

**E-Procurement Adoption Practices and Inventory Control Efficiency among
Manufacturing SMEs in South-South, Nigeria**

**Williams Oiseoje AIROYA
PG/MGS2216166**

**DEPARTMENT OF PROCUREMENT MANAGEMENT,
FACULTY OF SUSTAINABLE PROCUREMENT, ENVIRONMENTAL, AND SOCIAL
STANDARDS ENHANCEMENT (SPESSE),
UNIVERSITY OF BENIN,
BENIN CITY,**

OCTOBER 2025

**E-Procurement Adoption Practices and Inventory Control Efficiency among
Manufacturing SMEs in South-South, Nigeria**

Williams Oiseoje AIROYA
PG/ MGS2216166

**BEING A RESEARCH THESIS SUBMITTED TO THE DEPARTMENT OF
PROCUREMENT MANAGEMENT, FACULTY OF SUSTAINABLE PROCUREMENT,
ENVIRONMENTAL, AND SOCIAL STANDARDS ENHANCEMENT (SPESSE),
UNIVERSITY OF BENIN, BENIN CITY, IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN
PROCUREMENT MANAGEMENT,**

OCTOBER 2025

DECLARATION

I, **Williams Oiseoje AIROYA**, a Master of Science (M.Sc.) candidate of the Department of Procurement Management, Faculty of Sustainable Procurement, Environmental, and Social Standards Enhancement (SPESSE), University of Benin, Benin City, Nigeria, hereby declare that the work presented in this thesis is a genuine work done originally by me and has not been submitted elsewhere for the award of any degree. All sources of information referred to in this work are acknowledged with reference to the respective authors.

Williams Oiseoje AIROYA

(M.Sc. Student/Researcher)

Date

CERTIFICATION

This is to certify that this thesis titled “**E-Procurement Adoption Practices and Inventory Control Efficiency among Manufacturing SMEs in South-South, Nigeria**” was carried out by **Williams Oiseoje AIROYA** in the Department of Procurement Management, Faculty of Sustainable Procurement, Environmental, and Social Standards Enhancement (SPESSE), University of Benin, Benin City.

Dr. Lawson Eghosa Igbinovia
(Project Supervisor)

Date: -----

Professor D. E. Oriakhi
(Deputy Central Leader / H.O.D)

Date: -----

Prof. Sylvester Osuji
(Centre Leader)

Date: -----

DEDICATION

This master's programme is first and foremost dedicated to the Almighty God for the grace, mercy, provision, sound health, and protection in seeing me through this great journey.

May His Holy name be praised forever.

And to my invaluable late parents: Mr. Johnson Iruobe Airoya and Mrs. Janet Uenoa Airoya for laying the foundation for my academic prowess.

ACKNOWLEDGEMENTS

I want to seize the unique opportunity to humbly acknowledge the various individuals that made this study a possibility. I wish to express my deep appreciation to my lecturers and staff in the department of procurement management for the knowledge, skills and training imparted on me during the course of my study. Your diligence, commitment and dedication to duty have bestowed on me a significant foundation for the pursuit of interest in procurement management.

I would like to extend my profound gratitude to my project supervisor, **Dr. Lawson Eghosa Igbinovia**, for his intellectual role, positive criticism, continuous mentoring, unremitting guidance,

painstakingly going through the project work and creating the time for meaningful interactions from the beginning that helped me formulate and complete my research in content and scope.

I am greatly indebted to my dear bosom friend Dr. Godson Ilevbare and brother for the invaluable assistance in making me know about this programme and for giving directions for this research work.

My special thanks and appreciations go to my amiable wife; Mrs. Grace Airoya and my blessed wonderful children; Miss Joy and Messrs. David Airoya for their patience, cooperation, and understanding.

I will not fail to thank my line manager, Mr. Mahadeveppa, for immeasurable support. And lastly to all my course mates, your company made our relationships pleasurable, our lives bearable and our post-graduate studies exciting. God bless us all in Jesus mighty name.

TABLE OF CONTENTS

Title Page	i
DECLARATION	iii
CERTIFICATION	iv
DEDICATION	v
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	vii
ABSTRACT	ix
CHAPTER ONE	1
INTRODUCTION	1
1.0 Preamble	1
1.1 Statement of the Research Problem	2
1.2 Research Questions	3
1.3 Objectives of the Study	4
1.4 Research Hypotheses	4
1.5 Scope of the Study	5
1.6 Significance of the Study	6
1.7 Limitations of the Study	7
1.8 Structure of the Study	8
CHAPTER TWO	10
BACKGROUND TO THE STUDY	10
2.0 Introduction	10
2.1 Study Environment	10
2.2 Electronic Procurement Adoption Practices	11
2.3 Inventory Control Efficiency	13
2.4 Interplay Between Electronic Procurement Adoption Practices and Inventory Control Efficiency	14
2.5 Appraisal of Stylized Facts	15
CHAPTER THREE	18
LITERATURE REVIEW	18
3.0 Introduction	18
3.1 Conceptual Clarification	18
3.1.2 Concept of Inventory Control Efficiency	18
3.1.3 Electronic Procurement Adoption Practices	19
3.1.3 Electronic Procurement Adoption Practices	20
3.1.3.1 Top Management Support	20

3.1.3.2	Information Quality	21
3.1.3.3	System Implementation Effectiveness	21
3.1.3.4	Process Efficiency	22
3.1.3.5	User Adoption and Satisfaction	22
3.1.3.6	Compliance and Transparency	22
3.1.4	Importance of Electronic Procurement	23
3.1.5	Conceptual Framework	25
3.2	Theoretical Literature Review	26
3.3	Empirical Literature Review	30
3.4	Summary of Empirical Literature	41
3.5	Gaps in the Literature Reviewed	44
CHAPTER FOUR		47
THEORETICAL FRAMEWORK AND METHODOLOGY		47
4.0	Introduction	47
4.1	Theoretical Framework	47
4.2	Model Specification	48
4.3	Estimation Techniques	49
4.4	Apriori Expectations, Variables/ Data Descriptions and Data Sources	50
CHAPTER FIVE		53
PRESENTATION OF EMPIRICAL RESULTS		53
5.0	Introduction	53
5.1	Pre-Estimation Analysis	54
5.2	Main Estimation Results	67
5.3	Discussion of Empirical Results	72
5.4	Policy Implications of Empirical Results	74
5.5	Evaluation of Research Hypotheses	77
CHAPTER SIX		81
SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION		81
6.0	Introduction	81
6.1	Summary of Empirical Findings	81
6.2	Recommendations	82
6.3	Conclusion	83
REFERENCES		85
Appendix II		90
QUESTIONNAIRE		90

ABSTRACT

This study investigated the effect of e-procurement adoption practices on inventory control efficiency within manufacturing SMEs in South-South Nigeria. Specifically, the research focused on the impact of six key dimensions of e-procurement adoption: top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency. The study employed a descriptive survey research design, utilising primary data collected through structured questionnaires administered to 193 respondents from manufacturing SMEs. The data were analysed using both descriptive and inferential statistical techniques, including multiple regression analysis via SPSS. The findings revealed that top management support, system implementation effectiveness, process efficiency, and user adoption and satisfaction had a significant positive impact on inventory control efficiency of the selected manufacturing SMEs in South-South Nigeria. However, information quality and compliance and transparency did not exhibit a significant impact on inventory control efficiency. The study recommends that manufacturing SMEs invest in leadership training, effective system implementation, process optimisation, and user engagement initiatives, while addressing gaps in information quality and compliance through targeted improvements and capacity building to fully realise the benefits of e-procurement adoption.

CHAPTER ONE

INTRODUCTION

1.0 Preamble

The rapid evolution of digital technologies has transformed procurement processes across industries, offering new opportunities for efficiency, transparency, and competitiveness. In recent years, e-procurement has emerged as a strategic tool for streamlining purchasing activities, reducing operational costs, and improving supply chain performance. This transformation is particularly relevant for manufacturing small and medium-sized enterprises (SMEs), where efficient procurement and inventory control are critical for sustaining competitiveness in dynamic markets. In the Nigerian context, especially within the South-South region, manufacturing SMEs face unique challenges such as fluctuating market demand, supply chain disruptions, inadequate infrastructure, and limited access to finance. These challenges are compounded by manual procurement practices that are prone to inefficiencies, delays, and inaccuracies, ultimately affecting inventory control and organizational performance.

E-procurement adoption offers a viable solution to these challenges by automating procurement processes, enhancing real-time information flow, and supporting data-driven decision-making in inventory management. Through digital platforms, SMEs can improve supplier relationships, ensure compliance with procurement standards, and minimize stockouts or overstock situations. Empirical evidence suggests that e-procurement adoption, when effectively implemented, can positively influence inventory control efficiency by improving order accuracy, reducing lead times, and optimizing stock levels (Gunasekaran & Ngai, 2008; Croom & Brandon-Jones, 2007). Despite its potential benefits, the adoption of e-procurement among manufacturing SMEs in South-South Nigeria remains relatively limited, often hindered by factors such as inadequate top management support, poor information quality, ineffective system implementation, low user adoption, and challenges related to compliance and transparency. Addressing these issues requires a comprehensive understanding of the relationship between e-procurement adoption

practices and inventory control efficiency, thereby enabling SMEs to leverage technology for operational excellence.

This study investigates how specific dimensions of e-procurement adoption: namely top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency, affect inventory control efficiency among manufacturing SMEs in South-South Nigeria. By providing empirical insights, the research aims to guide policymakers, business leaders, and technology providers in fostering an enabling environment for sustainable digital procurement transformation within the manufacturing sector.

1.1 Statement of the Research Problem

The adoption of electronic procurement (e-procurement) has reshaped procurement processes worldwide, enabling organizations to achieve greater transparency, cost efficiency, and operational accuracy through the integration of digital technologies (Matunga et al., 2013). Within the manufacturing sector, e-procurement facilitates automated purchasing, real-time supplier communication, and data-driven decision-making, all of which contribute to more efficient inventory control (Gunasekaran & Ngai, 2008). Despite these recognized benefits, manufacturing small and medium-sized enterprises (SMEs) in Nigeria, particularly in the South-South region, have shown relatively slow adoption rates. Factors such as poor technological infrastructure, limited internet connectivity, inadequate digital skills, and resistance to change have constrained the full implementation of e-procurement solutions (Omoregbe & Osifo, 2020). Traditional procurement practices among manufacturing SMEs in this region are often characterized by manual record-keeping, delayed supplier communication, and inaccurate inventory records, leading to issues such as stockouts, overstocking, and high carrying costs. These inefficiencies undermine operational performance and reduce competitiveness in both domestic and export markets (Min & Galle, 2003). While literature affirms that e-procurement adoption can significantly improve inventory control efficiency, the extent to which specific adoption practices—such as top management support, information quality, system

implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency—contribute to improved inventory management in SMEs remains underexplored in the Nigerian manufacturing context.

Previous studies have predominantly examined e-procurement within large-scale enterprises or public sector institutions (Vaidya et al., 2006; Sigala, 2013), leaving a significant gap in understanding how manufacturing SMEs, with their unique operational and resource constraints, can leverage e-procurement to enhance inventory control efficiency. Furthermore, existing research often aggregates e-procurement into a single construct, overlooking the need to assess how distinct dimensions of adoption influence critical inventory metrics such as lead time reduction, order accuracy, and optimal stock levels (Trkman & McCormack, 2010).

Given the growing competitive pressures and the need for efficient resource utilisation in manufacturing SMEs, there is an urgent need for empirical evidence on how targeted e-procurement adoption practices can strengthen inventory control efficiency in South-South Nigeria. This study addresses this gap by examining the specific relationship between selected e-procurement adoption practices and inventory control performance, thereby providing actionable insights for SME managers, policymakers, and technology providers seeking to optimise manufacturing supply chains in the region.

1.2 Research Questions

This study provides answers to the following research questions:

1. What is the impact of top management support on the inventory control efficiency of manufacturing SMEs in South-South Nigeria?
2. What is the relationship between information quality and the inventory control efficiency of manufacturing SMEs in South-South Nigeria?
3. How does system implementation effectiveness influence the inventory control efficiency of manufacturing SMEs in South-South Nigeria?
4. What is the effect of process efficiency on the inventory control efficiency of manufacturing SMEs in South-South Nigeria?

5. How does user adoption and satisfaction affect the inventory control efficiency of manufacturing SMEs in South-South Nigeria?
6. What role does compliance and transparency play in enhancing the inventory control efficiency of manufacturing SMEs in South-South Nigeria?

1.3 Objectives of the Study

The broad objective of this study is to determine the effect of e-procurement adoption practices on the inventory control efficiency of manufacturing SMEs in South-South Nigeria. The specific objectives are to:

1. assess the impact of top management support on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
2. examine the relationship between information quality and the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
3. evaluate the influence of system implementation effectiveness on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
4. determine the effect of process efficiency on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
5. analyze the effect of user adoption and satisfaction on the inventory control efficiency of manufacturing SMEs in South-South Nigeria; and
6. investigate the role of compliance and transparency in enhancing the inventory control efficiency of manufacturing SMEs in South-South Nigeria.

1.4 Research Hypotheses

The following hypotheses stated in their null form were tested in this study:

- i. Top management support has no significant impact on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- ii. There is no significant relationship between information quality and the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- iii. System implementation effectiveness does not significantly influence the inventory

control efficiency of manufacturing SMEs in South-South Nigeria.

- iv. Process efficiency has no significant effect on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- v. User adoption and satisfaction does not have a significant effect on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- vi. Compliance and transparency does not play a significant role in enhancing the inventory control efficiency of manufacturing SMEs in South-South Nigeria.

1.5 Scope of the Study

This study investigates the effect of e-procurement adoption practices on the inventory control efficiency of manufacturing SMEs in South-South Nigeria. The focus is on six specific adoption practice dimensions: top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency. Inventory control efficiency is assessed across key indicators such as inventory turnover, stock-out rate, inventory accuracy, carrying cost, and responsiveness to demand. The scope of this research encompasses manufacturing SMEs operating in the South-South geopolitical zone, specifically examining the period from January 2025 to June 2025. This timeframe is selected for several reasons. Firstly, the study's cross-sectional design capture the current snapshot of e-procurement adoption practices and their outcomes in inventory management within these SMEs, reflecting recent technological adoption trends and competitive pressures in the manufacturing sector. A six-month window provides a practical yet sufficiently comprehensive period for gathering data on recent and ongoing procurement activities, ensuring the findings are relevant for managerial decision-making and operational improvements. Furthermore, the first half of 2025 coincides with key operational cycles for many manufacturing SMEs, including procurement planning, raw material sourcing, and production scheduling. This alignment enhances the applicability of the study's findings to current business realities. Lastly, the chosen timeframe allows for efficient data collection and analysis while ensuring adequate variability in procurement and inventory activities to produce robust, meaningful results.

1.6 Significance of the Study

This study on E-Procurement Adoption Practices and Inventory Control Efficiency among Manufacturing SMEs in South-South Nigeria contributes primarily to the body of knowledge in supply chain management, digital procurement, and operational performance. By examining the influence of e-procurement adoption dimensions such as top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency, this research generates empirical evidence that is relevant for both scholarly inquiry and industry practice. Key stakeholders and beneficiaries include the following:

Manufacturing SMEs in South-South Nigeria: The participating SMEs will gain valuable insights into how specific e-procurement adoption practices affect their inventory control efficiency. Understanding these impacts will help business owners and managers refine their procurement processes, optimize stock levels, reduce costs associated with carrying and holding inventory, and improve responsiveness to market demand. The recommendations will also assist in strengthening supplier relationships and fostering competitive advantage.

Industry Associations and Chambers of Commerce: Sectoral bodies representing manufacturing SMEs will benefit from evidence-based findings on the role of e-procurement in enhancing operational performance. These insights can guide advocacy, capacity building, and member training programmes, thereby accelerating digital adoption within the sector.

Government and Policy Makers: Ministries, agencies, and regulatory bodies responsible for SME development and industrial policy can draw on the study's findings to design supportive frameworks that promote e-procurement adoption. By identifying practices that directly improve inventory control efficiency, this research provides a foundation for targeted interventions, policy incentives, and infrastructure investments that strengthen the manufacturing sector's competitiveness.

Technology Providers and Solution Developers: Firms offering e-procurement platforms, inventory management software, and related ICT solutions will benefit from understanding the

adoption factors most critical to SMEs. This knowledge can inform product development, training modules, and customer support services tailored to the operational realities of small and medium-sized manufacturers in the Nigerian context.

Investors and Development Partners: For investors and agencies promoting SME growth, industrialization, and digital transformation, this study offers an assessment of the operational benefits of e-procurement adoption. The results can support strategic investment decisions, partnership opportunities, and development programmes aimed at enhancing productivity and competitiveness in the manufacturing sector.

Academic Community: Scholars and researchers in supply chain management, procurement, and SME development will find this study valuable for expanding the literature on technology adoption and operational performance in emerging economies. By focusing on manufacturing SMEs in South-South Nigeria, the study provides context-specific empirical insights that can serve as a reference point for future research on digital procurement practices and inventory control in similar developing country settings.

1.7 Limitations of the Study

While this study on E-Procurement Adoption Practices and Inventory Control Efficiency among Manufacturing SMEs in South-South Nigeria offers valuable insights, certain limitations should be acknowledged to provide context for interpreting the findings.

Firstly, the study adopts a cross-sectional research design, which captures data at a single point in time. This design is appropriate for identifying relationships between variables but does not allow for definitive conclusions on causality. Longitudinal studies provide a more robust understanding of how e-procurement adoption impacts inventory control efficiency over time.

Secondly, the scope of the research is geographically limited to manufacturing SMEs in South-South Nigeria. While this focus enables an in-depth analysis of the regional manufacturing landscape, the findings may not be fully generalizable to SMEs in other regions of Nigeria or in different industrial sectors with varying technological adoption levels and operational structures.

Thirdly, the study relies primarily on self-reported data obtained through structured questionnaires. Such data is subject to potential biases, including social desirability bias, recall bias, and respondents' tendency to overstate or understate their e-procurement capabilities and inventory performance. Although efforts will be made to ensure clarity of questions and confidentiality of responses, these limitations remain inherent in survey-based research.

Fourthly, the analysis is restricted to selected dimensions of e-procurement adoption—namely, top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency—and their relationship with inventory control efficiency. Other potentially relevant variables such as organisational culture, supplier readiness, ICT infrastructure, and external market conditions are outside the scope of this study and could be explored in future research.

Lastly, time and resource constraints limit the breadth of data collection and analysis. The study period focuses on procurement and inventory practices within a specific timeframe in 2025, which may not capture seasonal variations, fluctuating market conditions, or changes in regulatory requirements that could influence e-procurement adoption and inventory efficiency.

Acknowledging these limitations ensures transparency and allows readers to interpret the results within their proper context, while also providing direction for future research to build upon and extend the present study's findings.

1.8 Structure of the Study

This study is organised into six chapters. Chapter one presents a comprehensive introduction to the research, including the background to the study, statement of the research problem, research questions, objectives, research hypotheses, scope, significance, limitations, and structure of the study.

Chapter two provides the background to the study, discussing the operational environment of manufacturing SMEs in South-South Nigeria. It elaborates on the independent and dependent variables, outlines their interaction, and uses relevant data to highlight contemporary trends and

challenges associated with e-procurement adoption and inventory control. The chapter concludes with an appraisal of stylised facts related to the study variables.

Chapter three reviews relevant literature, structured into conceptual, theoretical, and empirical sections. It examines the core concepts of e-procurement and inventory control efficiency, evaluates theoretical perspectives, and assesses empirical studies. The chapter further identifies gaps in existing literature and presents the conceptual framework guiding this study.

Chapter four outlines the research methodology. It describes the research design, population, sample size determination, sampling techniques, sources of data, research instruments, validity and reliability testing, data collection procedures, and data analysis methods, as well as the apriori expectations of the study.

Chapter five presents, analyses, and interprets the results. It includes descriptive statistics, inferential analyses, hypothesis testing, and discussions linking the findings to existing literature and the study's objectives.

Chapter six summarises the key findings, draws conclusions, and offers recommendations for improving e-procurement adoption and enhancing inventory control efficiency among manufacturing SMEs. It also suggests areas for further research to extend the scope and applicability of the study.

CHAPTER TWO

BACKGROUND TO THE STUDY

2.0 Introduction

This chapter presents a comprehensive background to the study by examining the operational environment of manufacturing SMEs in South-South Nigeria, with a focus on the adoption of electronic procurement (e-procurement) practices and their relationship with inventory control efficiency. It evaluates the independent variable (e-procurement adoption practices) and the dependent variable (inventory control efficiency) in the context of operational, technological, and market realities of SMEs. The chapter also explores the interaction between these variables, highlighting sector-specific constraints and opportunities that influence adoption outcomes. Finally, the chapter appraises stylised facts that reveal key trends, challenges, and research gaps, thereby providing the foundation for subsequent chapters.

2.1 Study Environment

The study environment comprises manufacturing small and medium-sized enterprises (SMEs) operating within the South-South geopolitical zone of Nigeria, which includes Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers States. This region is economically significant, serving as a hub for oil and gas activities, agro-processing, construction materials production, and light manufacturing. Despite its economic potential, manufacturing SMEs in the South-South face systemic challenges such as inadequate infrastructure, unreliable power supply, high transportation costs, and limited access to affordable financing. These constraints often hinder operational efficiency and competitiveness.

In recent years, the manufacturing sector in the South-South has experienced gradual technological integration, including the adoption of digital tools to enhance procurement and supply chain operations. E-procurement adoption in this environment is influenced by factors such as managerial commitment, workforce digital literacy, internet connectivity, and the availability of technical support. While some SMEs have embraced e-procurement solutions to address procurement bottlenecks and improve inventory management, others remain reliant on

manual processes due to cost considerations, change resistance, or perceived complexity of technology.

The South-South region's strategic location, with access to seaports and inter-state road networks, provides manufacturing SMEs with opportunities for broader market reach and supplier engagement. However, without effective procurement systems, these advantages are often undermined by delays in sourcing, stock mismanagement, and poor supplier coordination. Consequently, the region provides a relevant context for investigating the extent to which e-procurement adoption practices influence inventory control efficiency, offering insights applicable to other developing economies with similar socio-economic and infrastructural conditions.

2.2 Electronic Procurement Adoption Practices

Electronic procurement adoption practices refer to the structured use of digital technologies to plan, source, negotiate, purchase, and manage supplier relationships in ways that enhance coordination, reduce transaction costs, and increase visibility across the purchasing cycle (Davila, Gupta, & Palmer, 2003; Croom & Brandon-Jones, 2004; Bienhaus & Haddud, 2018). In manufacturing SMEs, these practices are best conceptualised along six interrelated dimensions that capture organisational readiness and technological enablement, with direct implications for material availability, lead times, and stock accuracy.

Top Management Support: The commitment of SME leadership to champion and fund e-procurement, set clear goals, remove adoption barriers, and model usage. Executive sponsorship shapes resources, culture, and prioritisation, and is consistently linked with successful IS implementation and digital procurement outcomes (Sharma & Yetton, 2003; Vaidya, Sajeew, & Callender, 2006; Beatty, Shim, & Jones, 2001; Grandon & Pearson, 2004; Molla & Licker, 2005).

Information Quality: The accuracy, timeliness, completeness, consistency, and accessibility of procurement and supplier data generated or shared through the platform, including item masters, prices, lead times, order statuses, goods receipts, and invoices. High information quality underpins reliable planning, order releases, and reconciliation, thereby reducing error-driven

stockouts and overstocking (Dennis, Wixom, & Roth, 2012; Yen & Ng, 2003; Liu, Xu, & Zhang, 2019; Bienhaus & Haddud, 2018).

System Implementation Effectiveness: The degree to which the e-procurement system is successfully deployed, integrated with inventory and finance applications, configured to fit workflow, and supported with training and vendor assistance. Effective implementation requires staged roll-out, clear governance, and change management to translate technical capability into routine use (Ginzberg, 1979; MacManus, 2002; IBM Global Services, 2003; Vaidya, Sajejev, & Callender, 2006).

Process Efficiency: The extent to which e-procurement shortens cycle times, reduces paperwork, automates approvals, standardises catalogues, and streamlines requisition-to-payment. Efficiency gains release working capital and cut administrative overhead, while improving on-time replenishment and purchase price visibility (Minahan & Degan, 2001; Davila, Gupta, & Palmer, 2003; Croom & Brandon-Jones, 2004; Birks, Bond, & Radford, 2001).

User Adoption and Satisfaction: The willingness and ability of procurement and stores staff to use the system effectively, reflected in perceived usefulness and ease of use, training adequacy, and user support. Higher adoption and satisfaction are associated with more consistent transactional data and more dependable replenishment signals (Rogers, 2003; Toroitich, Mburugu, & Waweru, 2017; Ducey, 2013; Grandon & Pearson, 2004).

Compliance and Transparency: The system's support for adherence to procurement policy, supplier qualification rules, audit trails, and disclosure of awards and spend. Digital traceability curbs maverick buying, strengthens auditability, and improves supplier accountability, which stabilises lead times and quality performance (World Bank, 2003; Walker & Harland, 2008; Amann et al., 2014; Trkman & McCormack, 2010).

These six dimensions are mutually reinforcing. Leadership commitment drives resources for implementation and training; high information quality and robust integration enable efficient processes; satisfied users sustain routine use; and compliance features embed controls that reduce variability in purchasing and supply. In manufacturing SMEs, stronger capability on these

dimensions is expected to improve inventory control through better demand-supply alignment, fewer emergency purchases, reduced excess stock, and higher order fulfilment rates (Wu, Zsidisin, & Ross, 2007; Kumar, Singh, & Kumar, 2020; Liu, Xu, & Zhang, 2019).

2.3 Inventory Control Efficiency

Inventory control efficiency refers to the ability of an organisation to plan, regulate, and optimise the acquisition, storage, and utilisation of materials to ensure that the right quantity of inventory is available at the right time, in the right place, and at the lowest possible cost without compromising service levels (Wild, 2017; Arnold, Chapman, & Clive, 2012). For manufacturing SMEs, efficient inventory control is essential for meeting production schedules, avoiding costly stockouts, reducing excess holding costs, and maintaining customer satisfaction in competitive markets (Stevenson, 2021).

In operational terms, inventory control efficiency embodies a balanced trade-off between two core objectives: minimising inventory-related costs and ensuring uninterrupted availability of materials for production and delivery. This balance is achieved by aligning inventory levels with demand patterns, lead times, and production capacities while integrating real-time monitoring and replenishment systems (Chopra & Meindl, 2023).

Manufacturing SMEs in South-South Nigeria face unique challenges in achieving inventory control efficiency. These include inconsistent supply chains, infrastructural deficiencies, foreign exchange volatility, and fluctuating market demands. As a result, even minor inefficiencies in procurement or stock management can lead to production delays, excess capital tied up in idle stock, and higher wastage rates. The application of technology-enabled procurement systems, such as e-procurement platforms, offers a pathway to address these constraints by improving visibility, data accuracy, and supplier coordination (Afolabi, Ayo-Oyebiyi, & Akinyemi, 2019).

Key performance indicators (KPIs) for inventory control efficiency typically include inventory turnover ratio, order fulfilment rate, average stockout frequency, lead time adherence, and carrying cost percentage (Wild, 2017). High turnover and low carrying costs indicate that an

organisation is effectively matching supply with demand, while consistent order fulfilment rates demonstrate reliability in production and delivery schedules.

Efficient inventory control is not solely a function of internal processes; it is also shaped by the quality of external supplier relationships, market intelligence, and the integration of procurement and inventory systems. When e-procurement adoption practices—such as timely and accurate information sharing, streamlined requisition-to-payment processes, and compliance controls—are fully embedded, SMEs are more likely to achieve optimal inventory levels and reduce operational risks (Bienhaus & Haddud, 2018; Liu, Xu, & Zhang, 2019).

In the context of this study, inventory control efficiency serves as the dependent variable, representing the operational outcome that can be influenced by the six identified dimensions of e-procurement adoption practices. The extent to which these practices are implemented is expected to directly affect the timeliness, cost-effectiveness, and reliability of inventory management in manufacturing SMEs across the South-South region of Nigeria.

2.4 Interplay Between Electronic Procurement Adoption Practices and Inventory Control Efficiency

The relationship between electronic procurement adoption practices and inventory control efficiency is grounded in the premise that procurement processes directly influence the availability, cost, and movement of inventory within an organisation (Croom & Brandon-Jones, 2007). In manufacturing SMEs, procurement is not merely a transactional function but a strategic driver of production continuity, cost competitiveness, and service delivery. The integration of e-procurement systems introduces digital tools and processes that can significantly enhance the speed, transparency, and accuracy of procurement activities, thereby improving inventory performance metrics.

Each of the six dimensions of e-procurement adoption practices plays a critical role in shaping inventory control outcomes. **Top management support** ensures strategic alignment and resource allocation for digital procurement initiatives, enabling consistent application of technology across procurement and inventory processes. **Information quality** enhances

decision-making by providing accurate, timely, and complete data on stock levels, supplier performance, and demand forecasts, reducing the risk of overstocking or stockouts. **System implementation effectiveness** facilitates seamless integration between procurement platforms and inventory management systems, ensuring that purchase orders, receipts, and stock updates are synchronized in real time.

Furthermore, **process efficiency** achieved through e-procurement shortens procurement cycles, reducing lead times and ensuring timely replenishment of inventory. **User adoption and satisfaction** encourage active utilization of the system, fostering compliance with procurement workflows and reducing errors in requisition and ordering. Lastly, **compliance and transparency** in procurement activities ensure adherence to ethical and regulatory standards, which helps to maintain supplier trust, improve contract fulfilment, and minimize disputes that could disrupt inventory availability.

Empirical studies have highlighted that organizations adopting advanced procurement technologies report higher inventory turnover rates, improved demand–supply matching, and reduced holding costs (Bienhaus & Haddud, 2018; Afolabi et al., 2019). In the context of South-South Nigeria, where SMEs face challenges such as fluctuating demand, logistical delays, and supply market volatility, the adoption of well-structured e-procurement practices can be a pivotal factor in achieving operational stability and inventory optimization.

The interplay between these two variables is therefore cyclical. Efficient procurement processes feed accurate and timely information into inventory systems, while well-managed inventory enhances the procurement function by providing clear usage and replenishment data. When both functions are digitally integrated and supported by strong organizational commitment, manufacturing SMEs can expect measurable improvements in cost control, production reliability, and overall competitiveness.

2.5 Appraisal of Stylized Facts

Stylized facts in this context refer to generalized observations and established patterns regarding the adoption of e-procurement practices and inventory control efficiency among manufacturing

SMEs in South-South Nigeria. A review of empirical evidence and sector reports reveals several critical trends that inform the current study.

First, adoption of e-procurement among SMEs remains uneven, often constrained by infrastructural challenges, limited ICT skills, and financial constraints (Omoregbe & Azage, 2024; Afolabi et al., 2022). Despite these barriers, firms that implement digital procurement tools report improvements in operational efficiency, cost reduction, and compliance with procurement regulations (Davila, Gupta, & Palmer, 2002; Bienhaus & Haddud, 2018).

Second, the quality of information generated by e-procurement platforms is strongly associated with inventory performance. Firms that maintain accurate, timely, and comprehensive procurement data demonstrate lower incidences of stockouts, reduced inventory holding costs, and better forecasting capabilities (Nguyen et al., 2020; MacManus, 2002).

Third, top management support consistently emerges as a critical determinant of successful system implementation. SMEs whose leadership champions digital transformation initiatives are more likely to achieve higher user adoption, system utilization, and ultimately, improved inventory control efficiency (Sharma & Yetton, 2003; Trkman & McCormack, 2010).

Fourth, compliance and transparency facilitated by digital procurement systems contribute to stronger supplier relationships and minimize operational risks. Digital traceability enables accountability in procurement decisions and reduces opportunities for corruption, which indirectly supports better inventory management (Omoregbe et al., 2022; Croom & Brandon-Jones, 2004).

Finally, evidence suggests that SMEs that effectively integrate e-procurement with inventory management processes experience a synergistic effect: streamlined procurement reduces lead times, while improved inventory visibility enables precise demand planning and cost optimisation (Tavakoli, Mortezaei, & Manteghi, 2020; Liu, Xu, & Zhang, 2019).

Overall, the stylised facts highlight a strong positive relationship between electronic procurement adoption and inventory control efficiency. They underscore the importance of organisational commitment, information quality, and system effectiveness as enablers of digital transformation

in procurement, thereby setting the foundation for the empirical investigation undertaken in this study.

CHAPTER THREE

LITERATURE REVIEW

3.0 Introduction

This chapter presents a comprehensive review of the literature relevant to the study of electronic procurement (e-procurement) and its influence on inventory control efficiency in manufacturing SMEs in South-South Nigeria. The chapter is structured to provide a deeper understanding of key concepts, theoretical perspectives, and empirical findings relating to e-procurement adoption practices and operational efficiency. It begins by clarifying the central concepts, followed by a review of theoretical frameworks that underpin the study. The chapter then examines empirical studies that explore the relationship between e-procurement adoption and organisational outcomes, with a focus on efficiency, transparency, and compliance. The chapter concludes by identifying gaps in the existing literature that the current study seeks to address.

3.1 Conceptual Clarification

3.1.2 Concept of Inventory Control Efficiency

Inventory control efficiency refers to the ability of an organization to manage its inventory in a manner that ensures optimal stock levels, reduces operational costs, and maintains the uninterrupted flow of goods and services (Kumar, Singh, & Kumar, 2020). Efficient inventory control is critical in public sector organisations, where procurement and supply chain activities must balance cost minimization with service delivery objectives (Ojo, Alhaji, & Kamara, 2021).

Key components of inventory control efficiency include:

- **Stock Accuracy** – Ensuring that recorded inventory quantities match actual stock levels, which prevents shortages and excesses (Tavakoli, Mortezaei, & Manteghi, 2020).
- **Order Fulfilment Timeliness** – The prompt processing and delivery of required materials or products to the relevant departments, reducing operational delays (Ghadimi, Ghassemi Toosi, & Heavey, 2018).

- **Inventory Turnover** – The frequency at which inventory is sold or used within a given period, indicating how efficiently stock is managed (Omoregbe, Olufolahan, & Azage, 2022).
- **Waste and Loss Reduction** – Minimizing obsolescence, spoilage, pilferage, or misplacement of inventory, which can improve resource utilization and cost efficiency (Afolabi, Ibem, Aduwo, & Tunji-Olayeni, 2022).

Effective inventory control enables organisations to meet operational demands without unnecessary holding costs and enhances overall organizational performance (KPMG, 2001; Liu, Xu, & Zhang, 2019). In the context of e-procurement, the integration of digital procurement systems with inventory management facilitates real-time monitoring, improved stock planning, and timely replenishment, thereby improving inventory control efficiency (Omoregbe & Osifo, 2020).

3.1.3 Electronic Procurement Adoption Practices

Electronic procurement (e-procurement) adoption practices encompass the structured and systematic use of digital technologies to manage procurement processes, including planning, sourcing, negotiating, purchasing, and managing supplier relationships (Davila, Gupta, & Palmer, 2003; Molla & Licker, 2005). In the context of manufacturing SMEs in South-South Nigeria, e-procurement adoption has emerged as a critical mechanism for enhancing operational efficiency, transparency, and overall organisational performance (Afolabi, Ibem, Aduwo, & Tunji-Olayeni, 2022).

The effective adoption of e-procurement relies on the readiness and commitment of organisational leadership, often referred to as top management support. This involves leadership actively championing and funding the adoption of digital procurement systems, providing strategic direction, and fostering a culture that encourages innovation and digital transformation (Beatty, Shim, & Jones, 2001). Equally important is the quality of information generated and shared through e-procurement platforms. High information quality ensures that data is accurate,

timely, complete, and reliable, which is essential for informed decision-making and effective supplier evaluation (Bienhaus & Haddud, 2018).

System implementation effectiveness also plays a central role in e-procurement adoption. This dimension reflects the extent to which e-procurement systems are successfully deployed, integrated with existing organisational processes, and supported by adequate training and technical assistance for staff (Wu, Zsidisin, & Ross, 2007). When systems are implemented effectively, they enhance process efficiency by reducing transaction times, minimizing paperwork, and streamlining procurement activities from requisition to payment, thereby improving operational performance (Croom & Brandon-Jones, 2004).

User adoption and satisfaction are critical for the success of e-procurement. Employees' willingness and ability to use the system effectively, along with their perceived satisfaction regarding the usability and performance of the platform, significantly influence the realization of the system's benefits (Chegugu & Yusuf, 2017). Furthermore, compliance and transparency are key outcomes facilitated by e-procurement adoption. Digital platforms provide traceability and auditability of procurement activities, ensuring adherence to regulations, ethical standards, and disclosure requirements, which strengthens accountability and public trust (Omogbe, Olufolahan, & Azage, 2022).

Overall, the adoption of e-procurement practices is associated with enhanced organisational efficiency, improved cost management, and greater transparency. The digital tools and automated processes provided by e-procurement systems enable real-time monitoring, reporting, and evaluation of procurement activities, which support informed decision-making and fosters the achievement of organisational objectives (Davila, Gupta, & Palmer, 2003; Trkman & McCormack, 2010; Omogbe & Osifo, 2020).

3.1.3 Electronic Procurement Adoption Practices

3.1.3.1 Top Management Support

Top management support refers to the commitment and active involvement of organisational leaders in the adoption and implementation of e-procurement systems. This dimension

underscores the role of leadership in providing strategic direction, allocating necessary resources, and fostering a culture conducive to technological innovation and digital transformation (Beatty, Shim, & Jones, 2001). In public sector organisations, effective top management support ensures that e-procurement initiatives are prioritised within the broader organisational agenda, reducing resistance to change and facilitating smoother implementation. Leaders who actively champion e-procurement create an environment in which staff perceive the system as essential for achieving operational objectives, thereby increasing adoption rates and enhancing the likelihood of successful outcomes (Wu, Zsidisin, & Ross, 2007).

3.1.3.2 Information Quality

Information quality within e-procurement adoption practices pertains to the accuracy, completeness, timeliness, and reliability of data generated and shared through digital procurement platforms (Bienhaus & Haddud, 2018). High-quality information is crucial for effective decision-making, supplier evaluation, and resource allocation. In the context of public procurement, information quality ensures that procurement officers have access to valid and up-to-date data, reducing errors, inconsistencies, and the potential for fraud. Moreover, reliable information enables transparency, allowing stakeholders to monitor procurement activities effectively and fostering accountability within the organisation (Omeregbe, Olufolahan, & Azage, 2022).

3.1.3.3 System Implementation Effectiveness

System implementation effectiveness refers to the degree to which e-procurement systems are successfully deployed, integrated with existing organisational processes, and supported with adequate training and technical assistance (Wu, Zsidisin, & Ross, 2007). Effective system implementation ensures that the digital procurement tools function as intended, providing seamless connectivity between planning, tendering, evaluation, and contract management stages. Inadequate implementation can lead to underutilisation, operational inefficiencies, and staff frustration. When properly executed, system implementation enhances process automation,

reduces errors, and ensures that e-procurement delivers measurable improvements in organisational performance (Davila, Gupta, & Palmer, 2003).

3.1.3.4 Process Efficiency

Process efficiency in e-procurement refers to the extent to which digital procurement systems reduce transaction time, minimise paperwork, and streamline procurement activities from requisition to payment (Croom & Brandon-Jones, 2004). Efficient processes result from the automation of repetitive tasks, better coordination between departments, and the elimination of redundant manual procedures. Improved process efficiency not only accelerates procurement cycles but also reduces operational costs and enhances service delivery. In public sector institutions, higher process efficiency directly contributes to the timely execution of projects and more effective utilisation of financial and human resources (Nguyen et al., 2020).

3.1.3.5 User Adoption and Satisfaction

User adoption and satisfaction concern the willingness, ability, and positive perception of procurement staff in using e-procurement systems effectively (Chegugu & Yusuf, 2017). Adoption is influenced by the perceived usefulness and ease of use of the system, while satisfaction reflects employees' confidence and contentment with its performance. High levels of user adoption and satisfaction are critical for realising the full benefits of e-procurement, as staff engagement determines how efficiently the system is utilised. Organisations that invest in training, provide continuous support, and involve users in system design tend to achieve greater adoption, higher satisfaction, and ultimately, improved organisational outcomes (Trkman & McCormack, 2010).

3.1.3.6 Compliance and Transparency

Compliance and transparency in e-procurement refer to the extent to which procurement activities adhere to statutory regulations, ethical standards, and disclosure requirements while remaining traceable and auditable through digital platforms (Omoregbe & Azage, 2022). E-procurement systems enhance accountability by providing digital records of all transactions, approvals, and contract awards, thereby reducing opportunities for corruption and malpractice.

Transparency also fosters public trust, as stakeholders can access procurement information and verify that processes are conducted fairly and in accordance with established guidelines. Compliance and transparency are therefore fundamental to ensuring that e-procurement contributes to effective governance and sustainable organisational performance (Trkman & McCormack, 2010).

3.1.4 Importance of Electronic Procurement

Electronic procurement (e-procurement) represents a transformative approach to the procurement process, integrating digital technology to enhance efficiency, transparency, and strategic decision-making within organisations. The importance of e-procurement is multifaceted, impacting not only the operational performance of organisations but also their overall effectiveness in navigating increasingly competitive markets. This section discusses the various dimensions through which electronic procurement contributes to organisational success.

Firstly, one of the primary benefits of e-procurement is the enhancement of operational efficiency. By automating procurement processes such as requisitioning, ordering, and invoicing, organisations can significantly reduce the time and resources expended on these activities. For instance, a study by Rukuni et al. (2023) found that organisations implementing e-procurement systems experienced a substantial decrease in procurement cycle times, leading to quicker order fulfilment and improved inventory management. This efficiency not only lowers operational costs but also allows procurement professionals to focus on strategic initiatives that can drive further improvements in organisational effectiveness.

Moreover, e-procurement promotes greater transparency and accountability within the procurement process. Traditional procurement methods often suffer from a lack of visibility, which can lead to inefficiencies, corruption, and mismanagement of resources. In contrast, electronic procurement systems provide real-time tracking of purchases and expenditures, allowing organisations to monitor compliance with procurement policies and regulations (Khalid et al., 2022). This transparency is particularly important in the public sector, where there is a heightened need for accountability and responsible management of taxpayer funds. The ability to

audit procurement activities easily and generate comprehensive reports can help organisations mitigate risks associated with fraud and misconduct.

Another significant advantage of electronic procurement is its capacity to enhance supplier relationships. E-procurement platforms often include tools for supplier evaluation, performance monitoring, and communication, which facilitate more collaborative partnerships between organisations and their suppliers (Cai et al., 2023). By streamlining communication and providing a structured framework for evaluating supplier performance, organisations can foster better relationships, negotiate more favourable terms, and ultimately secure higher-quality goods and services. The cultivation of strong supplier relationships is essential for maintaining competitive advantage and ensuring the reliability of supply chains.

Furthermore, electronic procurement supports strategic sourcing by enabling organisations to access a broader range of suppliers and products. Digital platforms facilitate market analysis and supplier discovery, allowing organisations to identify the best sourcing options available (Suleiman & Varga, 2023). This capability not only enhances the quality of procurement decisions but also encourages competitive pricing, which can lead to cost savings. Additionally, the use of data analytics within e-procurement systems enables organisations to make informed decisions based on historical purchasing patterns and market trends, thereby improving their overall procurement strategies.

In addition to cost savings and efficiency, e-procurement can significantly enhance the agility and adaptability of organisations in response to changing market conditions. The rapid advancement of technology requires organisations to be nimble and responsive to shifts in demand, supply chain disruptions, and evolving customer expectations. E-procurement systems empower organisations to quickly adjust their procurement strategies, facilitating swift changes to supplier contracts or product specifications as needed (Ekanayake et al., 2022). This level of responsiveness is crucial for maintaining operational effectiveness in dynamic business environments.

Moreover, the importance of e-procurement extends to sustainability efforts within organisations. Many electronic procurement systems include features that allow organisations to assess the environmental impact of their purchasing decisions, thereby promoting greener procurement practices (Zhang et al., 2023). By prioritising suppliers who demonstrate sustainable practices and sourcing eco-friendly products, organisations can align their procurement activities with broader corporate social responsibility (CSR) objectives. This alignment not only enhances organisational reputation but also meets the growing expectations of consumers and stakeholders regarding sustainability.

Despite the numerous benefits associated with e-procurement, organisations must also consider the potential challenges that can arise during implementation. Issues related to change management, resistance from staff, and the need for training on new systems can pose obstacles to successful adoption (Barasa et al., 2022). To realise the full benefits of e-procurement, organisations must invest in change management strategies and training programmes that facilitate a smooth transition to electronic processes.

3.1.5 Conceptual Framework

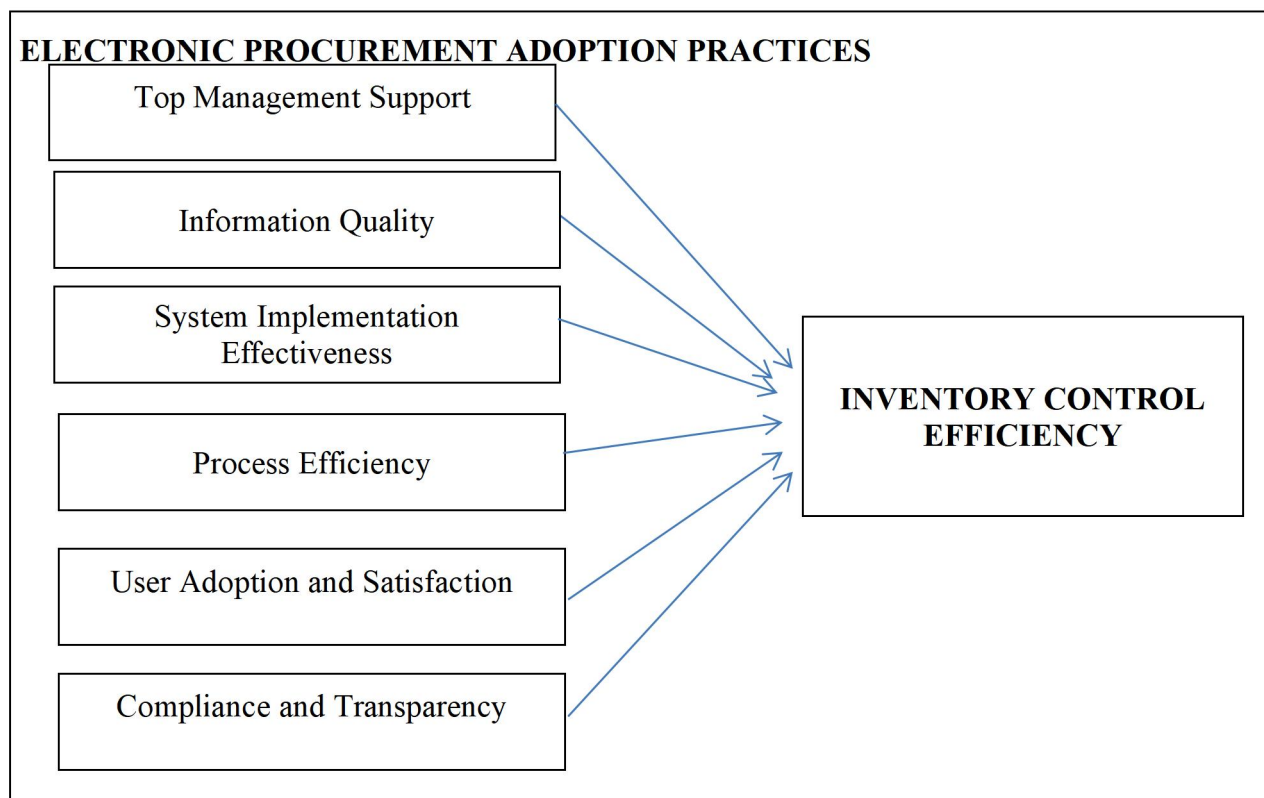
The conceptual framework for this study illustrates the relationship between electronic procurement (e-procurement) adoption practices and inventory control efficiency among manufacturing small and medium-sized enterprises (SMEs) in South-South Nigeria. Conceptual frameworks are essential in research as they provide a structured representation of how variables are theorized to interact, guiding the collection, analysis, and interpretation of data (Hair, Black, Babin, & Anderson, 2014).

In this study, e-procurement adoption practices serve as the independent variable and are operationalized through six dimensions: top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency. These dimensions reflect the organisational and technological readiness of manufacturing SMEs to integrate digital procurement solutions, ensuring that procurement processes are executed efficiently and strategically. Inventory control efficiency is the dependent

variable, encompassing accurate stock monitoring, minimization of wastage, timely procurement replenishment, and optimal utilization of inventory resources (Kumar, Singh, & Kumar, 2020).

The framework posits that effective adoption of e-procurement practices positively influences inventory control efficiency. Top management support ensures that adequate resources and strategic guidance are provided to facilitate the integration of e-procurement systems. High-quality information allows for accurate decision-making in procurement and inventory management. Efficient system implementation and streamlined procurement processes reduce transaction delays, minimise errors, and enhance operational workflows. User adoption and satisfaction ensure that procurement staff utilise the digital tools effectively, while compliance and transparency strengthen regulatory adherence and reduce risks associated with inventory mismanagement. Collectively, these factors contribute to improved inventory control efficiency, thereby enhancing overall operational performance within manufacturing SMEs.

Figure 3.1: Conceptual Framework



Source: Researcher's construction (2025)

3.2 Theoretical Literature Review

This section reviews various theories that is useful for this study on e-procurement adoption practices and inventory control efficiency.

Resource-Based View (RBV) Theory

The Resource-Based View (RBV), proposed by Barney (1991), posits that an organisation's internal resources and capabilities are critical for achieving sustainable competitive advantage. According to RBV, resources that are valuable, rare, inimitable, and non-substitutable (VRIN) enable firms to outperform competitors (Wernerfelt, 1984; Barney, 1991). In the context of manufacturing SMEs, digital tools and e-procurement systems constitute strategic resources that can improve efficiency, reduce operational costs, and optimize inventory management. By effectively leveraging internal capabilities, such as employee technical expertise and information systems, SMEs can enhance procurement planning, streamline inventory processes, and achieve operational flexibility in dynamic market conditions (Mathooko & Ogutu, 2021; Olajide et al., 2023). RBV thus provides a foundation for understanding how the adoption of e-procurement practices can serve as a critical organisational resource that strengthens inventory control efficiency.

Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE), introduced by Coase (1937) and developed by Williamson (1975, 1985), focuses on the costs associated with economic exchanges, such as bargaining, monitoring, and enforcing agreements. Organisations, according to TCE, seek to minimize these transaction costs by adopting structures and mechanisms that reduce uncertainty and opportunistic behaviour. Within the SME context, e-procurement systems can minimise transaction costs related to supplier negotiations, procurement monitoring, and contract enforcement. By automating processes such as e-planning, e-tendering, and e-evaluation, SMEs

can reduce inefficiencies and risks associated with manual procurement, thereby improving inventory control and operational outcomes (Afolabi & Ogunsanwo, 2023; Adekunle et al., 2023). TCE provides a framework to analyse how digital procurement practices enable SMEs to optimise cost management and enhance procurement efficiency.

Diffusion of Innovations (DOI) Theory

Everett Rogers' Diffusion of Innovations (DOI) Theory (1962) explains how new technologies and ideas are adopted within social systems. DOI identifies innovation characteristics—relative advantage, compatibility, complexity, trialability, and observability—that influence adoption rates across different categories of adopters, from innovators to laggards. Applied to manufacturing SMEs, DOI theory helps explain variations in the adoption of e-procurement practices and highlights factors that facilitate or impede uptake. For instance, SMEs that perceive e-procurement systems as advantageous, compatible with existing operations, and observable in practice are more likely to adopt them effectively, leading to enhanced inventory management and operational efficiency (Sharma & Rai, 2022; Kim et al., 2023).

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), formulated by Davis (1986), posits that perceived usefulness (PU) and perceived ease of use (PEOU) determine an individual's intention to adopt a technology. In the SME context, procurement staff are more likely to utilize e-procurement systems when they believe these tools enhance performance and are user-friendly. TAM provides a lens for understanding how staff perceptions influence system adoption and the subsequent impact on inventory control efficiency (Agwu & Achebe, 2023; Okoro et al., 2023). By addressing user attitudes and potential barriers, organisations can improve engagement with digital procurement systems, ensuring more effective inventory management.

Agency Theory

Agency Theory, developed by Jensen and Meckling (1976), addresses conflicts between principals and agents, highlighting issues such as information asymmetry, agency costs, and moral hazard. In SMEs, agency problems can arise when procurement officers act in ways that do not align with organisational objectives. E-procurement practices, through transparent digital processes like e-tendering and contract management, can reduce information asymmetry, improve accountability, and lower agency costs. This alignment of interests between managers and organisational goals enhances procurement effectiveness and strengthens inventory control efficiency (Amadi & Onyeka, 2022; Adewole & Agbaje, 2023).

Stakeholder Theory

Stakeholder Theory, introduced by Freeman (1984), asserts that organisations must consider the interests of all stakeholders' employees, suppliers, customers, and communities—to achieve long-term success. In manufacturing SMEs, adopting e-procurement practices can improve transparency, reporting, and engagement with suppliers and other stakeholders. This alignment fosters trust, collaboration, and compliance, which are critical for maintaining efficient inventory control and achieving operational objectives (Oladipo & Chukwu, 2023; Adewole & Smith, 2023).

Contingency Theory

Contingency Theory, developed by scholars such as Burns and Stalker (1961) and Lawrence and Lorsch (1967), posits that organisational effectiveness depends on alignment with environmental and contextual factors. There is no universal approach; rather, practices must be adapted to specific organisational and situational conditions. For SMEs in South-South Nigeria, this means tailoring e-procurement adoption strategies to match organisational size, technological capacity, regulatory requirements, and market conditions. Effective adaptation enhances inventory control processes and overall operational efficiency (Hollenbeck et al., 2021; Ojo et al., 2023).

Collectively, these theories provide a robust framework for understanding how e-procurement adoption practices influence inventory control efficiency in manufacturing SMEs. They highlight

the interplay between organisational resources, cost management, technology acceptance, stakeholder engagement, and environmental contingencies in shaping operational outcomes.

3.3 Empirical Literature Review

Vaidya, Sajeew, and Callender (2006) conducted a study examining the critical factors influencing the successful adoption of electronic procurement systems (EPS) within the public sector. The researchers identified several key variables that determine the success of e-procurement adoption, including the training of stakeholders, supplier involvement, system integration, security and verification processes, re-engineering, performance measurement, management effectiveness, change management programmes, and communication systems. Their findings indicated that despite governmental reforms aimed at enhancing e-procurement adoption, significant challenges remained. The authors concluded that management influences were the most crucial factors in achieving successful EPS implementation and recommended broader discussions to establish clear critical success factors tailored for public sector organisations.

McCue and Roman (2012) explored the implementation of EPS in the United States and Canada by analysing survey data collected from procurement specialists. Their research revealed that electronic public procurement had not yet resulted in substantial transformative changes in these countries. Several barriers to effective EPS adoption were identified, including the unsuitability of software platforms, organisational resistance, inadequate strategic system integration, and the lack of involvement of public procurement experts in the EPS design process. The authors suggested that to leverage the potential of Information and Communication Technology (ICT) in procurement, it is essential for management, systems analysts, and procurement specialists to actively participate in both the software design and its adoption across various political, institutional, and behavioural contexts.

Yen and Ng (2013) examined the impact of EPS on the purchasing process within the textile industry in Hong Kong, employing SWOT analysis to assess influences at each stage of procurement. Their findings demonstrated that EPS enhanced documentation within the bidding

process, thereby promoting transparency, accountability, and operational efficiency in procurement activities. This study underscored the internal strengths and weaknesses of EPS, contributing to a better understanding of its role in enhancing supply chain efficiency.

Matunga et al. (2013) assessed the influence of EPS on procurement efficiency in public hospitals in Kisii, Kenya. Their study focused on e-tendering, e-quotations, and e-sourcing as primary EPS variables and revealed significant challenges, such as a lack of capital, inadequate funding, difficulties in managing change programmes, and insufficient staff training on new technologies. Despite these challenges, the study concluded that public hospitals had begun implementing EPS to varying extents.

Chegugu and Yusuf (2017) investigated the impact of EPS practices on the performance of public hospitals in Uasin Gishu County, Kenya. The research specifically assessed the effects of electronic tendering, electronic invoicing, and electronic payment on organisational performance. Using a survey research design with a sample size of 367 respondents, the study found that electronic tendering increased competitiveness in bidding processes. Moreover, the implementation of electronic invoicing facilitated clearer tracking of charges from purchasers to suppliers, while electronic payment systems reduced costs associated with timely payments to suppliers. The authors recommended that all hospitals automate invoicing practices to enhance accountability and transparency, enabling more efficient record management and prompt identification of outstanding payments.

Utile et al. (2024) conducted a study to empirically examine the impact of electronic procurement (e-procurement) on the competitiveness of quoted foods and beverages manufacturing firms in Nigeria. The research specifically focused on the effects of e-tendering, e-sourcing, and e-invoicing on the competitive positioning of these firms. Utilising a survey design, the study gathered both primary and secondary data from a population of 10,094 employees working in quoted food and beverages manufacturing firms. The sample size was determined using the Yamane (1967) formula, resulting in a target of 384 employees. A Likert scale-type questionnaire served as the primary data collection tool, with 354 completed

responses retrieved for analysis. Data were analysed using both descriptive statistics (including percentages, frequency, mean, standard deviation, skewness, and kurtosis) and inferential statistics (correlation and regression analysis). Hypotheses were tested using regression estimates computed with SPSS Version 25, employing a significance level of 5% (95% confidence level). The findings revealed that e-tendering had a positive and significant effect on the competitiveness of quoted foods and beverages manufacturing firms. In contrast, both e-sourcing and e-invoicing exhibited negative but significant effects on competitiveness. The study concluded by recommending that, despite the identified negative effects associated with e-sourcing and e-invoicing, their strategic implementation could still yield operational efficiencies. It emphasised the importance of customizing these practices to fit the specific dynamics of the foods and beverages manufacturing industry in Nigeria. Additionally, it highlighted the need for firms to establish mechanisms for continuous monitoring and adaptation to effectively respond to the evolving technological and market conditions.

Omoregbe and Osifo (2020) conducted a study to investigate employee perceptions of the electronic procurement system (EPS) and the rate of its adoption in federal public hospitals in Edo State, Nigeria, framed within Rogers' Diffusion of Innovations Theory. The research specifically assessed the innovation characteristics of EPS, including relative advantage, trialability, compatibility, observability, and complexity, to evaluate their influence on the adoption rate. The study also explored the challenges faced by hospitals in adopting EPS and the associated benefits of its implementation. A convenience sampling technique was employed, targeting 45 management staff members from the procurement departments of three federal public hospitals in Edo State. The study distributed structured questionnaires, and data were analysed using the Ordinary Least Squares (OLS) regression method through SPSS Version 22. The findings indicated that the most significant challenge in adopting the EPS was the lack of necessary infrastructure, primarily due to inadequate funding. In terms of benefits, the adoption of EPS resulted in reduced time wastage in procurement processes and minimized errors from document handling, thereby enhancing operational efficiency. The regression analysis showed

that all assessed exogenous variables positively influenced the rate of EPS adoption, except for the complexity of the system, which had a negative effect on management's policy decisions. Notably, the relative advantage of the EPS emerged as the strongest predictor of positive attitudes toward the adoption of new innovations among hospital management. The study recommends that hospitals adopt innovations that are simple and user-friendly to facilitate quicker acceptance among employees. It also advises management to invest in necessary information technology infrastructure and to provide training for personnel to ensure successful EPS implementation. By equipping staff with the required digital skills and knowledge, hospitals can effectively enhance their adoption of e-procurement systems.

Omoregbe, Olufolahan, and Azage (2022) conducted a study on the impact of electronic procurement practices on sustainable organisational competitive advantage within Nigeria's upstream oil and gas sector. The study specifically explored the relationships between electronic tendering, electronic invoicing, electronic payment, and electronic auctioning and their influence on sustainable competitive advantage among selected oil and gas companies in the Niger-Delta region. Employing both ex-post facto and survey research designs, the researchers targeted employees and management staff within the procurement departments of these companies. Using a convenience sampling technique, 224 questionnaires were distributed, with 220 valid responses retrieved. The researchers utilised Ordinary Least Squares (OLS) regression analysis, conducted through SPSS Version 22, to evaluate the impact of the electronic procurement practices. The results indicated that electronic tendering, electronic invoicing, and electronic payment had a positive and significant impact on sustainable organisational competitive advantage within the upstream oil and gas sector. In contrast, electronic auctioning, while positively correlated, did not show a statistically significant influence on competitive advantage. Based on these findings, the authors recommended that management in the upstream oil and gas sector should prioritise electronic tendering, implement automated invoicing processes, and standardise e-payment methods to strengthen their competitive positioning. Additionally, although electronic auctioning did not significantly impact competitive advantage, the study suggested that management could

benefit from further refinement of auctioning practices to enhance the full potential of e-procurement initiatives in driving sustainable competitive advantages.

Omoregbe and Azage (2024) investigated the critical success factors (CSFs) and management practices supporting the implementation of electronic procurement initiatives in Nigeria's upstream oil and gas sector. Their study focused on key CSFs, including organisational e-procurement competency, change management programmes, top management support, end-user training, supplier involvement, and e-procurement implementation strategy, which were identified as essential to successful management of e-procurement initiatives within this industry. A survey research design was employed, targeting procurement staff across Nigerian upstream oil and gas firms. A total of 232 structured questionnaires were distributed through convenience sampling, with 229 responses successfully retrieved. Data analysis was conducted using Ordinary Least Squares (OLS) regression, facilitated by SPSS Version 22. The results revealed a positive and significant relationship between each CSF and the effective management of e-procurement initiatives in the sector. Among these factors, organisational e-procurement competency emerged as the primary driver, demonstrating the highest influence on e-procurement implementation, as noted by procurement staff within the selected firms. The study recommends that management should help end-users view change as an essential element of organisational growth, as traditional approaches to procurement need adaptation over time. Additionally, top management should actively support training initiatives, equipping end-users with the necessary skills to engage effectively with e-procurement systems. Further, it advises management to foster strong business relationships, increase awareness, build confidence, and create spaces for suppliers to contribute feedback on relevant updates, issues, and enhancements to supplier catalogues and the e-procurement system. This approach enables management to monitor and adjust e-procurement practices continuously, ensuring that they meet organisational needs and adapt to evolving requirements.

Maagi and Mwakalobo (2023) investigated the impact of e-procurement practices on customer satisfaction within the context of public procurement in Tanzania. The study specifically focused

on users' perceptions regarding how e-procurement influences customer satisfaction. Employing an explanatory sequential mixed-methods approach, the research involved the collection of both quantitative and qualitative data in two distinct phases. The study's population comprised staff members from five selected procuring entities, with quantitative data gathered via questionnaires distributed to respondents chosen through simple random sampling. Using the Taro Yamane (1967) formula, a sample size of 350 respondents was determined, randomly selected from the five public entities noted for their extensive use of e-procurement in Tanzania. While 350 questionnaires were distributed, 290 were completed and returned, resulting in a response rate of 82.86%. The study utilised a binary regression model to analyse the significant effects of e-procurement on customer satisfaction. Additionally, a Binary Logistics Regression Model was employed to assess the impact of independent variables—such as tangibility, responsiveness, reliability, empathy, and assurance—on the dependent variable of customer satisfaction. Findings indicated a significant relationship between the utilisation of e-procurement and enhanced customer satisfaction in procurement. This research contributes to the understanding of e-procurement's role in fostering customer satisfaction in Tanzania's public procurement sector, while the current study explores e-procurement's effects on the competitiveness of quoted food and beverage manufacturing firms in Nigeria.

Gaurs (2023) examined the implementation of e-procurement in the United Arab Emirates, focusing on identifying its benefits and challenges. This study aimed to assess the level of e-procurement implementation in the UAE, covering various processes such as seeking, sourcing, negotiating, ordering, receiving, and post-purchase review. In light of advancements in information and communication technology and the rapid growth of the internet, a growing number of individuals and organisations are becoming interconnected. E-procurement forms part of the electronic government systems that many governments worldwide are exploring to modernise operations. This article, based on a case study from the UAE, discusses the advantages gained and the obstacles faced during the implementation of an electronic procurement system. A qualitative methodology was employed, involving semi-structured face-

to-face interviews with 15 procurement professionals experienced in e-procurement implementation. The thematic analysis aimed to provide insights into the subject matter. The study identified several perceived benefits of e-procurement, including improved communication, process visibility, and effective process mapping. It also highlighted critical challenges such as system integration and user acceptance, among others, within the UAE context. By addressing these issues, organisations can establish a more effective e-procurement system. While this research is situated in the UAE, the present study is focused on Nigeria.

Nyamari et al. (2023) explored the impact of the electronic tender advertisement system on the operational performance of small and medium enterprises (SMEs) in Kenya. The study specifically aimed to evaluate how access to tenders through websites affects SMEs' operational performance in Murang'a County. Anchored in Schumpeter's theory of entrepreneurship, a descriptive study design was utilised. The study population consisted of 2,500 SMEs in Murang'a County, with a sample size of 189 SMEs determined using the Taro Yamane formula. Data were collected through SPSS version 23, employing multiple regression analysis. The results indicated a significant effect of e-tender advertisements on the operational performance of SMEs. The study recommended enhancing visibility for upcoming tender contracts and suggested that firms should advertise tenders on widely accessible media platforms. While this study focuses on electronic tender advertisements in Kenya, the current study examines the effects of e-tendering on the competitiveness of quoted food and beverage manufacturing firms in Nigeria.

Nyokabi et al. (2023) investigated the effects of electronic tendering on the organisational performance of parastatals in Nakuru County, Kenya. The research aimed to assess the impact of electronic tendering as a supplier management tool on organisational performance. Grounded in the Innovation Diffusion Theory, the study's population included 236 employees from selected departments, from which a sample of 91 employees was drawn using Daniels' (1999) sample size formula. Structured questionnaires served as the primary data collection instrument, yielding responses from 80 participants, resulting in an 87.9% response rate. The findings confirmed a

statistically significant relationship ($P = .000$) between electronic tendering and a positive marginal increase ($B = .133$) in organisational performance. While this study is centred on parastatals in Nakuru County, Kenya, the present research focuses on the competitiveness of quoted food and beverage manufacturing firms in Nigeria.

Marei (2022) examined the influence of e-procurement on financial performance, considering the moderating role of competitive pressure in Jordan. The study evaluated the predictors and outcomes of e-procurement adoption, drawing upon the Resource-Based View (RBV) and Technology-Organization-Environment (TOE) frameworks. It proposed that technological factors (relative advantage, compatibility, and complexity) and organisational factors (top management support, organisational readiness, and Information System (IS) committee involvement) significantly affect e-procurement, which subsequently impacts firm performance. Competitive pressure was posited as a moderating variable between technological and organisational factors and e-procurement outcomes. The population included large firms in Jordan, and purposive sampling was utilised to collect data via a questionnaire, yielding 221 responses. Data analysis was conducted using SmartPLS. Results demonstrated that technological and organisational factors significantly influence e-procurement, which in turn affects firm performance. However, competitive pressure did not moderate the relationship between technological and organisational factors and e-procurement. The findings offer insights for policymakers in Jordan to enhance e-procurement adoption and improve firm performance by emphasising its benefits while mitigating the complexities associated with new technologies. This research is situated in Jordan, whereas the present study focuses on Nigeria.

Giang et al. (2022) investigated the determinants of the effectiveness of e-invoicing implementation in Hanoi. The study employed a survey design for data collection, analysing the results using SPSS 19 software. Findings indicated that perceived risk accounted for 54.4% of the variance in the dependent variables, with three key determinants positively influencing the effectiveness of e-invoicing implementation. The current research addresses e-invoicing as one

dimension related to the competitiveness of quoted food and beverage manufacturing firms in Nigeria.

Chinogwenya and Utete (2023) conducted a study examining the connection between strategic procurement management and organizational performance within a prominent health sector organisation in Zimbabwe. Despite prior research on procurement practices, a thorough understanding of this relationship remains underexplored. The authors highlighted the necessity for substantial evidence to elucidate procurement management concepts, prompting this investigation. Employing a descriptive research design and a quantitative approach, the study gathered data from 40 randomly selected supply chain leaders at a global public health organisation in Zimbabwe through a closed-ended questionnaire. The results revealed a positive correlation between effective procurement management and enhanced organizational performance. Specifically, the study identified that the implementation of e-procurement systems and the establishment of strategic buyer-supplier relationships significantly influenced organizational outcomes. In light of these findings, the authors advocate for the adoption of electronic procurement systems and robust management strategies to cultivate strategic partnerships with suppliers, thereby fostering improved organizational performance in the health sector. This research offers valuable insights for organisations aiming to optimise their procurement processes and highlights the critical role of technology and collaboration in achieving organisational success.

Hannah and Nani (2021) conducted a study titled *Improving Procurement Performance in the Public Sector with the Implementation of E-procurement: A Study of Selected Metropolitan and Municipal Assemblies in the Ashanti Region of Ghana*. The research emphasised that public procurement plays a pivotal role in enabling governments to carry out their operations. This involves acquiring goods, works, and services from external parties, guided by the "five rights" principle: obtaining the right items, in the right quantity and quality, at the right price, at the right time and place, and from the right source. While government procurement systems are generally well-structured in terms of their organisation and procedures, they have historically relied on

manual processes, which are prone to inefficiencies and corruption. Weaknesses in execution further hinder performance. The study aimed to investigate how the adoption of e-procurement could enhance procurement performance in the public sector. Its objectives included identifying shortcomings in current practices, assessing their impact on performance, and determining how e-procurement could address these deficiencies. A quantitative methodology was adopted, utilizing a well-structured, close-ended questionnaire distributed to respondents within the selected assemblies. Data were analyzed using frequencies, the relative importance index, and a one-sample t-test with the support of the Statistical Package for Social Sciences (SPSS version 23.0). The study's findings highlighted significant weaknesses in the existing procurement processes, which impede effective and efficient task execution. However, it also revealed that these challenges could be minimized or resolved through the application of e-procurement tools. The implementation of e-procurement was shown to significantly improve procurement performance. Consequently, the study recommended engaging experts with specialized knowledge in e-procurement to address the identified challenges inherent in traditional (manual) procurement practices.

Siwandeti, Sanga, and Panga (2021) conducted a study titled *Perceived Benefits of Participation in Public Electronic Procurement: A Comparative Analysis of Vendors in Ilala District, Tanzania*. This research explored public electronic procurement systems (PEPS), which are emerging technologies designed to improve efficiency and ensure value in public procurement processes. For the successful realization of PEPS benefits, vendor participation is crucial. However, existing studies have yet to conclusively address the impact of perceived benefits on participation among both participant and non-participant vendors. The study employed a cross-sectional research design, with Ilala District serving as the focus area. A simple random sampling technique was used to select 300 respondents, comprising 73 participating vendors and 227 non-participating vendors. Additionally, purposive sampling identified three key informants from the Public Procurement Regulatory Authority (PPRA), the Government Procurement Service Agency (GPSA), and the Medical Stores Department (MSD). Data collection involved structured

questionnaires for quantitative data and key informant interviews for qualitative insights. Multiple response analysis and independent samples t-tests were applied to the quantitative data, while qualitative data were analyzed using content analysis techniques. The findings revealed a significant difference ($p < 0.05$) between participants and non-participants regarding perceived benefits such as transparency, paper reduction, cost control, and corruption control. The study concluded that perceived benefits play a significant role in motivating vendor participation in PEPS. Recommendations included encouraging non-participating vendors to engage with PEPS to access these benefits. Additionally, the study advised the PPRA to ensure that PEPS consistently deliver on these perceived benefits. To achieve this, system stakeholders were urged to enhance vendors' awareness and knowledge of PEPS benefits, thereby fostering greater participation.

Afolabi, Ibem, Aduwo, and Tunji-Olayeni (2022) explored the application of e-Procurement technologies in addressing the grey areas within the Nigerian public procurement system in their study titled *Digitizing the Grey Areas in the Nigerian Public Procurement System Using e-Procurement Technologies*, published in the *International Journal of Construction Management*. Public procurement plays a critical role in societal development by facilitating urban growth and providing essential infrastructure that enhances citizens' quality of life. However, its success is often undermined by corrupt practices exploiting weaknesses, or "grey areas," in the procurement processes. The study aimed to identify these grey areas and explore how digital solutions in e-Procurement technologies could be applied to address them. A survey-based research approach was employed, using a structured questionnaire administered across Nigeria's six geopolitical zones. The sample included 759 construction stakeholders with practical knowledge of e-Procurement technologies and experience in public sector procurement. A two-stage sampling technique was used to ensure representativeness. Key findings of the study highlighted the e-Procurement tools utilized by stakeholders for various procurement activities, including project announcement/notification, information exchange, tendering and proposal submission, contract award notification, progress monitoring, and payment processing. These

tools were identified as crucial for reducing grey areas within procurement processes, which often serve as loopholes for corrupt practices. The study concluded that e-Procurement technologies could significantly minimize corrupt tendencies, enhance accountability in the use of public funds, and bridge the digital divide within the public procurement sector. By leveraging these digital tools, the public procurement system in Nigeria can achieve greater transparency, efficiency, and accountability.

3.4 Summary of Empirical Literature

S/N	Title	Objective	Location	Periods	Methods	Findings
1	Vaidya, Sajeev, and Callender (2006)	To examine the critical factors influencing the adoption of electronic procurement systems (EPS) in the public sector.	Global	2006	Qualitative	Identified key factors for successful EPS adoption, including training, system integration, and management effectiveness. Challenges remain despite governmental reforms.
2	McCue and Roman (2012)	To explore the implementation of EPS in the United States and Canada.	USA, Canada	2012	Survey	Identified barriers to effective EPS adoption, including unsuitable software, organizational resistance, and lack of expert involvement in design.
3	Yen and Ng (2013)	To examine the impact of EPS on the purchasing process in Hong Kong's textile industry.	Hong Kong	2013	SWOT Analysis	EPS enhanced transparency, accountability, and operational efficiency in procurement.
4	Matunga et al. (2013)	To assess the influence of EPS on procurement efficiency in public hospitals	Kenya	2013	Survey	Found significant challenges such as lack of capital and insufficient staff

		in Kisii, Kenya.				training, but public hospitals began implementing EPS.
5	Chegugu and Yusuf (2017)	To investigate the impact of EPS practices on public hospitals' performance in Kenya.	Kenya	2017	Survey	Found that electronic tendering increased competitiveness, invoicing improved tracking, and electronic payment reduced costs.
6	Utile et al. (2024)	To examine the impact of EPS on the competitiveness of quoted food and beverage firms in Nigeria.	Nigeria	2024	Survey	Found that e-tendering positively impacted competitiveness, while e-sourcing and e-invoicing had negative effects.
7	Omoregbe and Osifo (2020)	To investigate employee perceptions of EPS adoption in federal public hospitals in Edo State, Nigeria.	Nigeria	2020	Survey	Identified challenges like lack of infrastructure and funding, but EPS adoption led to reduced time and error. Relative advantage was the strongest predictor of adoption.
8	Omoregbe, Olufolahan, and Azage (2022)	To investigate the impact of EPS on sustainable competitive advantage in Nigeria's upstream oil and gas sector.	Nigeria	2022	Survey	Found that e-tendering, invoicing, and payment positively impacted competitive advantage. Electronic auctioning showed no significant effect.
9	Omoregbe and Azage	To examine the critical success	Nigeria	2024	Survey	Found positive relationships

	(2024)	factors (CSFs) for implementing EPS in Nigeria's upstream oil and gas sector.				between key CSFs (e-procurement competency, management support, training, supplier involvement) and effective EPS management.
10	Maagi and Mwakalobo (2023)	To assess the impact of e-procurement on customer satisfaction in Tanzania's public procurement sector.	Tanzania	2023	Mixed Methods	Found a significant relationship between e-procurement and enhanced customer satisfaction in procurement.
11	Gaurs (2023)	To examine the benefits and challenges of implementing e-procurement in the UAE.	UAE	2023	Qualitative	Identified benefits such as improved communication and process visibility, but challenges included system integration and user acceptance.
12	Nyamari et al. (2023)	To evaluate how electronic tender advertisement impacts SMEs' operational performance in Kenya.	Kenya	2023	Survey	Found a significant effect of e-tender advertisements on SMEs' operational performance.
13	Nyokabi et al. (2023)	To investigate the effects of electronic tendering on the performance of parastatals in Kenya.	Kenya	2023	Survey	Found that electronic tendering positively impacted the performance of parastatals.
14	Siwandeti et al., (2021)	To analyze perceived benefits of public electronic procurement	Ilala District, Tanzania	2021	Cross-sectional design, structured questionnaire, and key	Identified significant differences between participants and non-participants

		(PEPS) for participants and non-participants vendors.			informant interviews. Quantitative analysis (t-test, frequencies) and qualitative content analysis.	in transparency, cost control, paper reduction, and corruption control through PEPS.
15	Afolabi et al., (2022)	To examine grey areas in public procurement processes and identify digital solutions available in e-procurement technologies.	Nigeria	2022	Survey design, questionnaire instrument, two-stage sampling technique targeting construction stakeholders.	Highlighted grey areas in public procurement processes requiring digitalization. Identified e-Procurement technologies for tendering, notifications, and payments.
16	Hannah and Nani, (2021)	To identify weaknesses in manual procurement practices and explore how e-procurement improves procurement performance in the public sector.	Ghana	2021	Quantitative approach using close-ended questionnaires. Data analyzed with frequencies, relative importance index, and one-sample t-test (SPSS).	Revealed weaknesses in manual procurement practices and showed how e-procurement tools enhance transparency, efficiency, and performance.

Source: Author's compilation (2025)

3.5 Gaps in the Literature Reviewed

In examining the relationship between e-procurement adoption practices and inventory control efficiency among manufacturing SMEs in South-South Nigeria, several critical gaps emerge in the existing literature, highlighting the need for research that is contextually grounded and sector-specific.

Firstly, there is a pronounced geographical gap. While e-procurement adoption has been widely studied in developed economies and large metropolitan areas, research focusing on manufacturing SMEs in South-South Nigeria is limited (Omoregbe, Olufolahan, & Azage, 2022; Afolabi, Ibem, Aduwo, & Tunji-Olayeni, 2022). Most existing studies tend to generalize findings

from larger firms or public institutions, which may not reflect the distinctive operational challenges, infrastructural limitations, and socio-economic realities of SMEs in this region.

Secondly, there is a population gap. Previous research often concentrates on large manufacturing enterprises or public-sector organisations, neglecting the unique characteristics of SMEs. The structure, resource availability, and managerial practices within SMEs can substantially affect both the adoption of e-procurement systems and the efficiency of inventory control (Kumar, Singh, & Kumar, 2020). This highlights the need for empirical studies that consider the specific organisational dynamics of SMEs to generate findings that are directly applicable to this sector.

Thirdly, there is a knowledge gap regarding the specific factors influencing e-procurement adoption and its effect on inventory control efficiency in manufacturing SMEs. While studies have discussed general benefits and challenges of e-procurement, there is limited understanding of how dimensions such as top management support, information quality, system implementation effectiveness, process efficiency, user adoption, and compliance and transparency translate into improved inventory control outcomes (Omogbe & Azage, 2024). Additionally, stakeholders' perceptions, experiences, and expectations in the context of SMEs have not been thoroughly explored.

Fourthly, the literature reflects inconsistencies and conflicting findings. Some studies suggest a strong positive relationship between e-procurement adoption and operational efficiency, while others report minimal or mixed effects (Trkman & McCormack, 2010; Chegugu & Yusuf, 2017). These contradictions may stem from variations in organisational context, sector, or methodology, necessitating further research to clarify the nature and strength of this relationship within the SME manufacturing sector in South-South Nigeria.

Methodologically, there is a gap in the research designs employed. Many previous studies have relied exclusively on qualitative or cross-sectional methods, which may not capture the complex interactions between e-procurement practices and inventory control processes (Omogbe et al., 2022). Mixed methods designs or longitudinal studies could provide deeper insights into both the adoption process and the resulting operational efficiencies over time. Furthermore, advanced

statistical techniques capable of modelling multiple influencing factors simultaneously have been underutilized, limiting the robustness of prior findings (Hair et al., 2014).

Finally, there is a practical and implementation gap. While previous studies acknowledge the challenges of e-procurement adoption, there is limited guidance on addressing issues such as infrastructural inadequacies, resistance to change, and capacity constraints in SMEs (Davila, Gupta, & Palmer, 2002; Omoregbe & Azage, 2024). Moreover, few studies offer actionable recommendations for SME managers and policymakers aimed at enhancing inventory control efficiency through strategic e-procurement adoption.

In conclusion, addressing these gaps is essential for developing a nuanced understanding of how e-procurement adoption practices influence inventory control efficiency among manufacturing SMEs in South-South Nigeria. By focusing on this under-researched context and population, the current study seeks to contribute both to academic knowledge and to practical strategies for improving operational performance in the SME sector.

CHAPTER FOUR

THEORETICAL FRAMEWORK AND METHODOLOGY

4.0 Introduction

This chapter presents the theoretical foundations and methodological approach adopted in the study. The theoretical framework integrates adoption and technology acceptance theories with inventory control theory to establish the conceptual and empirical basis for examining the relationship between e-procurement adoption practices and inventory control efficiency in manufacturing SMEs in South-South Nigeria. The chapter further specifies the econometric model used in the analysis, details the estimation techniques employed, states the apriori expectations, and provides a description of the variables, data, and data sources.

4.1 Theoretical Framework

The theoretical framework for this study is anchored in the Technology Acceptance Model (TAM), developed by Davis (1986), which provides a structured basis for understanding user acceptance of technological systems. TAM is particularly relevant in the context of electronic procurement, as it offers insights into the factors that affect users' willingness to adopt and effectively utilise technology within organisational environments. According to TAM, two primary factors shape an individual's decision to use new technology: perceived usefulness (PU) and perceived ease of use (PEOU). PU refers to the degree to which a person believes that using a specific technology will enhance their job performance, while PEOU reflects the extent to which they find the technology free from effort (Davis, 1989).

In public sector settings, especially within Ministries, Departments, and Agencies (MDAs), the adoption of electronic procurement tools—such as e-planning, e-tendering, e-evaluation, e-award, e-publishing, and contract management—requires a systematic understanding of user perceptions. TAM is highly suitable for this study as it enables the analysis of how MDAs' staff perceive these tools' usefulness and ease of use, which are essential determinants of their adoption and sustained utilisation. Recent studies affirm TAM's applicability in various fields where

technology integration plays a critical role in achieving organisational effectiveness (Venkatesh & Bala, 2021; Okoro et al., 2023).

Within this study's framework, perceived usefulness is reflected in how e-procurement practices improve operational efficiency, transparency, and effectiveness within MDAs in Edo State. Perceived ease of use, on the other hand, is represented by the extent to which employees feel that electronic procurement tools simplify their procurement processes and reduce procedural burdens. By examining these dimensions, TAM provides a lens to predict and enhance the likelihood of successful e-procurement implementation in the public sector, offering practical insights into factors that can increase staff engagement with e-procurement and, ultimately, improve organisational effectiveness.

Thus, TAM serves as an essential foundation for analysing how technology acceptance affects the adoption of e-procurement practices, helping to identify potential challenges and facilitators within the studied MDAs.

4.2 Model Specification

The empirical analysis is based on a multiple regression model, which estimates the effect of selected e-procurement adoption practices on inventory control efficiency. The general functional form of the model is expressed as:

$$ICE_i = \beta_0 + \beta_1 TMS_i + \beta_2 IQ_i + \beta_3 SIE_i + \beta_4 PE_i + \beta_5 UAS_i + \beta_6 CT_i + \mu_i$$

Where:

ICE = Inventory Control Efficiency for SME

TMS = Top Management Support

IQ = Information Quality

SIE = System Implementation Effectiveness

PE = Process Efficiency

UAS = User Adoption and Satisfaction

CT = Compliance and Transparency

β_0 = Intercept

$\beta_1, \beta_2, \dots, \beta_6$ = Coefficients to be estimated

μ_i = Error term capturing other unobserved factors

The model is specified to quantify the extent to which each dimension of e-procurement adoption contributes to variations in inventory control efficiency.

4.3 Estimation Techniques

The analysis of data for this study was undertaken using a systematic approach to ensure accuracy, reliability, and alignment with the stated research objectives. Initially, all retrieved questionnaires were screened to identify validly completed ones, while incomplete or improperly filled questionnaires will be excluded from further analysis. The valid responses will be coded and entered into Microsoft Excel for initial organization before being exported to the Statistical Package for the Social Sciences (SPSS) version 24 for comprehensive statistical analysis.

Descriptive statistics, including means, standard deviations, frequencies, and percentages, will be employed to summarize the demographic characteristics of respondents and to provide an overview of their responses. This step present a general profile of the sampled manufacturing SMEs and their level of e-procurement adoption.

To address the specific objectives, inferential statistical techniques will be utilized. Pearson's correlation analysis will be applied to determine the strength and direction of the relationships between each dimension of e-procurement adoption practices (top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency) and inventory control efficiency.

Regression analysis, specifically multiple linear regression was employed to assess the individual and combined effects of the independent variables on inventory control efficiency. This will enable the determination of the statistical significance and practical implications of each factor in predicting inventory control outcomes. Additionally, Analysis of Variance (ANOVA) will be used to test for significant differences in inventory control efficiency across varying levels of e-procurement adoption.

The findings will be presented in tables, charts, and graphs to facilitate clear interpretation. These visual representations will highlight patterns, trends, and relationships within the data, thereby enhancing the understanding of how e-procurement adoption practices influence inventory control efficiency among manufacturing SMEs in South-South Nigeria.

4.4 Apriori Expectations, Variables/ Data Descriptions and Data Sources

Apriori Expectations

Apriori expectations are based on theoretical reasoning and prior empirical evidence, providing anticipated outcomes before the actual data analysis. In the context of this study, which examines the impact of e-procurement adoption practices on inventory control efficiency among manufacturing SMEs in South-South Nigeria, it is expected that each e-procurement adoption dimension will have a positive and statistically significant relationship with inventory control efficiency.

The apriori expectation can be stated as:

$$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0 \text{ and } \beta_6 > 0 \quad (3.4)$$

This implies that:

β_1 (Top Management Support) is anticipated to positively influence inventory control efficiency.

β_2 (Information Quality) is expected to enhance inventory control efficiency.

β_3 (System Implementation Effectiveness) is projected to improve inventory control efficiency.

β_4 (Process Efficiency) is expected to positively affect inventory control efficiency.

β_5 (User Adoption and Satisfaction) is likely to improve inventory control efficiency.

β_6 (Compliance and Transparency) is anticipated to positively influence inventory control efficiency.

These expectations are based on the hypothesis that higher adoption and effective use of e-procurement practices will improve stock accuracy, reduce wastage, enhance reorder efficiency, and lower holding costs, thereby improving the overall inventory control efficiency of manufacturing SMEs in the region.

Operationalisation of Variables

The independent variables relating to e-procurement adoption practices were measured using a 30-item questionnaire on a 5-point Likert scale, with four items allocated to each sub-variable.

The dependent variable, inventory control efficiency, was measured using a 4-item questionnaire also on a 5-point Likert scale.

Table 4.1: Operationalisation of Variables

S/N	Variable	Measuring scale	Operationalisation	No. in Questionnaire
1	Sex	2-point categorical	Gender of respondent	Q1
2	Age	5-point categorical	Respondent's age group	Q2
3	Marital Status	4-point categorical	Marital status	Q3
4	Educational Qualification	6-point categorical	Highest academic qualification	Q4
5	Position in Organization	4-point categorical	Job role/position	Q5
6	Years of Experience	5-point categorical	Number of years in current role	Q6
7	Top Management Support	5-point Likert	Extent of leadership commitment to e-procurement adoption	Q7–Q11
8	Information Quality	5-point Likert	Accuracy, relevance, and timeliness of procurement data	Q12–Q16
9	System Implementation Effectiveness	5-point Likert	Functionality, reliability, and integration of e-procurement systems	Q17–Q21
10	Process	5-point	Speed, cost-effectiveness, and resource	Q22–Q26

	Efficiency	Likert	utilization in procurement	
11	User Adoption and Satisfaction	5-point Likert	Employee engagement, acceptance, and satisfaction with e-procurement systems	Q27–Q31
12	Compliance and Transparency	5-point Likert	Adherence to procurement rules and visibility of procurement activities	Q32–Q36
13	Inventory Control Efficiency	5-point Likert	Accuracy of stock levels, reduction in stockouts, and improved reorder processes	Q37–Q41

Source: Researcher's Compilation, 2025

Sources and Methods of Data Collection

Primary data was collected through a structured questionnaire divided into two sections. Section A collected the socio-demographic characteristics of respondents while Section B included statements related to the independent variables (e-procurement adoption practices) and dependent variable (inventory control efficiency). Respondents indicated their level of agreement using a 5-point Likert scale where 1 = Strongly Disagree and 5 = Strongly Agree. Questionnaires were distributed using stratified random sampling to ensure representation across different SME sizes and industries within the South-South geopolitical zone. The questionnaire were distributed using convenience sampling, allowing respondents to choose their most preferred responses to each item. This method is designed to simplify data collection and ensure that respondents can provide their input with ease.

CHAPTER FIVE

PRESENTATION OF EMPIRICAL RESULTS

5.0 Introduction

Chapter Five presents the empirical results of the study on the effect of e-procurement adoption practices on the inventory control efficiency of manufacturing SMEs in South-South Nigeria. This chapter is structured to provide a comprehensive analysis of the data, focusing on the relationship between e-procurement adoption practices and inventory control efficiency in the selected manufacturing SMEs.

The chapter begins with pre-estimation analyses, followed by the main estimation results, and concludes with a discussion of the findings in relation to the research objectives and hypotheses. The aim of this chapter is to present the data collected from respondents, analyse the effect of e-procurement adoption practices on inventory control efficiency, and assess the validity of the research hypotheses.

The analysis employs statistical techniques to ensure the robustness and reliability of the findings. These results were interpreted within the context of the study's objectives, focusing on how top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency influence inventory control efficiency in the selected manufacturing SMEs.

This chapter also provides insights into the policy and practical implications of the findings, offering recommendations that can guide improvements in e-procurement strategies. Furthermore, the findings are discussed in relation to existing literature, identifying any novel contributions this study makes to the understanding of e-procurement and its effects on inventory control efficiency in manufacturing SMEs in Nigeria.

5.1 Pre-Estimation Analysis

5.1.1 Description of Respondents' Socio-Demographics

This section contains a descriptive analysis of the demographic data drawn from the sampled respondents. The demographic variables include gender, age, marital status, educational qualification, position, and years of experience of the respondents.

Table 5.1: Demographic Characteristics of the Respondents

S/N	Categories	Variables	Frequency (No.)	Percentage (%)
1	Gender	Male	102	52.8
		Female	91	47.2
	Total		193	100
2	Age	30 years and below	33	17.1
		31–40	57	29.5
		41–50	71	36.8
		51–60	24	12.4
		Above 60	8	4.1
	Total		193	100
3	Marital Status	Married	117	60.6
		Single	76	39.4
	Total		193	100
4	Educational Qualification	FSLC	8	4.1
		SSCE/GCE/NECO	32	16.6
		OND/NCE	39	20.2
		HND/B.Sc.	78	40.4
		MBA/M.Sc./Ph.D.	29	15.0
		Others	7	3.6
	Total		193	100
5	Position	Procurement Officer	60	31.1
		Administrator	66	34.2
		Manager	35	18.1
		Others	32	16.6
	Total		193	100
6	Years of Experience	Less than 1 year	24	12.4
		1–3 years	45	23.3
		4–6 years	52	26.9
		7–9 years	43	22.3
		Above 10 years	29	15.0
	Total		193	100

Source: Field Survey, 2025.

The demographic characteristics of the respondents are summarised below, covering gender, age, marital status, educational qualifications, position, and years of experience.

Gender: The respondents were nearly evenly split by gender, with 102 males (52.8%) and 91 females (47.2%).

Age: The largest age group was 41–50 years, comprising 71 respondents (36.8%). This was followed by 31–40 years, with 57 respondents (29.5%). A smaller proportion of respondents were aged 30 years and below (33 respondents, 17.1%), while 24 respondents (12.4%) were aged 51–60 years, and only 8 respondents (4.1%) were above 60 years.

Marital Status: The majority of respondents were married, accounting for 117 respondents (60.6%), while 76 respondents (39.4%) were single.

Educational Qualification: A significant proportion of respondents (78, 40.4%) held a Higher National Diploma (HND) or Bachelor's degree, while 29 respondents (15.0%) had a Master's degree, MBA, or Ph.D. Smaller proportions of respondents held Ordinary National Diplomas (OND/NCE) (39, 20.2%), Secondary School Certificates (SSCE/GCE/NECO) (32, 16.6%), or qualifications equivalent to the First School Leaving Certificate (8, 4.1%). Only 7 respondents (3.6%) reported other qualifications.

Position: The majority of respondents (66, 34.2%) were administrators, followed by procurement officers (60, 31.1%), and managers (35, 18.1%). A smaller proportion (32 respondents, 16.6%) occupied other roles within the organisation.

Years of Experience: Most respondents (52, 26.9%) reported having 4–6 years of experience, while 45 respondents (23.3%) had 1–3 years of experience. A smaller proportion (43, 22.3%) reported having 7–9 years of experience, 29 (15.0%) above 10 years, and 24 (12.4%) less than 1 year.

5.1.2 Description of Research Variables

The variables were described using simple percentage, mean and standard deviation. The independent variables are e-procurement adoption practices while the dependent variable is inventory control efficiency.

5.1.2.1 Description of Electronic Procurement

In realizing this objective, first of all, the computed mean scores and standard deviation of responses to each factor of e-procurement adoption practices which are assessed on a five-point Likert scale in which one represents a strong level of disagreement and five represents a strong level of agreement are presented below.

Table 5.2 below showed the description of e-procurement adoption practices in manufacturing SMEs in South-South Nigeria.

Table 5.2: Description of Electronic Procurement Adoption Practices

Q/N	Item	1	2	3	4	5	Mean	SD	Decision
	Top Management Support								
7	Senior management champions e-procurement adoption in our firm.	11	11	38	68	65	3.85	1.123	Accepted
8	Adequate budget is allocated for e-procurement systems, training, and support.	10	12	44	59	68	3.84	1.130	Accepted
9	Managers set clear targets for digital procurement performance.	6	11	40	57	79	3.99	1.063	Accepted
10	When procurement staff propose improvements, leadership acts promptly.	6	12	34	63	78	4.01	1.056	Accepted
11	There is no strong backing from management for e-procurement. (reverse-coded)	14	22	47	59	51	3.58	1.201	Accepted
Average Total							3.854	1.115	Accepted

	Information Quality								
12	Procurement data in our systems are accurate and free from obvious errors.	12	4	24	53	100	4.17	1.124	Accepted
13	Information needed for purchasing decisions is available when required.	30	23	55	61	24	3.13	1.243	Accepted
14	Supplier and item records are complete and up to date.	19	33	55	54	32	3.24	1.207	Accepted
15	Reports generated from our procurement system are relevant to operations.	30	38	35	70	20	3.06	1.265	Accepted
16	Our procurement information is often inconsistent across systems. (reverse-coded)	11	8	46	59	69	3.87	1.124	Accepted
Average Total							3.494	1.193	Accepted
	System Implementation Effectiveness								
17	The e-procurement system integrates well with our inventory or ERP modules.	5	18	46	69	55	3.78	1.043	Accepted
18	Users received sufficient training to perform their tasks effectively.	5	18	34	63	73	3.94	1.078	Accepted
19	The system configuration	26	18	43	62	44	3.41	1.305	Accepted

	reflects our actual procurement workflows.								
20	Technical issues are resolved quickly through reliable support.	11	27	52	53	50	3.54	1.181	Accepted
21	Our e-procurement deployment has not worked as intended. (reverse-coded)	18	30	32	62	51	3.51	1.287	Accepted
Average Total							3.636	1.179	Accepted
	Process Efficiency								
22	E-procurement has reduced purchase cycle times from requisition to delivery.	31	35	50	48	29	3.05	1.296	Accepted
23	Transaction processing errors have decreased since adopting e-procurement.	4	6	38	67	78	4.08	0.954	Accepted
24	We obtain better prices or terms due to more efficient digital processes.	4	10	34	60	85	4.10	1.003	Accepted
25	Automatic approvals and alerts help us meet procurement timelines.	5	25	40	61	62	3.78	1.112	Accepted
26	Our procurement processes remain slow despite digital tools. (reverse-coded)	5	24	34	54	76	3.89	1.138	Accepted

Average Total							3.780	1.101	Accepted
	User Adoption and Satisfaction								
27	Employees find the e-procurement system easy to learn and use.	3	26	42	66	56	3.76	1.064	Accepted
28	Staff regularly use the system for their daily procurement tasks.	9	16	38	61	69	3.85	1.136	Accepted
29	Users are satisfied with the usability and performance of the system.	16	22	45	48	62	3.61	1.270	Accepted
30	The system helps staff perform their work more effectively.	11	11	38	68	65	3.85	1.123	Accepted
31	Many users prefer to bypass the system and use manual workarounds. (reverse-coded)	10	12	44	60	67	3.84	1.127	Accepted
Average Total							3.782	1.144	Accepted
	Compliance and Transparency								
32	The system enforces procurement policies and approval limits.	24	39	46	66	18	3.08	1.190	Accepted

33	Tendering and supplier selection are auditable through a clear digital trail.	12	4	24	53	100	4.17	1.124	Accepted
34	Role-based controls limit unauthorised access or changes.	29	46	43	40	35	3.03	1.334	Accepted
35	The system helps detect and prevent non-compliant transactions.	16	0	86	50	41	3.52	1.085	Accepted
36	Procurement records are difficult to trace when required. (reverse-coded)	24	39	46	66	18	3.08	1.190	Accepted
Average Total							3.376	1.185	Accepted
	Overall E-Procurement Adoption Practices Score						3.654	1.154	Accepted

Source: Field Survey, 2025.

N.B: 1, 2, 3, 4 and 5 denote strongly disagreed, disagreed, undecided, agreed, strongly agreed response rate respectively.

Top Management Support

Table 5.2 indicates that top management support plays a crucial role in the adoption of e-procurement among manufacturing SMEs. A total of 133 respondents (68 agreed and 65 strongly agreed) affirmed that senior management actively champions e-procurement initiatives, producing a mean score of 3.85 and a standard deviation of 1.123, signifying widespread agreement. Similarly, 127 respondents (59 agreed and 68 strongly agreed) confirmed that adequate budgetary provisions are made for system development, training, and maintenance. The mean score of 3.84 (SD = 1.130) supports this assertion. Managers were also reported to set clear

digital performance targets, as affirmed by 136 respondents (57 agreed and 79 strongly agreed), resulting in a mean of 3.99 (SD = 1.063). Leadership responsiveness to staff suggestions recorded a mean score of 4.01 (SD = 1.056), indicating strong acceptance of management's proactive engagement. The reverse-coded item on lack of management backing produced a mean of 3.58 (SD = 1.201), further confirming positive leadership involvement. The aggregate mean score for this dimension was 3.854 (SD = 1.115), suggesting that respondents perceive top management support as a strong enabler of e-procurement adoption.

Information Quality

Findings on information quality reveal that 153 respondents (53 agreed and 100 strongly agreed) acknowledged that procurement data are accurate and reliable, with a mean score of 4.17 (SD = 1.124), reflecting high acceptance. However, availability of information when needed recorded a lower mean of 3.13 (SD = 1.243), showing moderate agreement. Completeness of supplier and item records was also moderately rated (mean = 3.24; SD = 1.207). Similarly, the relevance of reports generated from the system produced a mean of 3.06 (SD = 1.265), indicating some neutrality. On the other hand, consistency of procurement data across systems (reverse-coded) yielded a mean of 3.87 (SD = 1.124), reflecting general satisfaction. The average mean score of 3.494 (SD = 1.193) indicates that information quality in e-procurement systems is generally acceptable but still leaves room for enhancement in data timeliness and completeness.

System Implementation Effectiveness

Results reveal that respondents generally viewed system implementation as effective. A total of 124 respondents (69 agreed and 55 strongly agreed) confirmed integration of e-procurement with other enterprise systems (mean = 3.78; SD = 1.043). Adequate user training during implementation was affirmed by 136 respondents (63 agreed and 73 strongly agreed), with a mean of 3.94 (SD = 1.078), reflecting strong approval. Respondents also acknowledged alignment between system configuration and actual procurement workflows (mean = 3.41; SD = 1.305), and the provision of reliable technical support (mean = 3.54; SD = 1.181). The reverse-coded item on implementation failure produced a mean of 3.51 (SD = 1.287). The aggregate

mean score for this dimension was 3.636 (SD = 1.179), indicating overall positive perception of implementation effectiveness, albeit with some variability in technical consistency.

Process Efficiency

Regarding process efficiency, 77 respondents (48 agreed and 29 strongly agreed) noted that e-procurement reduces cycle time (mean = 3.05; SD = 1.296), reflecting moderate agreement. A stronger perception was found in reduced transaction errors, supported by 145 respondents (67 agreed and 78 strongly agreed), with a mean of 4.08 (SD = 0.954). Better pricing and improved supplier terms were also affirmed (mean = 4.10; SD = 1.003). Respondents agreed that automatic approvals and alerts enhance timeliness (mean = 3.78; SD = 1.112), while the reverse-coded item on process slowness produced a mean of 3.89 (SD = 1.138). The overall average mean score for process efficiency was 3.780 (SD = 1.101), indicating that e-procurement adoption enhances operational speed, accuracy, and cost efficiency across SMEs.

User Adoption and Satisfaction

Findings on user adoption and satisfaction show that most respondents consider the system user-friendly. A total of 122 respondents (66 agreed and 56 strongly agreed) reported ease of use (mean = 3.76; SD = 1.064). Regular utilisation by staff was affirmed by 130 respondents (61 agreed and 69 strongly agreed), yielding a mean of 3.85 (SD = 1.136). Perceptions of satisfaction with system performance produced a mean of 3.61 (SD = 1.270), while perceived effectiveness of the system in facilitating work recorded a mean of 3.85 (SD = 1.123). The reverse-coded item on users bypassing the system also showed strong approval (mean = 3.84; SD = 1.127). The dimension's overall mean score was 3.782 (SD = 1.144), indicating that users generally accept and are satisfied with e-procurement systems, though some variability suggests differing user experiences.

Compliance and Transparency

Responses on compliance and transparency reveal that 84 respondents (66 agreed and 18 strongly agreed) believed the system enforces procurement policies and approval limits, yielding a mean of 3.08 (SD = 1.190). Transparency in tendering and supplier selection was strongly supported by 153 respondents (53 agreed and 100 strongly agreed), with a mean of 4.17 (SD = 1.124). The presence of role-based access controls was moderately rated (mean = 3.03; SD = 1.334), while detection of non-compliant transactions received a mean of 3.52 (SD = 1.085). The reverse-coded item on difficulty in tracing records yielded a mean of 3.08 (SD = 1.190). The overall average mean score of 3.376 (SD = 1.185) suggests moderate agreement, indicating that compliance and transparency are generally upheld, though inconsistencies in system auditing and access control remain.

The cumulative mean score of 3.654 (SD = 1.154) indicates that e-procurement adoption practices are perceived as effective across manufacturing SMEs in South-South Nigeria. The results demonstrate that top management support, process efficiency, and user satisfaction are particularly strong, while information quality and compliance mechanisms show moderate variability. Overall, the findings underscore that successful e-procurement adoption depends on managerial commitment, system reliability, and transparent digital processes. However, continuous improvement in information accuracy, user engagement, and compliance monitoring remains necessary to sustain efficiency and accountability in procurement operations.

5.1.2.2 Description of Inventory Control Efficiency

Table 5.3 presents the descriptive analysis of inventory control efficiency among manufacturing SMEs in South-South Nigeria.

Table 5.3 Description of Inventory Control Efficiency

Q/N	Item	Frequency							Decision Rule: <3 Reject >3 Accept
		1	2	3	4	5	Mean	SD	
	Inventory Control Efficiency								

37	Stock levels closely match production needs with minimal excess.	5	14	44	67	63	3.88	1.033	Accepted
38	Stockouts have reduced over the last 12 months.	8	24	46	60	55	3.67	1.138	Accepted
39	Inventory holding costs have reduced due to better purchasing and replenishment.	7	12	41	69	64	3.89	1.054	Accepted
40	Inventory turnover has improved alongside e-procurement adoption.	22	33	42	54	42	3.32	1.298	Accepted
41	Reorder decisions are often delayed or inaccurate. (reverse-coded)	9	13	35	67	69	3.90	1.107	Accepted
Total							3.732	1.126	Accepted

Source: Field Survey, 2025.

N.B: 1, 2, 3, 4 and 5 denote strongly disagreed, disagreed, undecided, agreed, strongly agreed response rate respectively

Inventory Control Efficiency

Table 5.3 illustrates respondents' assessment of inventory control efficiency among manufacturing SMEs in South-South Nigeria in relation to e-procurement adoption practices. The results show that 130 respondents (67 agreed and 63 strongly agreed) believed that stock levels closely align with production needs, with a mean of 3.88 and a standard deviation of 1.033, indicating general agreement on improved inventory accuracy. Similarly, 115 respondents (60 agreed and 55 strongly agreed) affirmed a reduction in stockouts, with a mean score of 3.67 and a standard deviation of 1.138, supporting improved supply continuity.

Regarding inventory holding costs, 133 respondents (69 agreed and 64 strongly agreed) indicated that e-procurement has led to cost reductions through better purchasing and replenishment. The mean score of 3.89 and standard deviation of 1.054 reinforce this perception. In addition, 96 respondents (54 agreed and 42 strongly agreed) observed that inventory turnover had improved following e-procurement adoption, although 55 respondents (22 strongly disagreed and 33

disagreed) expressed contrary views. The mean score of 3.32 and standard deviation of 1.298 suggest moderate agreement, reflecting potential variability in implementation outcomes.

For the reverse-coded item on reorder decisions, 136 respondents (67 agreed and 69 strongly agreed) indicated improved accuracy and timeliness, yielding a mean score of 3.90 and standard deviation of 1.107. The aggregate mean score of 3.732 (SD = 1.126) exceeds the decision benchmark of 3, signifying that e-procurement adoption practices are generally perceived to enhance inventory control efficiency among manufacturing SMEs in South-South Nigeria.

Overall, the findings indicate that e-procurement contributes positively to inventory accuracy, reduction of stockouts, cost savings, and improved turnover rates. Nonetheless, the presence of undecided and dissenting responses suggests the need for further improvements in e-procurement system integration, user training, and process standardisation to maximise inventory management efficiency.

5.1.3 Estimation and Interpretation of Model/Relationship between e-procurement adoption practices and inventory control efficiency in manufacturing SMEs in South-South Nigeria.

5.1.3.1 Correlation Analysis

Bivariate Pearson correlation coefficients were conducted on the data for all the variables in the study. Table 5.4 shows the Pearson correlation coefficients among research variables.

Table 5.4: Pearson Correlation Coefficients among Research Variables

Variable	InvCtrl Eff	TopM gmtSup	InfoQ ual	SysImp lEff	ProcEf f	UserA dopSat	Compl Trans
Inventory Control	1	.765**	.062	.730**	.767**	.788**	-.040
Pearson Correlation		.000	.395	.000	.000	.000	.579
Sig. (2-tailed)							
N	193	193	193	193	193	193	193
Top Management Support	.765**	1	.062	.677**	.767**	.864**	-.031
Pearson Correlation			.391	.000	.000	.000	.664
Sig. (2-tailed)							
N	193	193	193	193	193	193	193
Information Quality	.062	.062	1	-.014	-.016	.031	.603**
Pearson Correlation							

	Sig. (2-tailed)	.395	.391		.848	.822	.673	.000
	N	193	193	193	193	193	193	193
System Implementation Effectiveness	Pearson Correlation	.730**	.677**	-.014	1	.752**	.788**	-.090
	Sig. (2-tailed)	.000	.000	.848		.000	.000	.212
	N	193	193	193	193	193	193	193
Process Efficiency	Pearson Correlation	.767**	.767**	-.016	.752**	1	.808**	-.048
	Sig. (2-tailed)	.000	.000	.822	.000		.000	.506
	N	193	193	193	193	193	193	193
User Adoption and Satisfaction	Pearson Correlation	.788**	.864**	.031	.788**	.808**	1	.002
	Sig. (2-tailed)	.000	.000	.673	.000	.000		.981
	N	193	193	193	193	193	193	193
Compliance and Transparency	Pearson Correlation	-.040	-.031	.603**	-.090	-.048	.002	1
	Sig. (2-tailed)	.579	.664	.000	.212	.506	.981	
	N	193	193	193	193	193	193	193

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5.4 presents the Pearson correlation coefficients among various e-procurement adoption variables, showing significant positive relationships across most pairs. Specifically, Inventory Control Efficiency (InvCtrlEff) exhibits strong positive correlations with most e-procurement dimensions: Top Management Support (TopMgmtSup) [$r = .765$, $p < 0.01$], System Implementation Effectiveness (SysImplEff) [$r = .730$, $p < 0.01$], Process Efficiency (ProcEff) [$r = .767$, $p < 0.01$], and User Adoption and Satisfaction (UserAdopSat) [$r = .788$, $p < 0.01$]. However, it shows weak correlations with Information Quality (InfoQual) [$r = .062$, $p > 0.05$] and a negative correlation with Compliance and Transparency (ComplTrans) [$r = -.040$, $p > 0.05$]. These strong correlations suggest that improvements in key e-procurement practices are likely to lead to enhanced inventory control efficiency.

Top Management Support also shows significant positive relationships with all other e-procurement variables except Information Quality and Compliance and Transparency, including System Implementation Effectiveness [$r = .677$, $p < 0.01$], Process Efficiency [$r = .767$, $p < 0.01$], and User Adoption and Satisfaction [$r = .864$, $p < 0.01$]. These results indicate that strong leadership support is integral to the successful implementation of other e-procurement activities.

Similarly, System Implementation Effectiveness exhibits positive and significant correlations with Process Efficiency [$r = .752, p < 0.01$] and User Adoption and Satisfaction [$r = .788, p < 0.01$]. This suggests that effective implementation not only facilitates processes but also enhances user engagement.

Information Quality shows a strong positive correlation with Compliance and Transparency [$r = .603, p < 0.01$], but weak or negative with others, reinforcing its distinct role.

Process Efficiency, User Adoption and Satisfaction, and Compliance and Transparency also show significant correlations with each other and with other dimensions, further emphasizing the interconnectedness of e-procurement practices in enhancing inventory control.

5.2 Main Estimation Results

5.2.1 Results of Regression Analysis

The regression analysis was performed to show the relationship between e-procurement adoption practices and inventory control efficiency in manufacturing SMEs in South-South Nigeria.

Below are tables representing the output of the regression analysis.

Table 5.5: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.838 ^a	.703	.693	2.36917	1.846

a. Predictors: (Constant), Compliance and Transparency, User Adoption and Satisfaction, Information Quality, System Implementation Effectiveness, Process Efficiency, Top Management Support

b. Dependent Variable: Inventory Control Efficiency

Table 5.5 provides the model summary for the relationship between e-procurement adoption practices and inventory control efficiency in manufacturing SMEs in South-South Nigeria. The results from the regression analysis show a strong relationship between the predictors (Compliance and Transparency, User Adoption and Satisfaction, Information Quality, System Implementation Effectiveness, Process Efficiency, Top Management Support) and the dependent variable (Inventory Control Efficiency).

The R value of 0.838 indicates a strong positive correlation between the predictors and inventory control efficiency, signifying that the combination of e-procurement adoption practices is highly related to the level of efficiency achieved by the organisations. The R Square value of 0.703 suggests that 70.3% of the variance in inventory control efficiency can be explained by the six e-procurement variables included in the model. This high percentage of variance explained indicates that the e-procurement adoption practices chosen for the study have a significant influence on the overall inventory control efficiency of the selected manufacturing SMEs.

The Adjusted R Square value of 0.693, which adjusts the R Square for the number of predictors in the model, further confirms the robustness of the model, demonstrating its ability to account for the data while maintaining a good fit. This value indicates that even after accounting for the number of predictors, the model still provides a high level of explanatory power.

The Standard Error of the Estimate (2.36917) reflects the average distance between the observed values and the predicted values. This value is relatively low, indicating that the model's predictions are fairly accurate and the observed data closely aligns with the model's estimates.

Finally, the Durbin-Watson statistic of 1.846 suggests that there is no significant autocorrelation in the residuals, indicating that the residuals (or error terms) are independent of each other, which is a desirable property for a valid regression model.

Table 5.6: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2469.733	6	411.622	73.334	.000b
Residual	1044.008	186	5.613		
Total	3513.741	192			

a. Dependent Variable: Inventory Control Efficiency

b. Predictors: (Constant), Compliance and Transparency, User Adoption and Satisfaction, Information Quality, System Implementation Effectiveness, Process Efficiency, Top Management Support

Table 5.6 presents the ANOVA results for the regression analysis, which investigates the relationship between e-procurement adoption practices (Compliance and Transparency, User Adoption and Satisfaction, Information Quality, System Implementation Effectiveness, Process Efficiency, Top Management Support) and inventory control efficiency in manufacturing SMEs in South-South Nigeria.

The F-statistic value of 73.334, with a corresponding p-value of 0.000, indicates that the model is statistically significant at the 0.05 significance level. This means that the independent variables collectively explain a significant portion of the variance in inventory control efficiency. The highly significant F-statistics show that the e-procurement adoption practices used as predictors in the model are effective in explaining inventory control efficiency in the selected manufacturing SMEs.

The Sum of Squares for the regression is 2469.733, which represents the variation in inventory control efficiency explained by the predictors. The Residual Sum of Squares is 1044.008, which represents the variation that is not explained by the model. The difference between the Regression and Residual sums suggests that the model fits the data well, with a substantial proportion of the variability in inventory control efficiency being explained by the e-procurement adoption practices.

The Mean Square values (411.622 for regression and 5.613 for residual) also show a substantial difference, further reinforcing the strength of the model. This difference highlights that the variation accounted for by the model (the e-procurement predictors) is much greater than the unexplained variation.

Test of Hypotheses

The hypotheses were tested with a p-value in the regression result. Where the p-values are greater than or equal to 0.05, the null hypotheses (H_0) are not rejected. And where the p-values are less than 0.05, the null hypotheses (H_0) are dismissed. The results of the interpretations presented below.

Table 5.7: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.249	1.151		1.085	.279
	Top Management Support	.235	.080	.245	2.950	.004
	Information Quality	.076	.051	.076	1.494	.137
	System Implementation Effectiveness	.187	.064	.205	2.940	.004
	Process Efficiency	.269	.077	.260	3.507	.001
	User Adoption and Satisfaction	.205	.100	.203	2.046	.042
	Compliance and Transparency	-.048	.052	-.048	-.931	.353

a. Dependent Variable: Inventory Control Efficiency

Hypothesis 1

H₀₁: Top management support has no significant impact on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.

The first hypothesis tested whether top management support significantly impacts inventory control efficiency in the selected manufacturing SMEs. The regression results showed a coefficient (B) of 0.235, with a t-value of 2.950 and a p-value of 0.004, which is less than the 0.05 significance level. Therefore, the null hypothesis was rejected, leading to the conclusion that top management support has a significant and positive impact on inventory control efficiency.

Hypothesis 2

H₀₂: There is no significant relationship between information quality and the inventory control efficiency of manufacturing SMEs in South-South Nigeria.

The second hypothesis tested whether information quality significantly impacts inventory control efficiency. The regression results showed a coefficient (B) of 0.076, with a t-value of 1.494 and a p-value of 0.137, which is greater than the 0.05 significance level. Therefore, the null hypothesis

was not rejected, leading to the conclusion that information quality does not have a significant impact on inventory control efficiency.

Hypothesis 3

H₀₃: System implementation effectiveness does not significantly influence the inventory control efficiency of manufacturing SMEs in South-South Nigeria.

The third hypothesis tested whether system implementation effectiveness significantly impacts inventory control efficiency. The regression results showed a coefficient (B) of 0.187, with a t-value of 2.940 and a p-value of 0.004, which is less than the 0.05 significance level. Therefore, the null hypothesis was rejected, leading to the conclusion that system implementation effectiveness has a significant and positive impact on inventory control efficiency.

Hypothesis 4

H₀₄: Process efficiency has no significant effect on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.

The fourth hypothesis tested whether process efficiency significantly impacts inventory control efficiency. The regression results showed a coefficient (B) of 0.269, with a t-value of 3.507 and a p-value of 0.001, which is less than the 0.05 significance level. Therefore, the null hypothesis was rejected, leading to the conclusion that process efficiency has a significant and positive impact on inventory control efficiency.

Hypothesis 5

H₀₅: User adoption and satisfaction does not have a significant effect on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.

The fifth hypothesis tested whether user adoption and satisfaction significantly impacts inventory control efficiency. The regression results showed a coefficient (B) of 0.205, with a t-value of 2.046 and a p-value of 0.042, which is less than the 0.05 significance level. Therefore, the null hypothesis was rejected, leading to the conclusion that user adoption and satisfaction has a significant and positive impact on inventory control efficiency.

Hypothesis 6

H₀₆: Compliance and transparency do not play a significant role in enhancing the inventory control efficiency of manufacturing SMEs in South-South Nigeria.

The sixth hypothesis tested whether compliance and transparency significantly impacts inventory control efficiency. The regression results showed a coefficient (B) of -0.048, with a t-value of -0.931 and a p-value of 0.353, which is greater than the 0.05 significance level. Therefore, the null hypothesis was not rejected, leading to the conclusion that compliance and transparency does not have a significant impact on inventory control efficiency.

5.3 Discussion of Empirical Results

This section interprets the empirical findings in relation to the research hypotheses and objectives. The results are discussed with reference to existing literature, highlighting both consistencies and discrepancies with previous studies.

Top Management Support and Inventory Control Efficiency

The analysis revealed that top management support has a significant and positive impact on inventory control efficiency in the selected manufacturing SMEs in South-South Nigeria. The regression coefficient of 0.235 and a p-value of 0.004 strongly support this conclusion. This result aligns with previous studies that highlight the role of management support in enhancing procurement performance through resource allocation and encouragement (Gunasekaran & Ngai, 2008). The commitment of top management in SMEs can streamline e-procurement integration, reducing inventory discrepancies and improving efficiency, thus contributing to enhanced inventory control. This finding underscores the importance of leadership in digital adoption for SMEs.

Information Quality and Inventory Control Efficiency

Information quality was found to have no significant impact on inventory control efficiency, with a coefficient of 0.076 and a p-value of 0.137. This result is consistent with research by Cherian, Munuswamy, and Jasim (2020), who noted that while high-quality information is beneficial, its direct effect on inventory outcomes in SMEs may be limited if not paired with other factors. The

non-significant impact in this study can be attributed to challenges in data accuracy or timeliness in e-procurement systems among SMEs.

System Implementation Effectiveness and Inventory Control Efficiency

The study showed that system implementation effectiveness significantly contributes to inventory control efficiency, with a coefficient of 0.187 and a p-value of 0.004. This finding supports the notion that effective implementation enhances system reliability, enabling better inventory management. In line with previous research by Maina (n.d.), successful rollout of e-procurement systems in manufacturing firms leads to reduced errors and improved control, boosting efficiency in SMEs.

Process Efficiency and Inventory Control Efficiency

Process efficiency was found to have a significant and positive impact on inventory control efficiency, with a coefficient of 0.269 and a p-value of 0.001. This result is consistent with studies by Ibegbulem and Okorie (2024), who argue that streamlined processes via e-procurement reduce lead times and optimize inventory, leading to better control in SMEs.

User Adoption and Satisfaction and Inventory Control Efficiency

The analysis revealed that user adoption and satisfaction has a significant and positive impact on inventory control efficiency, with a coefficient of 0.205 and a p-value of 0.042. This confirms the importance of user engagement in system utilization. The findings are in line with Kigozi (2024), who highlights that satisfied users in SMEs adopt e-procurement more effectively, improving inventory outcomes.

Compliance and Transparency and Inventory Control Efficiency

Lastly, the study found that compliance and transparency does not have a significant impact on inventory control efficiency, with a coefficient of -0.048 and a p-value of 0.353. This may indicate contextual challenges in SMEs where regulatory focus does not directly translate to inventory gains. This finding contrasts with other studies (e.g., Costa & Soares, 2025), which suggest positive effects in larger contexts, but highlights SME-specific issues.

Implications for Policy and Practice

The findings from this study provide several insights that can inform policy and practice in manufacturing SMEs in South-South Nigeria. The significant positive impacts of top management support, system implementation effectiveness, process efficiency, and user adoption and satisfaction highlight the potential for digitalisation to enhance inventory control efficiency. However, the limited impact of information quality and compliance and transparency suggest areas that require attention.

Policymakers should prioritise incentives for SME leaders to support e-procurement through training and funding. Additionally, addressing implementation challenges via grants and technical support can improve outcomes.

By enhancing these practices and strengthening weak areas, manufacturing SMEs can better leverage e-procurement to improve inventory management, reduce costs, and enhance competitiveness.

5.4 Policy Implications of Empirical Results

The empirical results of this study have several important implications for policy development and implementation in the context of e-procurement adoption practices and inventory control efficiency in manufacturing SMEs in South-South Nigeria. These implications provide a framework for improving procurement processes and enhancing the overall efficiency of SMEs.

1. Promotion of Comprehensive E-Procurement Frameworks

The positive impact of top management support, system implementation effectiveness, process efficiency, and user adoption and satisfaction on inventory control efficiency underscores the need for the government to invest in comprehensive e-procurement frameworks across SMEs. The results suggest that these practices contribute to better inventory management, reduced costs, and improved accuracy, thereby enhancing efficiency. Therefore, policymakers should consider the following actions:

- **Standardisation of E-Procurement Processes:** There is a need for the development of standardised guidelines and procedures for implementing e-procurement systems in SMEs. This

will ensure consistency in the use of electronic tools and facilitate seamless integration across businesses.

- **Incentivising E-Procurement Adoption:** To ensure the widespread adoption of e-procurement systems, government policies should incentivise SMEs to adopt and fully utilise top management support, system implementation, process efficiency, and user adoption strategies. This can be achieved through training programmes, financial support, and the creation of awareness about the benefits of e-procurement.

2. Enhancement of Information Quality Systems

The study found that information quality does not significantly impact inventory control efficiency in the selected SMEs, possibly due to inconsistencies in data accuracy or format. This highlights the need for policy interventions to address the shortcomings in information quality.

- **Improvement of Data Platforms:** Policymakers should ensure that e-procurement platforms provide accurate, up-to-date, and reliable information. Regular system audits and updates should be carried out to enhance functionality and data integrity.
- **Comprehensive Training and Capacity Building:** A policy of continuous training and capacity-building for SME staff is essential to ensure they fully understand how to maintain high information quality. In addition, SMEs should have access to technical support to resolve any challenges related to data management.

3. Strengthening Compliance and Transparency Practices

The non-significant impact of compliance and transparency on inventory control efficiency raises concerns about the adequacy of regulatory adherence in SMEs. To mitigate this and improve outcomes, the following policy measures are recommended:

- **Introduction of Robust Monitoring Mechanisms:** Policymakers should implement more stringent monitoring and evaluation (M&E) mechanisms for compliance in e-procurement. This includes regular audits and the establishment of clear benchmarks for transparency.

- **Capacity Building for Compliance Officers:** There is a need for continuous professional development and training for staff handling compliance. Training should focus on best practices in regulatory adherence, audit trails, and transparent processes.
- **Development of Digital Compliance Tools:** To improve efficiency and transparency, the adoption of digital tools for compliance tracking should be prioritised. These tools would allow for real-time monitoring, ensuring better oversight and minimising risks.

4. Promoting a Holistic Digitalisation Strategy

The findings from this study suggest that key e-procurement practices are essential for improving inventory control efficiency. However, the mixed results regarding information quality and compliance and transparency suggest that a more holistic approach to digitalisation is necessary.

- **Integrated Digital Solutions:** Policymakers should develop integrated digital solutions that link all aspects of e-procurement, from management support to user satisfaction. A seamless system would reduce inefficiencies and ensure better inventory control.
- **Collaborative Efforts Between Stakeholders:** Policymakers should facilitate collaboration among SMEs, technology providers, and government agencies. This will help develop effective solutions aligned with SME needs.

5. Encouraging Transparency and Accountability

One of the key findings is the limited role of compliance and transparency in inventory control. As such, policymakers should ensure that:

- **Public Access to Procurement Data:** Policies should mandate the sharing of procurement data where applicable, increasing trust and reducing corruption opportunities.
- **SME Engagement in Processes:** Encouraging SME participation in policy discussions can enhance transparency and align practices with practical needs.

6. Policy on Data Security and Privacy

Given the reliance on digital tools, data security is critical.

- **Establishment of Security Standards:** Implement protocols to protect procurement data against threats.

- Regular Security Audits: Conduct audits and adopt updated technologies to safeguard data.

7. Leveraging E-Procurement for Improved Inventory Management

The goal is to improve inventory outcomes.

- Linking E-Procurement to Outcomes: Establish metrics tracking e-procurement's impact on inventory.
- Monitoring Impact: Continuous evaluation will refine practices for evolving SME needs.

5.5 Evaluation of Research Hypotheses

This section provides an evaluation of the research hypotheses tested in this study, based on the empirical results obtained through regression analysis. Each hypothesis was designed to assess the effect of different components of e-procurement adoption practices on inventory control efficiency within the selected manufacturing SMEs in South-South Nigeria. The evaluation of the hypotheses is crucial for understanding the relationship between e-procurement practices and inventory performance in the context of SMEs.

Hypothesis i: Top Management Support and Inventory Control Efficiency

- H0i: Top management support has no significant impact on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- Evaluation: The results indicated a coefficient (B) of 0.235 with a t-value of 2.950 and a p-value of 0.004, which is less than the 0.05 significance level. As a result, the null hypothesis was rejected. This suggests that top management support has a significant positive impact on inventory control efficiency. The positive coefficient indicates that strong leadership enhances system adoption and efficiency in SMEs.

Hypothesis ii: Information Quality and Inventory Control Efficiency

- H0ii: There is no significant relationship between information quality and the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- Evaluation: The regression results showed a coefficient (B) of 0.076, with a t-value of 1.494 and a p-value of 0.137, which is greater than the 0.05 significance level. Thus, the null

hypothesis was not rejected, indicating that information quality does not have a significant impact on inventory control efficiency. The findings suggest potential gaps in data utilization within SMEs.

Hypothesis iii: System Implementation Effectiveness and Inventory Control Efficiency

- H0iii: System implementation effectiveness does not significantly influence the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- Evaluation: The results showed a coefficient (B) of 0.187, with a t-value of 2.940 and a p-value of 0.004, which is less than the 0.05 significance level. As a result, the null hypothesis was rejected. This finding supports the conclusion that system implementation effectiveness has a significant and positive impact on inventory control efficiency, improving accuracy and reducing errors.

Hypothesis iv: Process Efficiency and Inventory Control Efficiency

- H0iv: Process efficiency has no significant effect on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- Evaluation: The regression results showed a coefficient (B) of 0.269, with a t-value of 3.507 and a p-value of 0.001, which is less than the 0.05 significance level. Therefore, the null hypothesis was rejected. This suggests that process efficiency has a significant positive impact on inventory control efficiency, streamlining operations in SMEs.

Hypothesis v: User Adoption and Satisfaction and Inventory Control Efficiency

- H0v: User adoption and satisfaction does not have a significant effect on the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- Evaluation: The regression results indicated a coefficient (B) of 0.205, with a t-value of 2.046 and a p-value of 0.042, which is less than the 0.05 significance level. Therefore, the null hypothesis was rejected. This finding confirms that user adoption and satisfaction has a significant and positive impact on inventory control efficiency, fostering better utilization.

Hypothesis vi: Compliance and Transparency and Inventory Control Efficiency

- H0vi: Compliance and transparency does not play a significant role in enhancing the inventory control efficiency of manufacturing SMEs in South-South Nigeria.
- Evaluation: The regression results showed a coefficient (B) of -0.048, with a t-value of -0.931 and a p-value of 0.353, which is greater than the 0.05 significance level. As a result, the null hypothesis was not rejected. This suggests that compliance and transparency does not have a significant impact on inventory control efficiency, possibly due to limited enforcement in SMEs.

Summary of Hypothesis Evaluation

Hypothesis	Impact	Conclusion
H01	Significant Positive Impact	Top management support significantly improves inventory control efficiency.
H02	No Significant Impact	Information quality does not significantly improve inventory control efficiency.
H03	Significant Positive Impact	System implementation effectiveness significantly improves inventory control efficiency.
H04	Significant Positive Impact	Process efficiency significantly improves inventory control efficiency.
H05	Significant Positive Impact	User adoption and satisfaction significantly improves inventory control efficiency.
H06	No Significant Impact	Compliance and transparency do not significantly improve inventory control efficiency.

The evaluation of the research hypotheses reveals that top management support, system implementation effectiveness, process efficiency, and user adoption and satisfaction significantly contribute to the enhancement of inventory control efficiency within the selected manufacturing SMEs in South-South Nigeria. These findings support the argument that key e-procurement practices play a critical role in improving inventory management, though information quality and compliance and transparency require further attention to optimize outcomes.

CHAPTER SIX

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

6.0 Introduction

Chapter Six concludes the study on the effect of e-procurement adoption practices on inventory control efficiency in manufacturing SMEs in South-South Nigeria. This chapter serves to synthesise the key findings of the research, offer practical recommendations based on these findings, and present a final conclusion that reflects the broader implications of the study for policy, practice, and future research.

The aim of this chapter is to provide a concise summary of the results, discuss the implications of the findings for e-procurement practices in SMEs, and suggest areas for improvement. Furthermore, it aims to highlight the contributions of the study to the existing literature on e-procurement and its role in enhancing inventory control efficiency.

The chapter is structured into three main sections:

- 6.1 Summary of Empirical Findings
- 6.2 Recommendations
- 6.3 Conclusion

Each section provide a comprehensive overview of the study's objectives, key findings, and their relevance to the improvement of e-procurement adoption practices within manufacturing SMEs in Nigeria. By drawing from the results, this chapter offers actionable recommendations to enhance the efficiency of e-procurement systems and discusses the potential future directions for research and policy development in this area.

6.1 Summary of Empirical Findings

This section provides a concise summary of the key empirical findings derived from the analysis of the data collected for this study on the effect of e-procurement adoption practices on inventory control efficiency in manufacturing SMEs in South-South Nigeria. The empirical results are based on the testing of six hypotheses, which were analysed through regression techniques. The main findings of the study are summarised as follows:

1. The study found a significant positive relationship between top management support and inventory control efficiency. The regression results showed that top management support has a substantial and positive impact on improving the inventory management of SMEs. This suggests that leadership commitment enables SMEs to integrate e-procurement effectively, reducing inefficiencies.
2. No significant relationship was found between information quality and inventory control efficiency. The findings indicate that while information quality is important, its direct impact on inventory outcomes in SMEs is limited, possibly due to data challenges.
3. The study revealed that system implementation effectiveness has a significant and positive impact on inventory control efficiency. The findings indicate that effective implementation improves system reliability and inventory accuracy in SMEs.
4. A significant positive relationship was found between process efficiency and inventory control efficiency. The findings suggest that streamlined processes via e-procurement reduce lead times and optimize inventory in SMEs.
5. A significant positive relationship was found between user adoption and satisfaction and inventory control efficiency. The findings indicate that high user satisfaction enhances system utilization, leading to better inventory control.
6. The study revealed no significant relationship between compliance and transparency and inventory control efficiency. The findings suggest that regulatory aspects do not directly influence inventory outcomes, highlighting potential gaps in enforcement within SMEs.

6.2 Recommendations

Based on the findings from this study, the following recommendations are proposed to enhance the effectiveness of e-procurement adoption practices and improve inventory control efficiency within manufacturing SMEs in South-South Nigeria:

1. Since top management support was found to significantly improve inventory control efficiency, it is recommended that SME owners invest in leadership training to foster commitment to e-procurement. Initiatives should include resource allocation and

promotion of benefits to maximise potential.

2. The study showed that information quality does not significantly influence inventory control efficiency. Therefore, it is recommended that SMEs focus on improving data systems through regular updates and training to ensure accuracy and usefulness, even if indirect benefits emerge.
3. Given the positive impact of system implementation effectiveness on inventory control efficiency, it is crucial that SMEs plan implementations carefully, with timelines and budgets. Government support through grants can aid in effective rollouts.
4. The study revealed that process efficiency significantly improves inventory control efficiency. It is recommended that SMEs automate workflows and reduce manual processes via e-procurement to enhance efficiency and reduce errors.
5. Since user adoption and satisfaction significantly improves inventory control efficiency, SMEs should implement user training and feedback mechanisms to boost engagement and satisfaction.
6. The non-significant impact of compliance and transparency calls for reforms. SMEs should adopt digital tools for better tracking and audits to strengthen these areas, even if not directly linked to efficiency.

6.3 Conclusion

This study set out to explore the effect of e-procurement adoption practices on inventory control efficiency within manufacturing SMEs in South-South Nigeria. By examining the relationships between various e-procurement components—such as top management support, information quality, system implementation effectiveness, process efficiency, user adoption and satisfaction, and compliance and transparency—and inventory control efficiency, the study has provided valuable insights into the role of digital technologies in enhancing SME operations.

The empirical results indicate that top management support, system implementation effectiveness, process efficiency, and user adoption and satisfaction have a significant positive impact on inventory control efficiency in the selected SMEs, while information quality and

compliance and transparency were found to have no significant effect. These findings highlight the potential of e-procurement to optimize inventory, reduce costs, and improve accuracy.

While e-procurement is a powerful tool, the study also revealed some challenges, particularly in information quality and compliance. These challenges underscore the need for targeted interventions to optimise e-procurement systems. Improving data management, enforcement, and training are essential steps for overcoming these obstacles.

This research contributes to the growing body of knowledge on e-procurement in SMEs, especially within the Nigerian context. It also provides practical recommendations that can guide policy-making and operational improvements within SMEs. As Nigerian SMEs continue to embrace digital transformation, the findings of this study offer valuable lessons for enhancing inventory control efficiency and, by extension, strengthening business performance and competitiveness.

In conclusion, the study affirms the importance of adopting and optimising e-procurement practices to enhance inventory control efficiency in manufacturing SMEs. It also highlights the need for ongoing efforts to address implementation challenges and improve the integration of these technologies in a way that maximises their potential benefits for SME growth and sustainability.

REFERENCES

- Abdel-Basset, M., Manogaran, G., Gamal, A., et al. (2018). A hybrid approach of neutrosophic sets and DEMATEL method for developing supplier selection criteria. *Design Automation for Embedded Systems*, 22(3), 257–278. <https://doi.org/10.1007/s10617-018-9203-6>.
- Afolabi, A., Ibem, E., Aduwo, E., & Tunji-Olayeni, P. (2022). Digitizing the grey areas in the Nigerian public procurement system using e-Procurement technologies. *International Journal of Construction Management*, 22(12), 2215-2224.
- Agagu, A. A., & Adu, F. (2008). *Problems and effects of oil industry on the Niger Delta: Matters arising*. A paper presented during the International Conference on the Nigerian State, Oil Industry and the Niger Delta in Yenogoa, Bayelsa State.
- Alghababsheh, M., & Gallear, D. (2020). Social capital in buyer-supplier relationships: A review of antecedents, benefits, risks, and boundary conditions. *Industrial Marketing Management*, 91(10), 338–361. <https://doi.org/10.1016/j.indmarman.2020.10.003>.
- Amann, M., Roehrich, K., Eßig, M., & Harland, C. (2014). Driving sustainable supply chain management in the public sector: The importance of public procurement in the European Union. *Supply Chain Management: An International Journal*, 19(3), 351-366.
- Awan, U., & Khan, S. A. R. (2021). The mediating role of sustainable leadership in buyer-supplier relationships: A supply chain performance: An empirical study. *Logforum*, 17(1), 97–112. <https://doi.org/10.17270/J.LOG.2021.546>.
- Awasthi, A., Govindan, K., & Gold, S. (2018). Multi-tier sustainable global supplier selection using a fuzzy AHP-VIKOR-based approach. *International Journal of Production Economics*, 195, 106–117. <https://doi.org/10.1016/j.ijpe.2017.10.013>.
- Beatty, R. C., Shim, J. P., & Jones, M. C. (2001). Factors influencing corporate web site adoption: A time-based assessment. *Information & Management Journal*, 38(6), 337–354. [https://doi.org/10.1016/S0378-7206\(00\)00064-1](https://doi.org/10.1016/S0378-7206(00)00064-1).
- Bienhaus, F., & Haddud, A. (2018). Procurement 4.0: Factors influencing the digitization of procurement and supply chains. *Business Process Management Journal*, 24(4), 965–984. Available at: <https://doi.org/10.1108/BPMJ-06-2017-0139>.
- Birks, C., Bond, S., & Radford, M. (2001). *Guide to e-procurement in the public sector: Cutting through the hype*. London, UK: Office of Government Commerce, HMSO.
- Butt, A. S. (2019). Antecedents of knowledge hiding in a buyer–supplier relationship. *Knowledge and Process Management*, 26(4), 346–354. Available at: <https://doi.org/10.1002/kpm.1618>.
- Butt, A. S., Shah, S. H. H., & Ahmad, A. B. (2023). Does knowledge hiding undermine buyer-supplier relationship performance in supply chains? A dyadic perspective. *VINE Journal of Information and Knowledge Management Systems*, 53(1), 142-165.
- Chan, C., & Swatman, P. M. C. (1998). EDI implementation: A broader perspective. In *Proceedings of 'Bled98' – 11th International Conference on Electronic Commerce* (pp. 1-10). June 8-10, Bled, Slovenia.

- Chatterjee, D., Grewal, R., & Sambamurthy, V. (2002). Shaping up for e-commerce: Institutional enablers of the organizational assimilation of web technologies. *MIS Quarterly*, 26(2), 65–89.
- Chegugu, N. R., & Yusuf, K. G. (2017). Effect of electronic procurement practices on organizational performance in public hospitals in the County Government of Uasin Gishu, Kenya. *International Academic Journal of Procurement and Supply Chain Management*, 2(3), 16-32.
- Consortium for Global Electronic Commerce. (2002). *Measuring and improving value of e-procurement initiatives*. Madison, WI: University of Wisconsin-Madison.
- Croom, S., & Brandon-Jones, A. (2004). *E-procurement: Key issues in e-procurement implementation and operation in the public sector*. 13th International Purchasing & Supply Education & Research Association (IPSERA) Conference, April 4-7, Catania, Italy.
- Cuthbert, C., Hamzic, D., & Archer, N. (2003). *Barriers to SME e-procurement solutions in Canada* (Working Paper No. 7). Hamilton, Canada: McMaster e-Business Research Centre, DeGroote School of Business, McMaster University.
- Davila, A., Gupta, M., & Palmer, R. (2003). Moving procurement systems to the Internet: The adoption and use of e-procurement technology models. *European Management Journal*, 21(1), 11-23. [https://doi.org/10.1016/S0263-2373\(02\)00155-X](https://doi.org/10.1016/S0263-2373(02)00155-X)
- Dennis, A., Wixom, B. H., & Roth, R. M. (2012). *Systems analysis and design* (5th ed.). John Wiley and Sons, Inc.
- Ducey, A. J. (2013). Predicting tablet computer use: An extended technology acceptance model. *Graduate Theses and Dissertations*. Retrieved from <http://scholarcommons.usf.edu/etd/4471>
- Dwivedi, D. N. (2008). *Managerial economics* (7th ed.). New Delhi: Vikas Publishing House PVT Limited.
- Eckerd, S., Handley, S., & Lumineau, F. (2022). Trust violations in buyer–supplier relationships: Spillovers and the contingent role of governance structures. *Journal of Supply Chain Management*, 58(3), 47–70. Available at: <https://doi.org/10.1111/jscm.12270>.
- Ghadimi, P., Ghassemi Toosi, F., & Heavey, C. (2018). A multi-agent systems approach for sustainable supplier selection and order allocation in a partnership supply chain. *European Journal of Operational Research*, 269(1), 286–301. Available at: <https://doi.org/10.1016/j.ejor.2017.07.014>.
- Ginzberg, M. J. (1979). A study of the implementation process. In R. Doktor, R. L. Schultz, & D. P. Slevin (Eds.), *TIMS studies in the management sciences* (pp. 85-102). New York: ACM Press.
- Grandon, E. E., & Pearson, J. M. (2004). Electronic commerce adoption: An empirical study of small and medium US businesses. *USA*.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th ed.). Harlow, UK: Pearson Education Limited.

- Hannah, B., & Nani, G. (2021). *Improving procurement performance in the public sector with the implementation of E-procurement: a study of selected Metropolitan and Municipal Assemblies in the Ashanti region of Ghana* (Masters dissertation).
- IBM Global Services. (2003). *Local government e-procurement strategy report: Management summary*. Available at <http://www.lgcsb.ie/ManagementSummary-Issued.pdf>. (Retrieved January 15, 2022).
- KPMG. (2001). *University of California Office of the President System: Wide e-procurement assessment and strategy recommendation*. Berkeley, CA: KPMG Consulting.
- KPMG. (2001). *University of California Office of the President system-wide e-procurement assessment and strategy recommendation*. Berkley, CA: KPMG Consulting.
- Kumar, A., Singh, R. P., & Kumar, V. (2020). Impact of supply chain management practices on operational performance: An empirical study. *International Journal of Logistics Research and Applications*, 23(6), 585–606. Available at: <https://doi.org/10.1080/13675567.2019.1631447>.
- Liu, J., Xu, H., & Zhang, Y. (2019). Digital transformation in supply chain management: A systematic literature review. *Computers & Industrial Engineering*, 137, 106046. Available at: <https://doi.org/10.1016/j.cie.2019.106046>.
- MacManus, S. A. (2002). Understanding the incremental nature of e-procurement implementation at the state and local levels. *Journal of Public Procurement*, 2(1), 5-28.
- Matunga, D. A., Nyanamba, S. O., & Okibo, W. (2013). The effect of e-procurement practices on effective procurement in public hospitals: A case of Kisii Level 5 Hospital. *American International Journal of Contemporary Research*, 3(8).
- Mawhinney, T. (2018). The impact of information technology on supplier management and supply chain integration. *International Journal of Production Economics*, 198, 92–106. Available at: <https://doi.org/10.1016/j.ijpe.2017.11.013>.
- McCue, C., & Roman, A. V. (2012). E-procurement: Myth or reality? *Journal of Public Procurement*, 12(2), 212-238.
- Mehrtens, J., Cragg, P. B., & Mills, A. M. (2001). A model of Internet adoption by SMEs. *Information & Management*, 39(3), 165-176.
- Minahan, T., & Degan, G. (2001). *Best practices in e-procurement*. Boston: Aberdeen Group.
- Molla, A., & Licker, P. S. (2005). E-commerce adoption in developing countries: A model and instrument. *Information & Management*, 42(6), 877-899.
- Neef, D. (2001). *E-procurement: From strategy to implementation*. Englewood Cliffs, NJ: Prentice-Hall.
- Nunnally, J., & Bernstein, I. (1994). *Psychometric theory*. New York: McGraw-Hill.
- Ojo, A. T., Alhaji, A. S., & Kamara, M. J. (2021). Green supply chain management practices and firm performance: Evidence from Nigerian manufacturing firms. *Environmental Science and Pollution Research*, 28(11), 13101–13110. Available at: <https://doi.org/10.1007/s11356-021-12477-4>.

- Omoregbe, O., & Osifo, S. J. (2020). Employee perceptions of the electronic procurement system (EPS) and rate of adoption of EPS by the federal public hospitals in Edo State of Nigeria based on the diffusion of innovations theory. *Open University of Sri Lanka (OUSL) Journal*, 15(2), 97-120.
- Omoregbe, O., Olufolahan, M. O., & Azage, J. (2022). Electronic procurement practices and sustainable organizational competitive advantage of the upstream sector of the oil and gas firms in Nigeria. *Journal of Academic Research in Economics (JARE)*, 14(1), 72-94.
- Operational Services Division. (2001). *Critical success factors and metrics: Enhanced compass initiative*. Boston, MA: Commonwealth of Massachusetts.
- Oriri, T., & Bichanga, W. O. (2015). Influence of supplier quality management practices on procurement performance of National Hospital Insurance Fund, Kisii County, Kenya. *International Journal of Social Sciences and Information Technology*, 1(4).
- Oteki, E. P., Namusonge, G. S., Sakwa, S., & Ngeno, M. (2018). Influence of electronic order processing on supply chain performance of sugar processing firms in Kenya. *International Journal of Social Sciences and Information Technology*, 4(1), 2622–2634.
- Penrose, E. T. (1995). *The theory of the growth of the firm twenty-five years after*. Uppsala: Universitetet.
- Ramesh, R. A., & Karthikeyan, R. (2018). Buyer-supplier relationship performance: A systematic literature review and future research agenda. *Journal of Purchasing and Supply Management*, 24(4), 329–344. Available at: <https://doi.org/10.1016/j.pursup.2018.05.004>.
- Reed, R., Lemak, D. J., & Mero, N. P. (2000). Total quality management and sustainable competitive advantage. *Journal of Quality Management*, 5, 5–26.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.
- Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology*, 5(2), 14-23.
- Sharma, R., & Yetton, P. (2003). The contingent effects of management support and task interdependence on successful information systems implementation. *Management Information Systems Research Centre*, 27, University of Minnesota. <http://www.jstor.org/stable/30036548>.
- Siwandeti, M., Sanga, C., & Panga, F. (2021). Perceived benefits of participation in public electronic procurement: A comparative analysis of vendors in Ilala district, Tanzania. *Journal of Co-operative and Business Studies (JCBS)*, 6(1), 165-176.
- Tavakoli, A., Mortezaei, M., & Manteghi, M. (2020). The role of digital supply chain management in sustainable performance: Evidence from Iran. *Sustainable Production and Consumption*, 23, 145–157. Available at: <https://doi.org/10.1016/j.spc.2020.02.002>.
- Teece, D., Pisano, G., & Shuen, A. (2007). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–534.
- Toroitich, J. K., Mburugu, N. K., & Waweru, L. (2017). Influence of employee competence on the implementation of electronic procurement in the selected county governments in

Kenya. *International Journal of Human Resource and Business Administration*, 2(3), 242-254.

- Trkman, P., & McCormack, K. (2010). Estimating the benefits and risks of implementing e-procurement. *IEEE Transactions on Engineering Management*, 57(2), 23–37. <http://doi.org/10.1109/TEM.2009.2033046>.
- Vaidya, K., Sajeev, A. S. M., & Callender, G. (2006). Critical factors that influence e-procurement implementation success in the public sector. *Journal of Public Procurement*, 6(1 & 3), 70–99. <https://doi.org/10.1108/JOPP-06-01-02-2006B004>.
- Walker, H., & Harland, C. (2008). E-procurement in the United Nations: Influences, issues and impact. *International Journal of Operations & Production Management*, 28(9), 831–857.
- World Bank. (2003). *Electronic government procurement (e-GP): World Bank draft strategy*. Washington, DC: Author.
- Wu, F., Zsidisin, G. A., & Ross, A. (2007). Antecedents and outcomes of e-procurement adoption: An integrative model. *IEEE Transactions on Engineering Management*, 54(3), 576–587. <https://doi.org/10.1109/TEM.2007.900786>.
- Yen, B. P. C., & Ng, E. O. S. (2003). The impact of electronic commerce on procurement. *Journal of Organizational Computing and Electronic Commerce*, 13(3 & 4), 167–189.

Appendix II
QUESTIONNAIRE

Department of Procurement Management,
Faculty of Sustainable Procurement,
Environmental, and Social Standards
Enhancement (SPESSE),
University of Benin,
Benin City.
15th May, 2025.

Dear Respondent,

REQUEST FOR QUESTIONNAIRE COMPLETION

My name is **Williams Oiseoje AIROYA**. I am a Master degree student in the above-mentioned department. I kindly request your cooperation in filling out this questionnaire related to the topic: **E-Procurement Adoption Practices and Inventory Control Efficiency among Manufacturing SMEs in South-South, Nigeria**. Please answer the statements by marking the provided spaces.

Thank you for your time.

Williams Oiseoje AIROYA
Researcher

SECTION A: Personal Data

1. Sex: Male [] Female []
2. Age: 18-25 years [] 26-35 years [] 36 - 45 years [] 46-55 years [] 56 years and above []
3. Marital Status: Single [] Married [] Widow(ed) [] Divorced []
4. Educational Qualification: First School Leaving Certificate or less []
SSCE/GCE/NECO/NABTEB [] OND/NCE [] HND/B.Sc []
MBA/M.Sc./Ph.D [] Others []
5. Position in Organisation: Procurement Officer [] Administrator [] Manager [] Other []
(Please specify): _____

6. Years of Experience in Current Role: Less than 1 year [] 1 - 3 years [] 4 - 6 years [] 7 - 9 years [] 10 years and above []

SECTION B: (RESEARCH QUESTION/STATEMENTS)

INSTRUCTION: Please indicate as frankly as possible the extent to which the following statements below describes your opinions using the following scale: Strongly Disagree (SD), Disagree (D), Undecided (U), Agree (A) and Strongly Agree (SA).

S/N	STATEMENTS	SD	D	U	A	SA
	Top Management Support (TMS)					
7.	Senior management champions e-procurement adoption in our firm.					
8.	Adequate budget is allocated for e-procurement systems, training, and support.					
9.	Managers set clear targets for digital procurement performance.					
10.	When procurement staff propose improvements, leadership acts promptly.					
11.	There is no strong backing from management for e-procurement. (reverse-coded)					
	Information Quality (IQ)	SD	D	U	A	SA
12.	Procurement data in our systems are accurate and free from obvious errors.					
13.	Information needed for purchasing decisions is available when required.					
14.	Supplier and item records are complete and up to date.					
15.	Reports generated from our procurement system are relevant to operations.					
16.	Our procurement information is often inconsistent across systems. (reverse-coded)					
	System Implementation Effectiveness (SIE)	SD	D	U	A	SA
17.	The e-procurement system integrates well with our inventory or ERP modules.					
18.	Users received sufficient training to perform their tasks effectively.					
19.	The system configuration reflects our actual procurement workflows.					
20.	Technical issues are resolved quickly through reliable support.					
21.	Our e-procurement deployment has not worked as intended. (reverse-coded)					
	Process Efficiency (PE)	SD	D	U	A	SA
22.	E-procurement has reduced purchase cycle times from requisition to delivery.					
23.	Transaction processing errors have decreased since adopting e-procurement.					
24.	We obtain better prices or terms due to more efficient digital processes.					
25.	Automatic approvals and alerts help us meet procurement					

	timelines.					
26.	Our procurement processes remain slow despite digital tools. (reverse-coded)					
	User Adoption and Satisfaction (UAS)	SD	D	U	A	SA
27.	Employees find the e-procurement system easy to learn and use.					
28.	Staff regularly use the system for their daily procurement tasks.					
29.	Users are satisfied with the usability and performance of the system.					
30.	The system helps staff perform their work more effectively.					
31.	Many users prefer to bypass the system and use manual workarounds. (reverse-coded)					
	Compliance and Transparency (CT)	SD	D	U	A	SA
32.	The system enforces procurement policies and approval limits.					
33.	Tendering and supplier selection are auditable through a clear digital trail.					
34.	Role-based controls limit unauthorised access or changes.					
35.	The system helps detect and prevent non-compliant transactions.					
36.	Procurement records are difficult to trace when required. (reverse-coded)					
	Inventory Control Efficiency (ICE)	SD	D	U	A	SA
37.	Stock levels closely match production needs with minimal excess.					
38.	Stockouts have reduced over the last 12 months.					
39.	Inventory holding costs have reduced due to better purchasing and replenishment.					
40.	Inventory turnover has improved alongside e-procurement adoption.					
41.	Reorder decisions are often delayed or inaccurate. (reverse-coded)					

Thank you very much for taking out time to fill this questionnaire.