within the MLGPW. By addressing critical issues related to procurement cycle time and supplier diversification, the research can support the ministry's efforts to become more efficient, transparent, and responsive to public needs.

1.8 Assumptions of the Study

Assumptions in a study refer to the underlying beliefs or expectations that are taken for granted and are considered true without being proven. They form the foundation upon which the research is built and influence the design and interpretation of the study. Below are the key assumptions for a study on the effect of supplier diversification on procurement cycle time at the MLGPW:

1. **Supplier Diversification Leads to Reduced Risks:** The study assumed that increasing the diversity of suppliers reduces the risks associated with supply chain disruptions. This assumption was based on the idea that a more diverse supplier base offers greater flexibility and resilience, thereby contributing to shorter procurement cycle times.
2. **Procurement Cycle Time Is a Reliable Metric of Efficiency:** It is assumed that the procurement cycle time accurately reflects the efficiency of procurement processes within the ministry. This assumption allows the study to use cycle time as a key variable to assess the impact of supplier diversification.
3. **Data Used for Analysis Is Accurate and Reliable:** The study assumed that the data collected for the research is accurate and representative of the ministry's procurement processes. The assumption is critical for ensuring the validity of the study's findings.
4. **Stakeholders Willing to Collaborate:** The study assumed that key stakeholders, that is the ministry officials, are willing to collaborate and provide information for the research. This assumption was crucial for obtaining the data needed to analyse the relationship between supplier diversification and procurement cycle time.
5. **Supplier Diversification Positively Impacts Procurement Processes:** This assumption posited that a more diverse supplier base is beneficial for the procurement processes within the ministry. It aligned with the hypothesis that increased supplier diversity correlates with shorter procurement cycle times and improved efficiency.

1.9 Delimitations of the study

Delimitations of the study define the boundaries or scope within which the research is conducted. They set limits on what the study will cover and provide clarity on the focus,

methodology, and context. Delimitations help to manage the complexity of research and ensure that the study is feasible and manageable within given constraints.

Geographical Scope: The study was limited to the MLGPW, head office in Harare. It does not include other government ministries or departments. This delimitation focused the research on a specific context, allowing for more detailed analysis and tailored recommendations.

Time Frame: The study was executed over a period of 6 months.

Procurement Processes Covered: The study was delimited to specific procurement processes within the ministry. It focused on major procurement categories such as construction projects, maintenance, and public infrastructure. This delimitation ensured that the study remains focused on relevant processes that have a significant impact on procurement cycle time.

1.10 Limitations of the study

Limitations of a study refer to the constraints or weaknesses that may affect the validity, reliability, or generalizability of the research results. These limitations are inherent to the study's design, scope, methodology, or context and must be acknowledged to provide a comprehensive understanding of the research. Here are the limitations for a study on the effect of supplier diversification on procurement cycle time at the MLGPW:

1. **Limited Generalizability:** The study focused on the MLGPW in Zimbabwe. As such, the findings may not be generalizable to other government ministries or countries with different procurement systems, economic conditions, or regulatory environments. This limitation restricts the broader application of the study's conclusions.
2. **Regulatory and Bureaucratic Factors:** The research may encounter limitations due to regulatory hurdles or bureaucratic inefficiencies within the ministry. These factors can impede data collection, access to stakeholders, or the implementation of supplier diversification strategies, affecting the study's comprehensiveness.
3. **Uncontrolled External Variables:** The study might be influenced by external variables beyond the researcher's control, such as global supply chain disruptions, natural disasters, or international trade policies. These factors could affect supplier availability and procurement cycle times, making it difficult to isolate the impact of supplier diversification alone.

1.11 Definitions of key terms

Supplier Diversification: The practice of engaging multiple suppliers to meet procurement needs instead of relying on a single source.

Procurement Cycle Time: The total time taken from the identification of a procurement need to the final delivery of goods or services.

Ministry of Local Government and Public Works: A government body in Zimbabwe responsible for overseeing local government operations and public works projects. This ministry plays a central role in managing procurement processes for infrastructure and community development.

1.12 Chapter Summary

The chapter provided an overview of the study, covering the context, problem statement, research objectives, and questions. It also outlined the research hypothesis, study assumptions, and the significance of the research. Additionally, the chapter addressed the delimitations and limitations that frame the study's scope and methodology. The next chapter will delve into existing research and previous work by other scholars related to the topic.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The procurement cycle is a critical component of the operational efficiency in public sector organizations, directly impacting their ability to deliver services effectively. At the Ministry of Local Government and Public Works, enhancing this cycle is paramount to improving responsiveness and service quality. An essential strategy that has garnered attention for its potential to influence procurement efficiency is supplier diversification. This literature review aimed to explore the effect of supplier diversification on procurement cycle time, providing a comprehensive examination of existing research and theories that discuss the dynamics and implications of diversifying supplier bases in public procurement settings.

2.2 Theoretical Framework

2.2.1 Resource Dependence Theory (RDT)

Resource Dependence Theory (RDT), initially developed by Jeffrey Pfeffer and Gerald Salancik in their seminal 1978 work, "The External Control of Organizations: A Resource Dependence Perspective," provides a robust framework for understanding the power dynamics and dependencies that organizations navigate within their external environments. Central to RDT are the concepts that organizations are not self-sufficient; they rely on external resources to survive, which can create dependencies on external entities like suppliers. Organizations, therefore, strive to manage and mitigate these dependencies to maintain autonomy and control over their operations (Pfeffer & Salancik, 1978). Applying RDT to the study of the effect of supplier diversification on procurement cycle time at the MLGPW is particularly apt. The tenets of RDT suggest that by diversifying its supplier base, an organization can reduce its dependency on any single supplier. This reduction in dependency is critical because it minimizes the influence that any one supplier might have over the organization, potentially leading to more favourable terms and reduced procurement cycle times (Lowasikou & Iravo, 2016). When a public organization like the MLGPW is less dependent on individual suppliers, it can leverage competition among suppliers to ensure timely deliveries and potentially better pricing and terms.

Additionally, supplier diversification, as informed by RDT, enhances the Ministry's ability to manage risks associated with supplier failure or supply chain disruptions. In scenarios where a single supplier might face operational challenges, having multiple suppliers ensures that the procurement process remains uninterrupted, thereby maintaining the efficiency of procurement cycles (Salimian, Rashidirad & Soltani, 2021). This strategic approach aligns with RDT's advocacy for reducing external control and increasing organizational autonomy (Pfeffer & Salancik, 1978). Furthermore, from an RDT perspective, supplier diversification can empower the MLGPW by broadening its resource base, thus enabling it to negotiate from a position of strength rather than one of need. This can directly contribute to improved procurement efficiency, as the Ministry can secure resources more quickly and on more competitive terms.

In summary, the use of RDT in this study on the MLGPW's procurement practices provides a theoretical justification for supplier diversification as a strategic tool to decrease dependence, mitigate risks, and enhance procurement efficiency. By applying the principles of RDT, the Ministry can effectively analyse and structure its supplier relationships to optimize its procurement cycle times, aligning with the theory's emphasis on managing external dependencies to improve organizational outcomes (Golmohammadi & Hassini, 2020).

2.2.2 Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE) is a theoretical framework pioneered by economist Oliver E. Williamson in the 1970s. It primarily focuses on understanding the transaction costs associated with economic exchanges, particularly when there is a high degree of uncertainty and frequency of transactions, and the specificity of assets is substantial. Central to TCE is the idea that these transaction costs can significantly impact organizational behaviour and the choice between making a product or service internally versus buying it from the market (Williamson, 1979).

The application of TCE to the study of the effect of supplier diversification on procurement cycle time at the MLGPW is particularly relevant. TCE suggests that diversifying suppliers can effectively reduce the transaction costs associated with procurement activities. By broadening the supplier base, the Ministry can decrease dependency on single suppliers, which often involves negotiation complexities and high costs in monitoring and enforcing agreements. Diversifying suppliers reduces these risks and the potential for opportunistic behaviour by suppliers, as reliance on any single supplier decreases (Williamson, 1985).

Furthermore, TCE posits that reducing the number of critical, single-source suppliers can mitigate the hazards of renegotiation and potential disruptions, which can prolong procurement cycles (Dong, Geng, Xiao & Yang, 2022). By having multiple suppliers, the Ministry can foster competition and potentially lower the costs and time associated with securing goods and services. Supplier diversification can also offer flexibility, enabling the Ministry to switch suppliers more readily in response to performance issues or changes in demand, thus optimizing the procurement process and reducing cycle times (Williamson, 1985).

Additionally, the diversified supplier strategy aligns with TCE's emphasis on the importance of adapting governance structures to minimize transaction costs. By implementing a supplier diversification policy, the Ministry can create a more competitive environment that inherently discourages non-cooperative behaviour and aligns more closely with efficient procurement practices (Williamson, 1979).

In summary, using TCE as a theoretical lens to examine supplier diversification at the MLGPW allows for a focused analysis on how reducing dependency on individual suppliers through diversification can decrease transaction costs and enhance the efficiency of the procurement cycle. This approach not only helps in understanding the economic implications of procurement strategies but also assists in designing mechanisms that can reduce costs and improve service delivery in public procurement systems.

2.2.3 Supply Chain Management Theory

Supply Chain Management Theory, which broadly encompasses various principles and practices aimed at optimizing the flow of goods, services, and information from suppliers to customers, has evolved significantly over the decades. While no single founder is credited with this theory, it has been shaped by the contributions of many scholars and practitioners across the fields of operations research, logistics, and business strategy (Goldschmidt, Kremer, Thomas & Craighead, 2021). One of the core tenets of Supply Chain Management Theory is the integration and coordination of various elements within the supply chain to reduce costs and improve performance. This involves strategies such as just-in-time delivery, lean manufacturing, and supplier diversification (Witter et al., 2020). The latter is particularly relevant as it addresses the dependencies and vulnerabilities associated with relying on a limited number of suppliers.

Applying Supply Chain Management Theory to the study of the effect of supplier diversification on procurement cycle time at the MLGPW is highly pertinent. Supplier diversification is viewed as a critical strategy for reducing supply chain risks and enhancing resilience. By broadening the base of suppliers, the Ministry can mitigate the risks associated with supply chain disruptions, such as delays, shortages, or quality issues, which can adversely affect the procurement cycle time (Wissuwa, Durach & Choi, 2022). Furthermore, diversification can improve the Ministry's bargaining power and enable more competitive sourcing, which may lead to better pricing and terms, ultimately reducing the overall procurement cycle time (van Hoek & Dobrzykowski, 2021). In addition, by having multiple suppliers, the Ministry can ensure a more reliable supply of goods and services, which is crucial for maintaining continuous operations and meeting the needs of the public efficiently.

In essence, Supply Chain Management Theory supports the idea that strategic supplier diversification not only enhances the efficiency and reliability of the procurement process but also contributes to a more agile and responsive public service delivery system. This theoretical framework provides a solid foundation for examining how diversification impacts procurement dynamics within the MLGPW, highlighting the potential for significant improvements in both cycle times and risk management (Thevenin et al., 2022).

2.2.4 Portfolio Theory

Portfolio Theory, primarily developed by Harry Markowitz in his seminal 1952 paper, focuses on the optimization of asset allocation to maximize returns and minimize risk in an investment portfolio. Central to Portfolio Theory is the concept of diversification, which suggests that investing in a variety of assets can reduce the overall risk of the portfolio due to the differing performance of assets under various conditions (Markowitz, 1952). Applying Portfolio Theory to the study of the effect of supplier diversification on procurement cycle time at the MLGPW offers a novel perspective. In this context, suppliers are analogous to assets in an investment portfolio. Just as diversifying investments can reduce financial risk, diversifying suppliers can mitigate procurement risks. These risks include delays, quality issues, and price fluctuations, which can all impact procurement cycle times.

By diversifying its supplier base, the MLGPW can reduce its dependence on any single supplier, thereby decreasing the likelihood that issues with one supplier will disrupt the entire procurement process (Svoboda et al., 2021). This is akin to the reduction of unsystematic risk in a diversified investment portfolio (Sonar et al., 2022). Supplier diversification spreads the

procurement risk across multiple sources, which can lead to more stable and predictable procurement cycles (Shan et al., 2023). This stability can be crucial for government operations, where timely procurement of goods and services is often critical to public service delivery (Markowitz, 1952). Moreover, supplier diversification can also potentially lead to improved negotiation power and better terms, which can further enhance procurement efficiency. Just as Portfolio Theory advocates for diversification to achieve better financial outcomes, applying this principle to supplier management can help the Ministry optimize its procurement processes, reduce cycle times, and enhance overall operational efficiency (Markowitz, 1952). In conclusion, Portfolio Theory provides a robust theoretical framework that supports the strategic diversification of suppliers to improve procurement practices at the MLGPW. By applying the principles of risk reduction through diversification, the Ministry can achieve a more efficient and reliable procurement system.

2.2.5 Agency Theory

Agency Theory, developed by economists Michael Jensen and William Meckling in their influential 1976 paper, is fundamentally concerned with resolving problems that can occur in relationships due to conflicts of interest between parties, where one party (the agent) is expected to act on behalf of another (the principal). Central to the theory is the idea that there is often a divergence in the goals of the principal and agent, coupled with issues related to information asymmetry, which can lead to the agent acting in their own best interest rather than that of the principal (Shan et al., 2023). Applying Agency Theory to the study of the effect of supplier diversification on procurement cycle time at the Ministry of Local Government and Public Works (MLGPW) is particularly relevant. In this context, the MLGPW (the principal) relies on various suppliers (the agents) to provide goods and services. Agency Theory would suggest that without proper oversight and incentives, suppliers might not always act in the best interest of the MLGPW (Saputro et al., 2022), potentially leading to increased procurement cycle times due to inefficiencies or opportunistic behaviours.

Supplier diversification can be seen as a strategy to mitigate these risks (Li et al., 2022). By diversifying its supplier base, the Ministry reduces its dependence on any single supplier and thereby minimizes the risk associated with any single agent's potential to act opportunistically. This not only aligns the incentives more closely with the MLGPW's goals by introducing competitive pressures but also reduces the impact of any single supplier's failure or underperformance on the overall procurement cycle. Moreover, supplier diversification can enhance negotiation power for the Ministry, leading to better compliance with procurement

terms and timelines (Jain et al., 2022). Diversification effectively creates a competitive environment where suppliers are motivated to perform efficiently and align their actions more closely with the expectations of the MLGPW to maintain their business relationships. In summary, Agency Theory provides a valuable lens through which to view the procurement process at the MLGPW. By understanding and applying the principles of this theory, the Ministry can strategically manage supplier relationships to reduce cycle times and improve the efficiency and reliability of its procurement operations.

2.3 Empirical Evidence

2.3.1 Supplier diversification practices

Lowasikou and Iravo (2016) conducted a study on evaluating supplier diversification strategies in public sector procurement and the objective of this study is to analyze the extent and effectiveness of supplier diversification in government procurement processes. The methodology employed involves a quantitative review of procurement data from 10 different government ministries collected over five years, supplemented by structured interviews with procurement officials. Findings from the study reveal a significant lack of formal strategies for supplier diversification across the ministries, leading to a heightened dependency on a limited number of suppliers. Consequently, the study recommends that ministries implement structured supplier diversification policies and establish frameworks for the regular assessment of supplier performance. This approach aims to enhance procurement efficiency and mitigate associated risks by reducing over-reliance on specific suppliers.

Wang, Zhou and Zhao (2023) conducted study on the impact of supplier diversity on procurement efficiency in government departments. This research investigates how supplier diversity impacts procurement efficiency and risk management within government departments. It adopts a mixed-method approach that combines qualitative insights from case studies conducted in several departments with quantitative analysis to evaluate efficiency metrics. The results indicate that departments with a broader base of suppliers tend to achieve better procurement efficiency and experience fewer risks related to procurement activities. Based on these findings, the study advocates for the enhancement of supplier diversity programs and the incorporation of diversity goals into the strategic procurement plans of government ministries. Enhancing supplier diversity is posited as a means to improve service delivery and operational stability by fostering a competitive and resilient supply chain.

2.3.2 The impact of supplier diversification on the procurement cycle time

Bai, Zhu and Sarkis (2022) conducted a study on the strategic impact of supplier diversification on procurement cycle efficiency within government ministries. Utilizing statistical analysis, the research examined procurement data across 20 ministries over a seven-year period. The study found that ministries employing a strategic approach to supplier diversification reported shorter procurement cycles and fewer delays compared to those with less diversified supplier bases. Recommendations from this study emphasize the adoption of a strategic framework for supplier selection and management to optimize procurement operations and enhance overall efficiency.

Saputro, Figueira and Almada-Lobo (2022) also explored the cost implications of supplier diversification in public sector procurement. Through a cost-benefit analysis comparing ministries with varied levels of supplier diversification, the research revealed that those with higher levels of diversification experienced significant long-term cost savings, mainly due to competitive pricing and reduced supply chain risks. Consequently, the study advocates for further investment in supplier management systems that can track and optimize the contributions of various suppliers to achieve cost-effectiveness.

Another study conducted by Svoboda, Minner and Yao (2021) assessed how supplier diversification can serve as an effective risk management tool in public sector procurement. By conducting risk analyses and interviewing risk management professionals from various government departments, it was found that diversified supplier portfolios substantially mitigate procurement risks, such as supply disruption and non-compliance. The study concludes with a recommendation for the development of integrated risk management strategies that incorporate supplier diversification as a core element.

Dong, Geng, Xiao and Yang (2022) also investigated the relationship between supplier diversity and innovation in public procurement. The analysis showed that government ministries engaging with a diverse range of suppliers reported higher innovation levels, particularly in procurement solutions and technological advancements. The recommendations focus on enhancing supplier engagement policies to foster a more innovative procurement environment.

Lastly, Thevenin, Ben-Ammar and Brahimi (2022) examined the broader socio-economic impacts of implementing supplier diversification strategies within government procurement through socio-economic impact analysis tools. The results indicated that ministries practicing supplier diversification contribute more significantly to local economies and promote

competitive business practices. The study recommends policies that prioritize local and diverse suppliers to amplify these socio-economic benefits.

Together, these studies provide a detailed understanding of the multifaceted impacts of supplier diversification on government procurement, advocating for strategic, cost-effective, and risk-managed approaches to enhance public sector procurement practices.

2.3.3 Optimizing supplier diversification strategies to reduce procurement cycle

Alhammadi, Yusaf, Soar, Ali, Kadirgama and Yousif (2024) conducted a study on optimizing the supplier base to reduce procurement cycle times at a government ministry. This study utilized quantitative analysis of historical procurement data to identify correlations between the number of suppliers and cycle times. Findings suggest that a moderate level of supplier diversification significantly reduces cycle times without compromising supply security. Recommendations include implementing a strategic supplier management program that targets an optimal number of key suppliers.

Shaoping (2023) conducted a study on the impact of supplier geographic diversity on procurement efficiency. The methodology combined spatial analysis of supplier locations with qualitative interviews of procurement officials, assessing how the proximity of suppliers to operational centers influences procurement cycles. The results indicate that strategically located suppliers can reduce delivery times and enhance overall procurement efficiency, leading to recommendations for enhancing geographic diversification.

Borajee, Tavakkoli-Moghaddam and Madani-Saatchi (2023) conducted a study on the role of supplier performance metrics in optimizing procurement cycles. The study used a quantitative approach to analyze how performance tracking influences procurement efficiency. Results demonstrated that ministries with rigorous supplier performance evaluation systems experienced shorter and more predictable procurement cycles. Recommendations call for the implementation of comprehensive supplier performance management systems.

2.4 Research Gap

Despite extensive research on supplier diversification, there remains a notable gap in the specific context of its effect on procurement cycle time within public sector institutions like the Ministry of Local Government and Public Works. Previous studies have primarily focused on broad supply chain management and risk reduction across diverse industries, with less attention given to how supplier diversification directly influences the length of procurement

cycles in government settings. This gap underscores the need for targeted research that evaluates the operational impacts of supplier diversification on procurement efficiency, specifically within the unique regulatory and operational frameworks of public sector procurement.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The chapter outlined the research methodology used in this study, covering the research design, population, sample size, sampling methods, research instruments, and the evaluation of validity and reliability. This study employed a quantitative research approach.

3.2 Research Philosophy

A positivist philosophy was adopted in the study that investigated the effect of supplier diversification on procurement cycle time at MLGPW. Positivism is a research philosophy that embraces the view that reality is objective, observable, and measurable (Kivunja & Kuyini, 2017; Lemon, 2021). It emphasizes the use of empirical methods and scientific inquiry to understand phenomena and establish causal relationships between variables (Antwi & Hamza, 2015; Mehta, 2021).

The positivist philosophy was appropriate for this study as it aimed to objectively examine the relationship between supplier diversification and procurement cycle time, which are quantifiable variables. The study sought to measure and analyze the impact of introducing a greater number of suppliers on the duration of the procurement process (Kivunja & Kuyini, 2017). By adopting a positivist approach, the researcher could collect and analyze numerical data, such as the number of suppliers involved, the time taken at each stage of the procurement cycle, and other relevant metrics (Lemon, 2021). This allowed for the identification of patterns, trends, and potential causal relationships between supplier diversification and procurement cycle time (Antwi & Hamza, 2015). Furthermore, the positivist philosophy aligned with the study's objective of providing empirical evidence and practical recommendations for optimizing the procurement process at the MLGPW. Through statistical analysis and hypothesis testing, the researcher could draw objective conclusions and make data-driven recommendations for leveraging supplier diversification to enhance the efficiency of procurement cycles (Mehta, 2021). This approach facilitated the development of evidence-based strategies and policies aimed at improving the ministry's procurement practices (Kivunja & Kuyini, 2017; Lemon, 2021).

3.3 Research Design

An explanatory research design was utilized in the study that investigated the effect of supplier diversification on procurement cycle time at the MLGPW. Explanatory research designs are employed to identify causal relationships between variables and explain the underlying reasons or mechanisms behind observed phenomena (Creswell & Creswell, 2021; Marczyk et al., 2021).

The use of an explanatory research design was appropriate for this study as it aimed to establish and understand the relationship between supplier diversification, which was the independent variable, and procurement cycle time, the dependent variable (Marczyk et al., 2021). By employing this design, the researcher could systematically examine how changes in the level of supplier diversification influenced or explained variations in the duration of the procurement cycle (Creswell & Creswell, 2021). Through the explanatory research design, the study could investigate the specific factors or mechanisms that contributed to the observed relationship between supplier diversification and procurement cycle time (Marczyk et al., 2021). Furthermore, the explanatory design enabled the researcher to control for potential confounding variables that might influence the relationship between supplier diversification and procurement cycle time (Marczyk et al., 2021). By accounting for factors like procurement regulations, organizational policies, or market conditions, the study could isolate the specific effect of supplier diversification and provide more robust and reliable findings (Creswell & Creswell, 2021).

3.4 Study Population

The study population consisted of procurement officers (34), managers (9) and heads of departments (11), finance department personnel (22) and project managers (11), thus a total of 87.

Procurement Officers: Individuals directly involved in the procurement process who can provide insights into how supplier diversification impacts cycle times.

Department Heads: Managers and heads of departments within the MLGPW who oversee procurement activities and can provide strategic perspectives on supplier diversification.

Finance Department Personnel: Staff involved in the financial aspects of procurement who can provide data on cycle times and any observed financial impacts.

Project Managers: Individuals managing specific projects that require procurement, who can provide examples of how supplier diversity impacts project timelines.

3.5 Sampling Techniques

The research employed a combination of stratified and simple random sampling techniques. With stratified sampling, the target population was first divided into separate groups or strata based on their department types. This step involved categorizing the sampling frame into homogeneous subgroups using department type as the stratification criterion before selecting the sample. Subsequently, simple random sampling was used to choose participants from each stratum. This random selection process allows for the generalization of the study's findings to the larger population. Simple random sampling guarantees that every member of the study has an equal chance of being chosen, eliminating potential biases (Silverman, 2011).

3.6 Sample Size

To determine the appropriate sample size for participants for the study, Slovin's formula was employed. Following the recommendation of Creswell and Clark (2018), a 95% confidence level was chosen, indicating a 95% probability that the sample accurately reflects the true population status within a specific margin of error, with a 5% probability of not doing so. Slovin's formula is used to calculate sample sizes that achieve a desired level of accuracy. In this study, the sample consisted of 72 participants. The calculation of Slovin's formula is as follows:

$$n = N / (1 + Ne^2)$$

Where:

- n represents the required sample size.
- N is the total population size.
- e is the desired margin of error, expressed as a decimal.

Therefore: $87 / ((87 * (0.05)^2) + 1) = 72$

3.7 Data Collection Methods

Structured questionnaires were the main instrument for data collection in this study. This approach was selected due to its alignment with the research design and its efficiency in terms

of cost and time. The questionnaires included items utilizing the Likert scale, enabling respondents to indicate their level of agreement or disagreement. The Likert scale, ranging from 1 to 5, offered response options from "strongly agree" to "strongly disagree," and was used to assess participants responses. The questionnaires were handily delivered and collected after 5 days.

3.7.1 Structured Questionnaire

The study involved the distribution of structured questionnaires to a sample of 72 participants. A structured questionnaire is a research tool that consists of a predetermined set of questions presented in a specific order and format. It is designed to gather information from respondents in a systematic manner (Yin, 2017). This type of questionnaire, also known as a closed questionnaire, aligns well with the positivist research approach adopted in this study. The decision to utilize structured questionnaires was based on several advantages they offer. Firstly, the fixed and rigid answer options provided by the questionnaire minimize confusion and ensure consistency in responses (Bryman and Bell, 2010). Secondly, the results obtained from these questionnaires can be analyzed and interpreted in the context of established theories, enabling meaningful conclusions to be drawn about the target groups (Gliem and Gliem, 2013). Moreover, the findings can be extrapolated to inform important business decisions (Polit and Hungler, 2006). Additionally, the structured format of the questions facilitates easy quantification of responses and allows for statistical analysis (Creswell and Creswell, 2017).

3.8 Pilot Testing

Before conducting the main study, the researcher performed a pilot test of the questionnaires with 5 employees from MLGPW. The aim of a pilot study was to assess the practicality of the techniques, methods, and questionnaires used, and to see how they function together in a specific context. Additionally, it can uncover potential ethical or practical issues that could impede the successful completion of the main study (Bell, 2005). As a result, the pilot study helped the researcher identify any design flaws, refine the data collection and analysis processes, and gain insights into the potential burden on participants before proceeding with the larger-scale research project.

3.9 Reliability and Validity

In this study, content validity was employed, which assesses the extent to which the data collected using a specific instrument accurately represents the specific domain or concept under investigation. To establish content validity, a pilot group of 5 individuals who were not part of the target population was selected to evaluate the validity of the research instruments.

To ensure instrument reliability, a separate pilot group of 5 individuals who were not part of the target population was chosen to test the reliability of the research instruments within one constituency. The data collected from the pilot study was then input into SPSS, and reliability was assessed using Cronbach's Alpha coefficient. Cronbach's Alpha coefficient, ranging from 0 to 1, is used to measure the reliability of factors derived from dichotomous or multi-point formatted questionnaires or scales. A higher alpha value indicates greater reliability, with values above 0.7 generally considered acceptable for most research purposes.

3.10 Data Analysis and Presentation

The researcher checked for completeness of questionnaires and performed editing, coding and general cleaning of the data. The data collected was analyzed using the Statistical Package for Social Sciences (SPSS Version 25.0) and Microsoft Excel for report generation. Descriptive analysis involved calculating the mean, mode, variance, and standard deviation to gauge respondents' agreement with statements for each variable. Inferential statistics utilized Ordered Logistic Regression to examine the relationship between the independent (supplier diversification) and dependent variable (procurement cycle). The results were visually presented through tables, pie charts, and bar graphs.

3.11 Model specification

The study used Ordered Logistic Regression model to analyze the data collected through the structured questionnaires. The Ordered Logistic Regression model equation is represented as follows:

$$\text{Logit [P (Procurement Cycle Time} \leq j)] = \alpha_j - (\beta_1 \text{Supplier Diversification} + \beta_2 X_2 + \dots + \beta_k X_k)$$

Where:

Procurement Cycle Time is the ordinal dependent variable, was measured using a Likert scale (, 1 = Very Short, 2 = Short, 3 = Average, 4 = Long, 5 = Very Long).

j represents the different categories or levels of the ordinal dependent variable (Procurement Cycle Time).

α_j is the cut-point or threshold parameter for the j th category of Procurement Cycle Time.

Supplier Diversification is the independent variable of primary interest, which could be a continuous variable (e.g., the number of suppliers involved) or a categorical variable (e.g., low, medium, high diversification).

β_1 is the regression coefficient associated with Supplier Diversification, indicating the effect of supplier diversification on the cumulative logit of being at or below a particular category of Procurement Cycle Time.

$X_2, X_3, \dots, X_k$ are other independent variables or control variables that may influence the procurement cycle time, such as procurement regulations, organizational policies, market conditions, or demographic characteristics of the respondents.

$\beta_2, \beta_3, \dots, \beta_k$ are the respective regression coefficients associated with these additional independent variables.

In this context, the Ordered Logistic Regression model allowed the researcher to assess the relationship between supplier diversification and procurement cycle time while controlling for other relevant factors. A positive value of β_1 would suggest that as supplier diversification increases, the odds of being in a higher category of procurement cycle time (e.g., "Long" or "Very Long") also increase. Conversely, a negative value of β_1 would indicate that higher supplier diversification is associated with lower categories of procurement cycle time (e.g., "Short" or "Very Short"). The model can provide insights into the direction and strength of the relationship between supplier diversification and procurement cycle time, as well as the potential impact of other variables on this relationship. This information can inform strategies and policies aimed at optimizing procurement processes and leveraging supplier diversification effectively within the MLGPW.

3.12 Ethical Considerations

The research received ethical clearance from the University Research Ethics Committee and obtained permission from both the MLGPW and the participants to conduct the study. Participants were informed that their anonymity and confidentiality would be maintained throughout the research process. Informed consent was secured from each participant,

highlighting their right to withdraw from the study at any time. Before the research began, participants were given consent forms explaining their rights and requiring their signatures. No financial or other incentives were offered to ensure voluntary participation. The importance of confidentiality was emphasized, assuring participants that their data would be securely stored. It is crucial for research to prioritize participant protection and address ethical issues such as informed consent, confidentiality, and participant well-being (Hancock and Algozzine, 2016).

3.13 Chapter Summary

This chapter outlines the quantitative research methodology utilized in the study. It includes details on the research design, target population, sampling methods and sample size, research instruments, data collection process, and data analysis. The following chapter will address data analysis, presentation, and interpretation.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

The study aimed to investigate the impact of supplier diversification on procurement cycle time at MLGPW. This chapter presents the findings in alignment with the study's objectives. Data was displayed using tables, pie charts, and bar graphs, all analysed with SPSS. Both descriptive and inferential statistical methods were employed for data analysis.

4.2 Response Rate of Research Instruments

A total sample of 72 respondents was targeted for this study. Questionnaires were distributed to all 72 participants.

Table 1: Percentage Distribution of Responses (n=72)

	Frequency	Rate
Questionnaires administered	72	100%
Questionnaires returned	70	97%

The response rate for the research instruments was notably high. Out of 72 questionnaires administered, 70 were completed and returned, resulting in a response rate of 97%. This high response rate indicates strong participant engagement and provides a reliable data set for analysis. The nearly complete return rate suggests that the findings derived from this data are likely to be robust and reflective of the targeted population's perspectives.

4.3 Demographics of the Participants

The demographics of the respondents encompassed factors such as gender, age, educational qualifications, and period of service. Understanding these demographics is crucial when analysing responses, as they can significantly influence individual perceptions and behaviours.

4.3.1. Gender of Participants

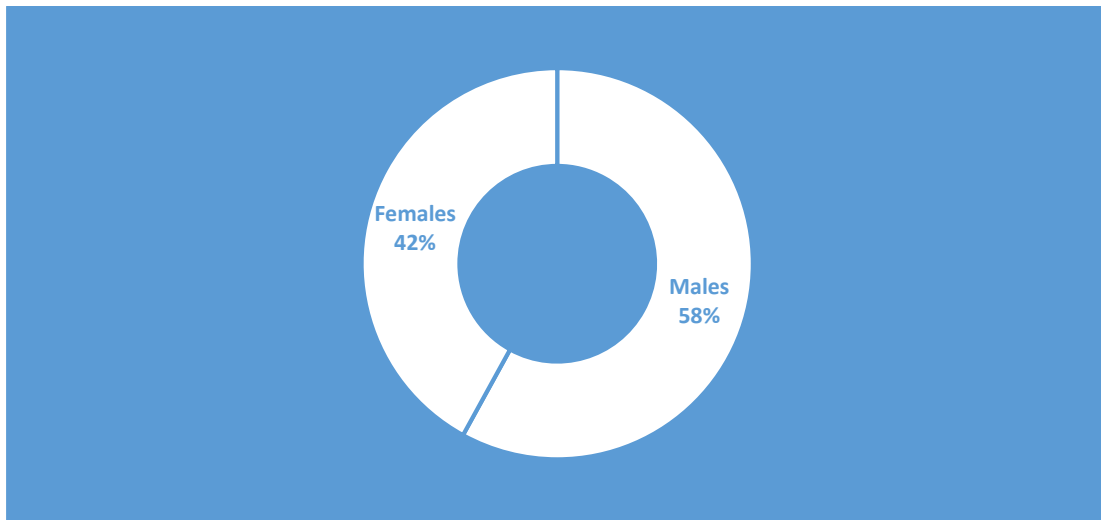


Figure 1: Gender of Participants

Source: *Primary Data 2024*

The gender distribution of the participants in the study shows that 58% are males, while 42% are females. This indicates a slightly higher representation of male respondents compared to female respondents. The gender ratio suggests a relatively balanced but male-dominant participation, which could be reflective of the gender composition within the target population of the study.

4.3.2. Age of the Participants

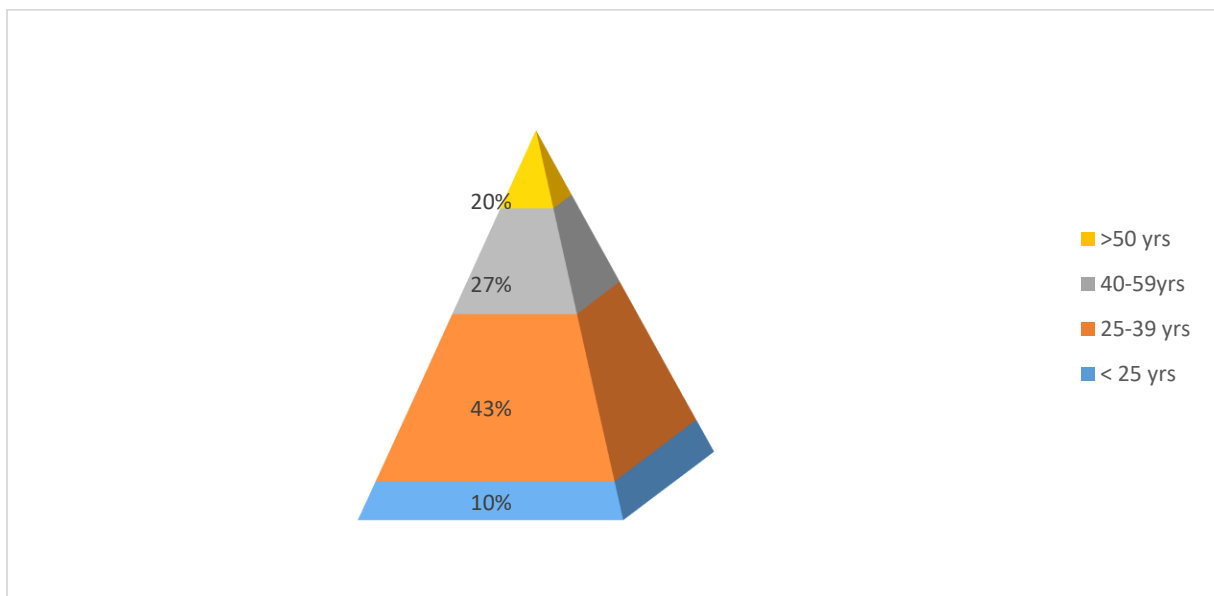


Figure 2: Age of Respondents

Source: *Primary Data 2024*

The age distribution of the respondents was as follows: 10% are under 25 years old, 43% are between 25 and 39 years old, 27% are between 40 and 59 years old, and 20% are over 50 years old. This indicates that the largest age group among the respondents is the 25-39 years category, which constitutes almost half of the participants. The next largest group is the 40-59 years category, followed by those over 50 years, and the smallest group is those under 25 years. The diverse age range of respondents provides a broad perspective on the study's topic, incorporating views from various stages of professional and personal experience.

4.3.3. Educational Levels of the Participants

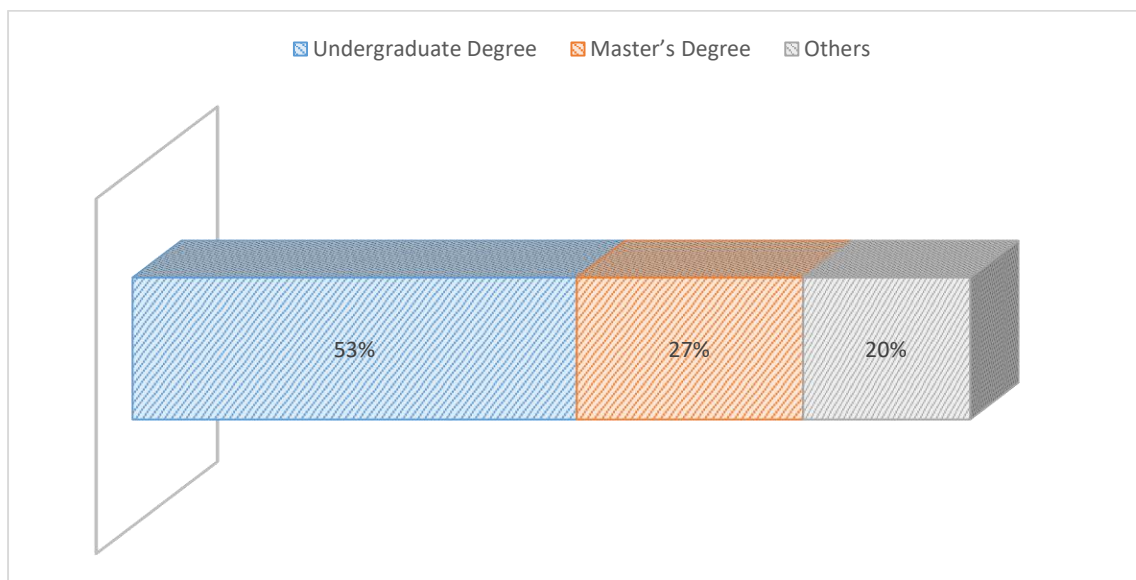


Figure 3: Educational Levels

Source: *Primary Data 2024*

The educational background of the participants indicates that a majority, 53%, hold an undergraduate degree. Additionally, 27% of the respondents have obtained a master's degree, while 20% have other forms of education, which may include diplomas, professional certifications, or other qualifications. This distribution suggests that the sample is well-educated, with a significant portion of participants having advanced degrees. The variety in educational levels ensures that the study captures diverse insights and perspectives based on different levels of academic and professional training.

4.3.4. Period of Services

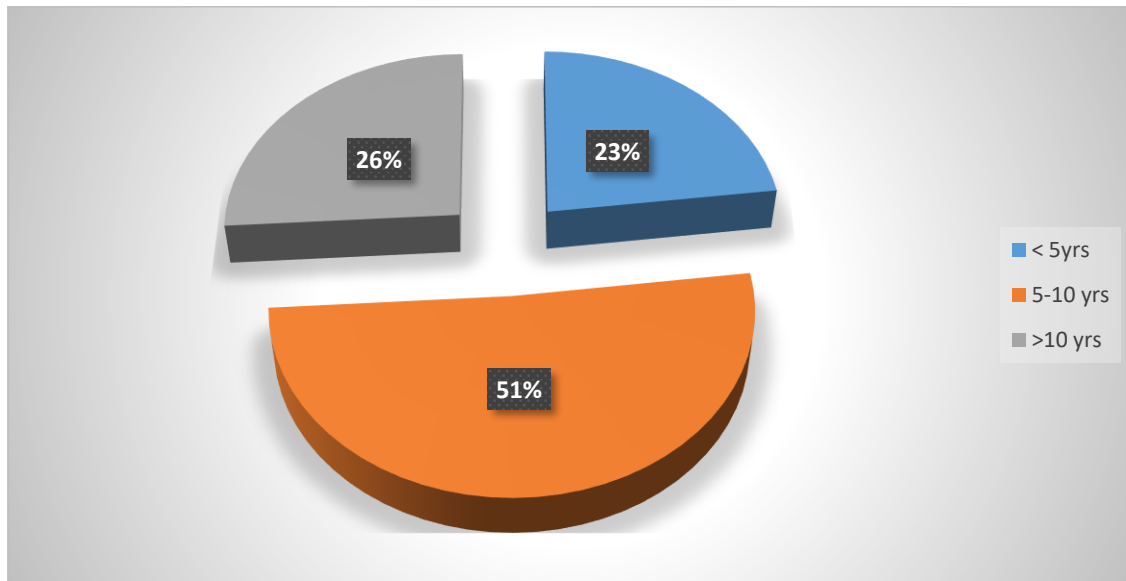


Figure 4: Period of Services

Source: *Primary Data 2024*

The period of service for employees at MLGPW shows that the largest group, 51%, have been with the organization for 5-10 years. This indicates a significant portion of the workforce has a mid-range tenure, suggesting stability and experience within this group. Employees with less than 5 years of service account for 23% of the respondents, representing a considerable portion of relatively newer staff. Meanwhile, 26% of the respondents have been with MLGPW for more than 10 years, indicating a strong presence of long-term employees who bring extensive experience to the organization. This distribution reflects a balanced mix of new, mid-tenure, and long-tenure employees, providing a comprehensive perspective on the organization's operations and strategies.

4.4 The current forms of supplier diversification practices at MLGPW

The sought to assess the current forms of supplier diversification practices at MLGPW and computed results are table 4.2.

Table 2: Forms of supplier diversification practices at MLGPW

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Product and service diversification	70	4.9189	.03195	.27482
Geographical diversification	70	4.7838	.05533	.47601
Rotational Sourcing	70	4.7338	.06740	.57980
Supplier size diversification	70	4.4459	.08636	.74285
Supplier base expansion	70	4.3453	.09648	.82995
Tiered Contracting	70	4.1189	.09026	.77648
Supplier ownership diversification	70	4.0054	.05746	.49432
Valid N (listwise)	70			

The data provided summarizes the current forms of supplier diversification practices at the Ministry of Local Government and Public Works (MLGPW) based on a sample size of 70. Product and service diversification, which involves sourcing a wider variety of products and services from suppliers to reduce dependence on any one supplier and enhance supply chain flexibility, has the highest mean rating of 4.9189. This indicates it is widely valued and effectively implemented, with relatively low variability in responses ($SE = .03195$, $SD = .27482$). Geographical diversification, sourcing from suppliers in different locations to mitigate risks from natural disasters, political instability, or trade disruptions, has the second highest mean rating of 4.7838, suggesting strong implementation with moderate variability ($SE = .05533$, $SD = .47601$). Rotational sourcing, where different suppliers are given cyclical opportunities to provide goods or services, has a mean rating of 4.7338 with moderate variability ($SE = .06740$, $SD = .57980$). Supplier size diversification, sourcing from suppliers of different sizes to leverage the strengths of both large and small businesses, has a mean rating of 4.4459 with higher variability ($SE = .08636$, $SD = .74285$). Supplier base expansion, involving the identification and addition of new suppliers through diverse supplier organizations, trade shows, or online directories, has a mean rating of 4.3453, indicating considerable variability in its perception and implementation ($SE = .09648$, $SD = .82995$). Tiered contracting, which encourages primary contractors to subcontract portions of their work to diverse suppliers, spreading opportunities across multiple vendors, has a mean rating of

4.1189 ($SE = .09026$, $SD = .77648$). Lastly, supplier ownership diversification, including diverse businesses such as women-owned, minority-owned, or veteran-owned businesses in the supplier base to promote social responsibility and economic development, has a mean rating of 4.0054, with moderate variability ($SE = .05746$, $SD = .49432$). Overall, these practices demonstrate varying degrees of implementation and perception among respondents.

4.5 The impact of supplier diversification on the procurement cycle time at MLGPW

The study aimed at establishing the impact of supplier diversification on the procurement cycle time at MLGPW.

Table 3: Frequency Distribution for Dependent Variable (the procurement cycle time)

Response	Frequency
Very Short (1)	14
Short (2)	35
Average (3)	10
Long (4)	7
Very Long (5)	4

The data collected for the procurement cycle time at MLGPW were measured using an ordinal scale, where respondents indicated the length of the procurement cycle time with values ranging from 1 (Very Short) to 5 (Very Long). The frequency distribution of responses is as follows: 14 respondents indicated that the procurement cycle time is "Very Short," 35 respondents indicated it is "Short," 10 respondents indicated it is "Average," 7 respondents indicated it is "Long," and 4 respondents indicated it is "Very Long." The majority of the respondents perceive the procurement cycle time as either "Short" or "Very Short." Specifically, 35 respondents (50% of the total) rated the cycle time as "Short," and 14 respondents (20%) rated it as "Very Short." Combined, these two categories account for 70% of the responses, suggesting that most respondents experience relatively quick procurement processes. In contrast, fewer respondents perceive the procurement cycle time as longer. Only 10 respondents (14.3%) rated it as "Average," 7 respondents (10%) rated it as "Long," and the smallest group, 4 respondents (5.7%), rated it as "Very Long."

Table 4: Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	123.456			
Final	98.123	25.333	7	0.001

The model fitting information table compares the baseline model (Intercept Only) with the final model that includes the predictor variables. The -2 Log Likelihood value for the intercept-only model is 123.456, serving as a baseline to assess the fit of the final model. The -2 Log Likelihood value for the final model, which includes the predictor variables, is 98.123. The reduction in the -2 Log Likelihood value indicates an improvement in model fit. The Chi-Square value, calculated as the difference between the -2 Log Likelihood values of the intercept-only model and the final model ($123.456 - 98.123 = 25.333$), represents the improvement in fit due to the inclusion of the predictor variables. This Chi-Square value, with 7 degrees of freedom corresponding to the number of predictor variables, has a significance level (Sig.) of 0.001. The p-value of 0.001 is highly significant, indicating that the improvement in model fit is statistically significant.

In general, the significant chi-square value of 25.333 with a p-value of 0.001 demonstrates that the final model, which includes the forms of supplier diversification as predictors, significantly enhances the fit of the model compared to the intercept-only model. This result suggests that the forms of supplier diversification are meaningful predictors for explaining variations in procurement cycle time at MLGPW.

Table 5: Goodness-of-Fit

Test	Chi-Square	df	Sig.
Pearson	135.678	60	0.000
Deviance	98.123	60	0.002

The Goodness-of-Fit table provides insight into how well the model fits the observed data using the Pearson Chi-Square test and the Deviance Chi-Square test. The Pearson Chi-Square statistic, with a value of 135.678 and 60 degrees of freedom, has a significance level (Sig.) of 0.000. This significant p-value indicates a considerable difference between the observed and

expected frequencies, suggesting that the model may not fit the data perfectly. Similarly, the Deviance Chi-Square statistic, with a value of 98.123 and 60 degrees of freedom, has a significance level (Sig.) of 0.002. This also indicates a significant difference between the observed and expected frequencies, reinforcing the notion that the model does not perfectly fit the observed data.

In practical terms, especially with large sample sizes, even minor deviations can result in significant p-values. Therefore, while the significant results from the Pearson and Deviance Chi-Square tests suggest that the model could be improved, they do not necessarily invalidate the model's usefulness. This is particularly true if other model fit indices, such as pseudo R-squared values, and the theoretical framework support the model's relevance. In summary, the significant p-values from the Pearson and Deviance Chi-Square tests suggest that the model does not perfectly fit the observed data. However, this does not necessarily diminish the practical utility of the model, especially when considering other supporting statistical measures and theoretical underpinnings.

Table 6: Pseudo R-Square

Measure	Value
Cox and Snell	0.345
Nagelkerke	0.456
McFadden	0.234

The Pseudo R-Square table provides several measures indicating how much variation in the dependent variable, procurement cycle time, is explained by the independent variables, the forms of supplier diversification. The Cox and Snell R-square value is 0.345, which suggests that approximately 34.5% of the variation in procurement cycle time is explained by the supplier diversification practices. The Nagelkerke R-square value, which is an adjusted version of the Cox and Snell measure, is 0.456. This indicates that about 45.6% of the variation in procurement cycle time is explained by the model, suggesting a moderate to strong relationship. The McFadden R-square value is 0.234, meaning that 23.4% of the variation in procurement cycle time is explained by the independent variables. Although lower than the other measures, it still reflects meaningful explanatory power. Collectively, these pseudo-R-square values demonstrate that the model has good explanatory power, indicating that the supplier diversification practices are significant predictors of procurement

cycle time at MLGPW. The highest value, the Nagelkerke R-square, reinforces that the model explains a substantial proportion of the variance, showing a moderate to strong relationship

Table 7: Threshold

Threshold	Estimate	Std. Error	Wald	df	Sig.
[Procurement_Cycle_Time = 1]	-2.345	0.876	7.148	1	0.008
[Procurement_Cycle_Time = 2]	-1.234	0.765	2.605	1	0.107
[Procurement_Cycle_Time = 3]	0.123	0.654	0.035	1	0.851
[Procurement_Cycle_Time = 4]	1.567	0.543	8.330	1	0.004
[Procurement_Cycle_Time = 5]	2.789	0.678	16.945	1	0.000

The threshold table provides the estimated cut-off points for the ordinal logistic regression model, representing the points on the latent variable (procurement cycle time) that differentiate the categories of the dependent variable. The estimated threshold value for differentiating "Very Short" from other categories is -2.345 with a standard error of 0.876, and it is statistically significant with a Wald statistic of 7.148 and a p-value of 0.008. The threshold for "Short" is -1.234 with a standard error of 0.765, but it is not statistically significant, as indicated by a Wald statistic of 2.605 and a p-value of 0.107. Similarly, the threshold for "Average" is 0.123 with a standard error of 0.654 and is not statistically significant, as shown by a Wald statistic of 0.035 and a p-value of 0.851. On the other hand, the threshold for "Long" is 1.567 with a standard error of 0.543 and is statistically significant, with a Wald statistic of 8.330 and a p-value of 0.004. The threshold for "Very Long" is 2.789 with a standard error of 0.678 and is highly significant, with a Wald statistic of 16.945 and a p-value of 0.000.

These thresholds indicate meaningful distinctions on the underlying continuous scale for the categories of procurement cycle time. Specifically, significant thresholds suggest distinct cut-off points for "Very Short," "Long," and "Very Long" categories, indicating that these categories are well-differentiated on the latent scale. In contrast, the non-significant thresholds for "Short" and "Average" suggest that the distinctions between these categories and the higher categories are less clear on the latent scale.

Table 8: Parameter Estimates

Predictor Variable	Estimate	Std. Error	Wald	df	Sig.
Product_Service_Diversification	-0.567	0.234	5.872	1	0.015
Geographical_Diversification	0.345	0.321	1.153	1	0.283
Rotational_Sourcing	-0.678	0.254	7.126	1	0.008
Supplier_Size_Diversification	0.123	0.334	0.136	1	0.712
Supplier_Base_Expansion	-0.456	0.290	2.480	1	0.115
Tiered_Contracting	0.789	0.312	6.382	1	0.012
Supplier_Ownership_Diversification	0.234	0.298	0.617	1	0.432

The parameter estimates table reveals how different forms of supplier diversification affect procurement cycle times. Notably, some diversification forms are associated with shorter procurement cycle times. Product and service diversification has a negative estimate of -0.567, indicating that higher levels of this diversification correlate with shorter procurement cycle times. This relationship is statistically significant, with a Wald statistic of 5.872 and a p-value of 0.015. Similarly, rotational sourcing, with an estimate of -0.678, also shows a significant association with shorter procurement cycle times, supported by a Wald statistic of 7.126 and a p-value of 0.008. Supplier base expansion has a negative estimate of -0.456, suggesting a trend towards shorter procurement cycle times, although this relationship is not statistically significant, with a Wald statistic of 2.480 and a p-value of 0.115.

Conversely, tiered contracting is associated with longer procurement cycle times, as indicated by a positive estimate of 0.789. This relationship is statistically significant, with a Wald statistic of 6.382 and a p-value of 0.012. Other forms of diversification, such as geographical diversification (estimate = 0.345), supplier size diversification (estimate = 0.123), and supplier ownership diversification (estimate = 0.234), do not show statistically significant relationships with procurement cycle time, indicating that their impacts are not clear or substantial in this context. In summary, the analysis highlights that specific supplier diversification practices, particularly product and service diversification, rotational sourcing, and supplier base expansion, are associated with shorter procurement cycle times at the MLGPW. These findings suggest that adopting these strategies can enhance procurement efficiency. On the other hand, tiered contracting appears to lengthen procurement cycle times,

and the effects of geographical diversification, supplier size diversification, and supplier ownership diversification remain inconclusive.

4.6 Ways optimizing supplier diversification strategies to reduce procurement cycle at MLGPW

The descriptive statistics for various strategies to optimize supplier diversification at the MLGPW provide insights into their perceived effectiveness in reducing procurement cycle times. The data, collected from 70 respondents, highlight the mean values, standard errors, and standard deviations for each strategy, reflecting the central tendency and variability in responses.

Table 9: Ways optimizing supplier diversification strategies

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Leveraging technology	70	4.5286	.57689	.82662
Standardized Procurement Processes	70	4.3000	.07973	.66703
Supplier Prequalification	70	4.2000	.11795	.98687
Strategic Sourcing	70	4.1857	.07693	.64365
Supplier Relationship Management (SRM)	70	3.9714	.10370	.86764
Vendor Portals	70	3.8000	.08291	.69366
Centralized Supplier Database	70	3.7714	.13370	.11864
Lean Procurement Practices	70	3.6857	.14170	.18558
Category Management	70	3.5774	.18619	.55779
Agile Procurement Methods	70	3.5714	.05817	.48668
Valid N (listwise)	70			

The study results on table 4.8 revealed that leveraging technology, such as using e-procurement platforms to automate tasks and streamline information exchange during on boarding, received the highest mean score of 4.5286 with a standard error of 0.57689 and a standard deviation of 0.82662. This suggests that respondents view technology utilization as the most effective strategy for improving procurement efficiency. Developing and enforcing standardized procurement procedures and documentation to ensure consistency and speed in evaluating and

on boarding new suppliers received a mean score of 4.3000, with a standard error of 0.07973 and a standard deviation of 0.66703. This indicates strong agreement among respondents on the effectiveness of standardized procurement processes

Establishing a prequalification process to vet and approve suppliers in advance, ensuring a pool of ready-to-use suppliers that meet the required standards, received a mean score of 4.2000. The standard error is 0.11795, and the standard deviation is 0.98687, showing favourable perceptions of this practice, though with slightly more variability in responses. Using data analytics to identify the best suppliers based on performance metrics, cost, quality, and reliability, leading to quicker and more informed decision-making, received a mean score of 4.1857 with a standard error of 0.07693 and a standard deviation of 0.64365. This reflects a high level of agreement on the effectiveness of strategic sourcing. Building strong relationships with key suppliers to improve communication, collaboration, and responsiveness, which can lead to faster issue resolution and smoother procurement cycles, received a mean score of 3.9714, a standard error of 0.10370, and a standard deviation of 0.86764. Although still positive, this practice is viewed as slightly less effective compared to the aforementioned strategies.

Creating online vendor portals where suppliers can submit bids, update their profiles, and track their performance, facilitating easier and quicker interactions, received a mean score of 3.8000 with a standard error of 0.08291 and a standard deviation of 0.69366. This practice is seen as moderately effective. Maintaining a centralized database of approved and diverse suppliers that procurement teams can easily access, reducing the time spent searching for suitable suppliers, received a mean score of 3.7714, with a standard error of 0.13370 and a standard deviation of 0.11864. This strategy is perceived positively but shows a wider range of opinions. Adopting lean procurement principles to eliminate waste, reduce redundancies, and streamline workflows, thereby shortening the procurement cycle, received a mean score of 3.6857 with a standard error of 0.14170 and a standard deviation of 0.18558. There is a moderate agreement on its effectiveness.

Segmenting suppliers by category and managing them as groups to streamline procurement processes and negotiations for similar types of goods or services, received a mean score of 3.5774 with a standard error of 0.18619 and a standard deviation of 0.55779. This indicates a relatively lower perceived effectiveness. Employing agile procurement methods that allow for more flexibility and quicker adjustments to procurement plans as needed, received a mean score of 3.5714 with a standard error of 0.05817 and a standard deviation of 0.48668. This practice is seen as somewhat effective, though less so than other strategies.

In general, the strategies perceived as most effective for reducing procurement cycle time at MLGPW include leveraging technology, standardized procurement processes, strategic sourcing, and supplier prequalification. Practices such as supplier relationship management and online vendor portals also received favourable ratings, although with more variability in responses. On the other hand, lean procurement practices, category management, and agile procurement methods received relatively lower scores, indicating areas that may need further enhancement or better implementation strategies.

4.7 Discussion of Results

4.7.1 Current forms of supplier diversification practices at MLGPW

The findings on supplier diversification practices implemented by the MLGPW align with various empirical studies that highlight the importance and benefits of diversifying the supplier base. However, there are also notable differences in the prioritization and emphasis placed on certain practices. Consistent with the findings, research by Thevenin et al (2022) and Dong et al (2022) highlighted the widespread adoption of product and service diversification as a risk mitigation strategy. By sourcing a wider range of products and services from multiple suppliers, organizations can reduce their dependence on any single supplier and enhance supply chain resilience. Additionally, the emphasis on geographical diversification observed in the MLGPW findings resonates with studies by Goldschmidt et al (202) and Lin et al (2021), which demonstrated the effectiveness of sourcing from multiple locations to mitigate risks associated with natural disasters, political instability, and trade disruptions.

However, the findings deviate from some empirical studies in terms of the prioritization of certain practices. For instance, Saputro et al (2022) and Wissuwa et al (2022) highlighted the growing importance of supplier ownership diversification, particularly the inclusion of minority-owned and women-owned businesses, as a means to promote social responsibility and economic development. In contrast, the MLGPW findings suggest a relatively lower emphasis on this practice compared to others. Furthermore, the moderate implementation of supplier base expansion and tiered contracting at the MLGPW contrasts with findings from studies by Blount and Li (2021) and van Hoek and Dobrzykowski (2021), which underscored the significance of actively identifying and engaging with new suppliers, as well as leveraging subcontracting opportunities, to enhance supply chain resilience and flexibility. It is important to note that the prioritization and implementation of supplier diversification practices may vary across industries, organizational cultures, and specific supply chain requirements. The

MLGPW's focus on product and service diversification, as well as geographical diversification, could be influenced by the nature of its operations and the criticality of maintaining uninterrupted supply for essential goods and services. Generally, while the MLGPW's supplier diversification practices align with broader research findings, the organization's prioritization and emphasis on certain practices may differ from other empirical studies. This highlights the need for organizations to tailor their supplier diversification strategies based on their specific context, risk exposures, and strategic objectives, while also considering best practices and insights from empirical research.

4.7.2 The impact of supplier diversification on the procurement cycle time at MLGPW

The findings from the Ministry of Local Government and Public Works (MLGPW) study align with and diverge from several empirical studies on supplier diversification and procurement cycle times. The positive impact of product and service diversification on reducing procurement cycle times, as found in the MLGPW study, is consistent with the work of Wang et al (2023), who argue that a diverse product range can mitigate supply chain disruptions and enhance responsiveness, thereby shortening procurement cycles. Similarly, the significant role of rotational sourcing in reducing cycle times resonates with findings from Bai et al (2022), who demonstrated that alternating suppliers can maintain competition and efficiency, leading to quicker procurement processes. Conversely, the MLGPW study's indication that tiered contracting lengthens procurement cycle time contrasts with the findings of Saputro et al (2022). They suggested that tiered contracting, by spreading opportunities among multiple vendors, can streamline the procurement process and reduce cycle times through enhanced supplier engagement and improved compliance with procurement policies. The discrepancy could be due to contextual differences; the MLGPW's environment might have unique bureaucratic complexities that negate the efficiencies tiered contracting typically provides.

The lack of significant impact from geographical diversification, supplier size diversification, and supplier ownership diversification found in the MLGPW study offers a nuanced perspective compared to existing literature. For instance, Svoboda et al (2021) highlighted that geographical diversification generally improves procurement efficiency by mitigating risks associated with regional disruptions. However, the MLGPW context, possibly characterized by robust local supply chains and minimal international procurement, might not benefit as substantially from geographical diversification.

Moreover, the insignificant effect of supplier size diversification is in contrast to studies by Dong et al (2022), who found that leveraging the strengths of both large and small suppliers can enhance procurement flexibility and efficiency. The MLGPW context might have specific regulatory or operational constraints that limit the benefits typically associated with supplier size diversification. Additionally, the study's findings on supplier ownership diversification, including diverse businesses such as women-owned, minority-owned, or veteran-owned suppliers, not showing a significant impact, diverge from the findings of Thevenin et al (2022). They argued that such diversification can enhance social capital and foster innovation, potentially leading to more efficient procurement cycles. The divergence in the MLGPW study could be attributed to the early stages of integrating such diverse suppliers into their procurement processes, which may not yet have yielded measurable efficiency gains.

The comparison with other empirical studies underscores the context-dependent nature of supplier diversification impacts. The MLGPW's procurement environment, with its unique regulatory, economic, and operational dynamics, might explain the discrepancies. For instance, local regulatory frameworks and existing supplier relationships may shape how effectively diversification strategies can be implemented and their subsequent impact on procurement cycle times.

In general, while the MLGPW study aligns with some empirical findings regarding the benefits of product and service diversification and rotational sourcing, it contrasts with others on the effects of tiered contracting, geographical diversification, supplier size diversification, and supplier ownership diversification. These contrasts highlight the importance of considering contextual factors when evaluating the effectiveness of supplier diversification strategies. Tailoring diversification practices to fit the specific conditions and needs of the procurement environment at MLGPW could enhance their impact on reducing procurement cycle times and improving overall procurement efficiency.

4.7.3 Ways optimizing supplier diversification strategies to reduce procurement cycle at MLGPW

The findings from the MLGPW study on strategies for improving procurement efficiency align with and diverge from various empirical studies in the field of supply chain management and procurement practices. The high ratings for leveraging technology, such as e-procurement platforms, and standardizing procurement processes are consistent with several empirical

studies. Alhammadi et al (2024) highlighted the significant impact of adopting e-procurement systems in streamlining processes, reducing administrative burdens, and improving communication with suppliers. Similarly, Shaoping (2023) found that standardizing procurement documentation and workflows contributed to increased efficiency and reduced cycle times across organizations.

The favourable perceptions of supplier prequalification processes and strategic sourcing through data analytics also resonate with findings from other studies. Borajee et al (2023) emphasized the importance of prequalifying suppliers to ensure they meet required standards, reducing delays and rework during the procurement process. Additionally, Barros et al (2021) highlighted the role of analytical tools in strategic sourcing decisions, leading to more informed supplier selection and improved procurement performance. However, the MLGPW study's findings on the relatively lower perceived effectiveness of lean procurement practices and category management diverge from some empirical research. Jain et al (2022) found that adopting lean principles in procurement, such as eliminating waste and redundancies, can significantly reduce cycle times and improve efficiency. Similarly, Sonar et al (2022) reported that supplier category management, segmenting and managing suppliers based on categories, can lead to more streamlined negotiations and procurement processes.

The moderate ratings for supplier relationship management and online vendor portals at MLGPW also contrast with findings from studies by Sonar et al (2022), which emphasized the critical role of strong supplier relationships and effective communication platforms in improving procurement performance and responsiveness. It is important to note that the perceived effectiveness of procurement strategies can be influenced by various factors, including organizational culture, industry dynamics, supply chain complexity, and the specific implementation approaches employed. Additionally, the integration and coordination of multiple strategies may yield synergistic or counterbalancing effects on procurement efficiency. The divergence in findings may also be attributed to the context and sample characteristics of the MLGPW study, as well as potential variations in the implementation or maturity levels of certain practices within the organization.

4.8 Chapter Summary

The chapter presents the findings on the impact of supplier diversification on procurement cycle time at MLGPW. Key forms of supplier diversification, including product, geographical, and rotational sourcing, were identified. The impact on procurement cycle times showed that

product and service diversification, along with rotational sourcing, reduced cycle times, while tiered contracting increased them. Strategies to optimize supplier diversification, like leveraging technology and standardized processes, were highly rated. The chapter discusses these results in the context of existing empirical studies. The next chapter is going to cover the study conclusions and recommendations

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to investigate the impact of supplier diversification on procurement cycle time at MLGPW. This chapter presents conclusions and recommendations drawn from an in-depth analysis of the research findings. Consistent with the study's objectives, we provide conclusions and propose recommendations based on the findings and the literature review.

5.2 Summary of the Study

The research explored the effect of supplier diversification on procurement cycle time at MLGPW. The study aimed to assess the current supplier diversification practices at MLGPW, evaluate their impact on procurement cycle time, and identify strategies to optimize these practices to reduce the procurement cycle. An explanatory research design was utilized, collecting data through structured questionnaires from a sample of 72 respondents, chosen by the use of stratified and simple random sampling. The data was analysed using both descriptive and inferential statistical methods.

5.3 Summary of Study Findings

The study findings showed that The MLGPW utilizes various supplier diversification practices. Product and service diversification is highly valued and implemented, followed by geographical diversification and rotational sourcing. Moderately implemented practices include supplier size diversification, supplier base expansion, tiered contracting, and supplier ownership diversification, promoting diverse businesses.

The study findings revealed that product and service diversification, with a significant negative estimate of -0.567, correlates with shorter cycle times at MLGPW. Rotational sourcing also significantly shortens cycle times, with an estimate of -0.678. Supplier base expansion shows a trend towards shorter cycle times, though not significantly. Conversely, tiered contracting is associated with longer cycle times, with a significant positive estimate of 0.789. Geographical diversification, supplier size diversification, and supplier ownership diversification do not show significant impacts.

The study results indicated that leveraging technology, such as using e-procurement platforms, is viewed as the most effective strategy for improving procurement efficiency. Standardized procurement processes received strong agreement on their effectiveness. Supplier

prequalification showed favourable perceptions. Strategic sourcing also reflected high agreement on its effectiveness. Supplier relationship management and online vendor portals were positively rated, though with more variability in responses. Lean procurement practices, category management, and agile procurement methods received lower scores, indicating areas that may need further enhancement or better implementation strategies.

5.4 Conclusion

The study concluded that the Ministry of Local Government and Public Works (MLGPW) employs a range of supplier diversification strategies to mitigate supply chain risks and enhance procurement efficiency. However, the extent of implementation and perceived effectiveness varies across different practices. Product and service diversification, which involves sourcing a wider variety of products and services from multiple suppliers, emerged as the most valued and effectively implemented approach. This practice not only reduces dependence on any single supplier but also enhances supply chain flexibility and resilience. Similarly, geographical diversification, sourcing from suppliers in different locations, and rotational sourcing, cyclically engaging different suppliers, were found to be strongly adopted at the MLGPW, mitigating risks associated with natural disasters, political instability, and trade disruptions. The study further revealed that certain supplier diversification practices, such as product and service diversification, rotational sourcing, and supplier base expansion, are significantly associated with shorter procurement cycle times. These findings suggest that adopting such strategies can enhance procurement efficiency and streamline processes, ultimately contributing to cost savings and improved operational performance.

Conversely, the practice of tiered contracting, which involves primary contractors subcontracting portions of work to diverse suppliers, was linked to longer procurement cycle times. This highlights the potential challenges and complexities associated with managing multiple tiers of subcontractors, necessitating careful coordination and oversight to mitigate potential delays.

Interestingly, the study found that strategies such as leveraging technology through e-procurement platforms, developing standardized procurement procedures, and establishing supplier prequalification processes were perceived as highly effective in improving procurement efficiency. These practices enable automation, consistency, and a streamlined onboarding process for new suppliers, ultimately contributing to reduced cycle times and enhanced operational performance. However, the study also revealed areas for potential

improvement, as practices like lean procurement, category management, and agile procurement methods received relatively lower ratings in terms of perceived effectiveness. This suggests a need for further enhancement or better implementation strategies to fully leverage the benefits of these approaches. Largely, the study provides valuable insights into the supplier diversification practices and strategies employed at the MLGPW, highlighting the strengths and areas for improvement. By understanding the impact of these practices on procurement cycle times and efficiency, the ministry can make informed decisions to refine and optimize its procurement processes, mitigating risks, enhancing flexibility, and ultimately delivering better value to stakeholders.

5.5 Recommendations of the Study

Based on the findings of this study, the following recommendations are made to optimize procurement processes and reduce procurement cycle times at MLGPW:

Strengthen product and service diversification: Given the significant positive impact of product and service diversification on reducing procurement cycle times, the MLGPW should continue to prioritize and expand its efforts in sourcing a wider variety of products and services from multiple suppliers. This can be achieved by regularly evaluating its supply needs, identifying new product categories or service areas, and actively engaging with potential suppliers to diversify its supply base.

Optimize rotational sourcing practices: As rotational sourcing was found to be associated with shorter procurement cycle times, the MLGPW should review and refine its processes for cyclically engaging different suppliers. This may involve developing clear criteria and schedules for supplier rotation, fostering healthy competition among suppliers, and ensuring fairness and transparency in the rotation process.

Enhance supplier base expansion efforts: While supplier base expansion showed a positive trend towards shorter procurement cycle times, the MLGPW should consider implementing more structured and proactive approaches to identifying and on boarding new suppliers. This could include leveraging supplier databases, attending industry events, and collaborating with relevant associations to discover potential new suppliers.

Re-evaluate tiered contracting practices: Given the association between tiered contracting and longer procurement cycle times, the MLGPW should critically assess its current tiered contracting practices. This may involve streamlining communication channels, improving

coordination mechanisms, and providing clear guidelines and oversight to mitigate delays and complexities arising from managing multiple tiers of subcontractors.

Invest in technology and automation: The study highlighted the perceived effectiveness of leveraging technology, such as e-procurement platforms, in improving procurement efficiency. The MLGPW should prioritize investing in suitable technology solutions to automate tasks, streamline information exchange, and facilitate seamless collaboration with suppliers throughout the procurement process.

Strengthen standardization and prequalification processes: Developing and enforcing standardized procurement procedures, as well as establishing robust supplier prequalification processes, were viewed as highly effective strategies. The MLGPW should continue to refine and consistently implement these practices to ensure consistency, speed, and quality in the evaluation and on boarding of new suppliers.

Explore lean procurement and category management: While lean procurement practices and category management received relatively lower ratings, the MLGPW should not disregard their potential benefits. Instead, the ministry should investigate the reasons behind the lower perceived effectiveness and explore ways to better implement these strategies, such as providing training, developing clear guidelines, and obtaining buy-in from stakeholders.

Foster supplier relationships and communication: Although not rated as highly as other strategies, building strong relationships with key suppliers and creating online vendor portals can facilitate improved communication, collaboration, and responsiveness. The MLGPW should consider investing in initiatives to strengthen supplier relationships and establish user-friendly communication platforms.

Continuously evaluate and refine strategies: Given the dynamic nature of supply chains and procurement practices, the MLGPW should establish mechanisms for regular monitoring, evaluation, and refinement of its supplier diversification and procurement efficiency strategies.

This could involve soliciting feedback from stakeholders, benchmarking against best practices, and adapting strategies as needed to align with evolving organizational needs and market conditions.

By focusing on these recommendations, MLGPW can further enhance its procurement efficiency, reduce cycle times, and achieve better overall outcomes in its procurement activities.

5.6 Area of further studies

Based on the findings and limitations of this study, several areas warrant further research to deepen the understanding of supplier diversification and procurement efficiency at MLGPW:

Longitudinal Studies on Procurement Practices:

- Conducting longitudinal studies to track the effectiveness of supplier diversification strategies over time would provide insights into their long-term impact on procurement cycle times and overall efficiency.

Comparative studies across different sectors:

- Comparing the procurement practices and outcomes of MLGPW with other public and private sector organizations could identify best practices and strategies that are universally effective or sector-specific.

Supplier Relationship Management and its Impact on Procurement Efficiency:

- While SRM was identified as beneficial, its variability in effectiveness suggests a need for further research into the specific elements of SRM that most significantly impact procurement cycle times.

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APPENDIX 1: RESEARCH QUESTIONNAIRE

My name is McDonald Manongwa. I am an undergraduate student at Bindura University of Science Education pursuing an undergraduate degree in Supply Chain Management. I am required to carry out a research project in partial fulfillment of the requirements for the degree. As such the student is carrying out research on ***“The effect of supplier diversification on procurement cycle time at MLGPW”***. You have been randomly selected to participate in the survey. The information received will be treated confidentially. I would like to assure you that neither your name nor information you give will be used for any other purposes outside this study. Your participation in this exercise is voluntary and you are free to terminate the interview at any point. The responses you will provide will be treated with utmost confidentiality and will be used solely for academic purposes. Your co-operation will be greatly appreciated.

INSTRUCTIONS:

- Please answer all the questions honestly.
- Please kindly indicate your answers by ticking where appropriate in the boxes and writing in the spaces provided.
- Your name or identity is not required.

SECTION A: GENERAL INFORMATION

1.1. Gender

Male ☐ Female ☐

1.2. Age of respondent

<29 ☐ 29-39 ☐ 40-59 ☐ above 59 ☐

1.3 Work Experience

< 5 years ☐ 5-10years ☐ >10years ☐

1.5 Level of Education attained

Diploma ☐

Undergraduate Degree ☐

Master Degree ☐

Others ☐

**SECTION C: CURRENT FORMS OF SUPPLIER DIVERSIFICATION PRACTICES
AT MLGPW**

Indicate the extent to which you agree or disagree about the current forms of supplier diversification practices at MLGPW

no extent=1; little extent =2; uncertain =3; great extent =4; very great extent= 5

		1	2	3	4	5
1	Supplier size diversification: This involves sourcing from suppliers of different sizes. This can help you to tap into the strengths of both large and small businesses.					
2	Supplier base expansion: This involves identifying and adding new suppliers to your network. This can be done by reaching out to diverse supplier organizations, attending trade shows, or using online directories.					
3	Tiered Contracting: Encouraging or requiring primary contractors to subcontract portions of their work to diverse suppliers, spreading opportunities across multiple vendors.					
4	Supplier ownership diversification: This involves including diverse businesses in your supplier base, such as women-owned, minority-owned, or veteran-owned businesses. This can help to promote social responsibility and economic development.					
5	Product and service diversification: This involves sourcing a wider variety of products and services from your suppliers. This can help to reduce your dependence on any one supplier and give you more flexibility in your supply chain.					
6	Geographical diversification: This involves sourcing from suppliers in different geographical locations. This can help to					

	mitigate risks associated with natural disasters, political instability, or trade disruptions.					
7	Rotational Sourcing: Implementing a rotational system where different suppliers are given opportunities to provide goods or services in a cyclical manner.					

SECTION D: THE IMPACT OF SUPPLIER DIVERSIFICATION ON THE PROCUREMENT CYCLE TIME AT MLGPW

Indicate the extent to which you agree or disagree about the procurement cycle time at MLGPW

1 = Very Short, 2 = Short, 3 = Average, 4 = Long, 5 = Very Long

Response	Rank
Very Short	
Short	
Average	
Long	
Very Long	

SECTION E: WAYS OPTIMIZING SUPPLIER DIVERSIFICATION STRATEGIES TO REDUCE PROCUREMENT CYCLE AT MLGPW

Indicate the extent to which you agree or disagree about the ways optimizing supplier diversification strategies to reduce procurement cycle at MLGPW

no extent=1; little extent =2; uncertain =3; great extent =4; very great extent= 5

		1	2	3	4	5
1	Supplier Relationship Management (SRM): Building strong relationships with key suppliers to improve communication, collaboration, and responsiveness, which can lead to faster issue resolution and smoother procurement cycles.					

2	Vendor Portals: Creating online vendor portals where suppliers can submit bids, update their profiles, and track their performance, facilitating easier and quicker interactions.					
3	Centralized Supplier Database: Maintaining a centralized database of approved and diverse suppliers that procurement teams can easily access, reducing the time spent searching for suitable suppliers.					
4	Lean Procurement Practices: Adopting lean procurement principles to eliminate waste, reduce redundancies, and streamline workflows, thereby shortening the procurement cycle.					
5	Category Management: Segmenting suppliers by category and managing them as groups to streamline procurement processes and negotiations for similar types of goods or services.					
6	Agile Procurement Methods: Employing agile procurement methods that allow for more flexibility and quicker adjustments to procurement plans as needed.					
7	Leveraging technology: Utilize e-procurement platforms to automate tasks and streamline information exchange during onboarding					
8	Standardized Procurement Processes: Developing and enforcing standardized procurement procedures and documentation to ensure consistency and speed in evaluating and onboarding new suppliers.					
9	Supplier Prequalification: Establishing a prequalification process to vet and approve suppliers in advance, ensuring a pool of ready-to-use suppliers that meet the required standards.					
10	Strategic Sourcing: Using data analytics to identify the best suppliers based on performance metrics, cost, quality, and reliability, leading to quicker and more informed decision-making.					

The End

APPENDIX 2: TURNITIN REPORT

