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Analysing the Effect of Procurement Management Practices on Supply Chain Performance

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Abstract

This study examines the impact of procurement management practices on service supply chain performance, with a focus on three key procurement variables: procurement management practices, contract management, and procurement planning procedures, as well as their relationships with four supply chain performance indicators: customer service, responsiveness, flexibility, and reliability. The study was motivated by the growing recognition of procurement as a strategic function in enhancing organisational performance and competitiveness. A quantitative research design was employed, utilising structured questionnaires administered to procurement and supply chain professionals. The data collected was analysed using descriptive statistics, factor analysis, reliability tests (Cronbach's Alpha and KMO), and Pearson correlation to assess relationships among variables.

The findings revealed that procurement management practices, contract management, and procurement planning procedures each have a positive, albeit varied, influence on service supply chain performance. Notably, procurement management practices showed a statistically insignificant relationship with the individual performance indicators, despite a general positive trend. Contract management demonstrated a significant and positive relationship with procurement planning procedures, but remained statistically insignificant in relation to the other performance variables. Similarly, procurement planning procedures showed positive effects on customer service but weak and insignificant associations with responsiveness, flexibility, and reliability. On the performance side, strong positive and significant correlations were identified between responsiveness and flexibility, responsiveness and reliability, and between flexibility and reliability, underscoring the interconnected nature of these service supply chain dimensions.

The study concludes that although procurement-related practices are critical to enhancing service supply chain performance, their effectiveness depends on how well they are integrated with strategic planning, partner collaboration, and organisational adaptability. The research highlights the importance of organisations investing in capacity building, digital procurement systems, and integrating cross-functional teams to optimise performance outcomes. It recommends the adoption of joint learning mechanisms and sustainable procurement strategies to strengthen supply chain resilience and responsiveness. The study contributes to the body of knowledge by providing empirical insights into the role of procurement in service supply chains and by offering practical recommendations for enhancing supply chain effectiveness in dynamic and resource-constrained environments.

Keywords: *Procurement Management Practices, Supply Chain Performance, Public Sector, Supplier Partnership, Contract Management, Ministry of Food and Agriculture, Public Procurement Act, Ghana, Organisational Efficiency, Supply Chain Management*

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1.0 INTRODUCTION

In today's increasingly competitive and globalised business environment, organisations are under constant pressure to enhance efficiency, reduce costs, and deliver value to stakeholders. One of the critical functions that influences these objectives is procurement management, which plays a pivotal role in determining the overall performance of the supply chain. Procurement management encompasses the processes involved in acquiring goods and services from external sources, including supplier selection, contract negotiation, purchasing, and managing supplier relationships. When executed effectively, these practices can lead to improved operational efficiency, cost savings, and stronger supplier collaboration, essential elements for achieving optimal supply chain performance.

Supply chain performance refers to an organisation's ability to deliver goods and services in a timely, cost-effective, and quality-driven manner through its supply chain. High-performing supply chains are characterised by agility, responsiveness, reliability, and the ability to adapt to dynamic market demands. Procurement practices form the foundation for supply chain operations, and any inefficiencies in procurement activities can ripple throughout the entire supply chain, leading to delays, increased costs, and reduced customer satisfaction.

Despite the growing recognition of the strategic importance of procurement, many organisations continue to face challenges in aligning their procurement practices with supply chain objectives. These challenges may include poor supplier selection, lack of transparency, inadequate contract management, and ineffective communication between supply chain partners. As a result, understanding the impact of procurement management practices on supply chain performance has become an area of increasing interest for both scholars and practitioners.

This research aims to analyse the impact of procurement management practices on supply chain performance and to identify the key procurement strategies that contribute to improved supply chain outcomes. By examining the relationship between procurement activities and supply chain efficiency, the study will provide insights that can inform decision-making and promote best practices in procurement management. Ultimately, the research aims to contribute to the growing body of knowledge in supply chain and operations management, while providing practical recommendations for organisations seeking to optimise their procurement functions for enhanced supply chain performance.

1.1 Background

In the modern business landscape, supply chain management (SCM) has become a critical driver of organisational success. At the heart of an efficient supply chain lies procurement management — the strategic process of acquiring goods and services necessary for business operations. Procurement management involves planning, sourcing, negotiating, contracting, and evaluating suppliers to ensure the creation of value and operational efficiency. Its role has evolved from a simple transactional function to a strategic enabler of competitive advantage and sustainability (Agyekum et al., 2023).

The effectiveness of procurement practices has a direct bearing on supply chain performance, influencing key dimensions such as cost efficiency, quality assurance, lead time, and customer satisfaction. Well-managed procurement systems can enhance supplier relationships, reduce operational risks, and improve responsiveness to market changes (Zhao & Niyirora, 2022). Conversely, weak procurement systems are often associated with cost overruns, supply disruptions, and reduced productivity across the supply chain.

In many developing economies, including those in Sub-Saharan Africa, public and private sector organisations alike continue to face challenges in implementing procurement practices that align with global best practices. Issues such as lack of transparency, limited supplier development, bureaucratic procurement processes, and poor contract management remain

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prevalent (Owusu & Boateng, 2021). These limitations hinder supply chain agility, leading to inefficiencies that impact service delivery and organisational performance.

Recent research has highlighted the importance of adopting strategic procurement practices, including e-procurement, supplier collaboration, and performance-based sourcing, to improve supply chain outcomes. These practices not only improve operational efficiency but also contribute to long-term value creation and innovation within the supply chain (Mensah & Antwi, 2024).

Given the increasing complexity and interdependence of supply chains, there is a growing need to understand how procurement management practices can be optimised to support overall supply chain performance. This is particularly relevant in the context of global disruptions, such as the COVID-19 pandemic and geopolitical tensions, which have exposed vulnerabilities in procurement and supply chain operations worldwide. Analysing the effect of procurement management practices on supply chain performance is therefore critical to building resilient, responsive, and sustainable supply chains.

2.0 LITERATURE REVIEW

The relationship between procurement management practices and supply chain performance has garnered significant attention in recent years, particularly in the context of globalisation, technological advancements, and sustainability imperatives. This review synthesises current literature on key procurement strategies and their impact on supply chain efficiency, agility, and resilience.

Procurement is increasingly gaining attention among organisations, including the agricultural industry globally (Swensson & Tartanac, 2020). It is primarily seen as a key driving force in achieving value for money for the sector in developing economies, including Ghana (Darko et al., 2017). Procurement describes the overarching function and process of activities involved in obtaining goods and services (Gupta & Gupta, 2012). From another perspective, procurement is defined as the activities involved in obtaining materials and services, and managing their inflow into an organisation towards the end user (Rowlinson & McDermott, 1999). Chepkesis and Keitany (2018) have stated that procurement involves processes that establish essential demands such as purchasing procedures, market research and contract negotiation. Thus, procurement would span from acquiring major supplies, such as raw materials or parts for a manufacturing firm, to acquiring consumables for a service organisation.

According to network theory, an organisation can achieve value for money by establishing long-term collaboration with its suppliers, contractors, and/or service providers during procurement. The theory further argues that all organisations need to adopt relevant procurement practices in order to meet their objectives. The theory has also included practices such as supplier partnership, contract management, procurement planning and knowledge of procurement as part of the procurement principles. Tertiary institutions now offer comprehensive academic programs, and procurement-related bodies have been established due to the expanded knowledge.

The ability of the complete supply chain to meet end-customer expectations through product availability, responsiveness, and on-time delivery is characterised as supply chain performance. Supply chain performance crosses both functional lines and company boundaries (Mohapatra, Mohanty and Dhalla, 2010). Improving supply chain performance is a continuous process that requires both an analytical performance measurement system and a mechanism to initiate steps for realising key performance indicator (KPI) goals. The mechanism to achieve KPI goals can be referred to as "KPI accomplishment", which connects planning and execution, and builds steps for the realisation of performance goals into routine daily work. To measure supply chain performance, a set of variables captures the impact of the actual working of supply chains on the revenues and costs of the entire system. These variables, as drivers of supply chain performance, are often derived from supply chain management practices (Gunasekaran *et al.*,

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2004). Many metrics used in supply chain performance evaluation have been designed to measure operational performance, evaluate improved effectiveness, and examine strategic alignment of the whole supply chain management (Lima-Junior & Carpinetti, 2020). Individual measures of supply chain performance have usually been classified into four categories: quality, time, cost and flexibility. Furthermore, they have also been grouped by quality and quantity, cost and no-cost, strategic, operational, and tactical focus, as well as supply chain processes.

According to Kamaru and Were (2018), supply chain performance leads to a better understanding of the system and the introduction of common standards. Despite the challenges encountered, developing an effective and efficient supply chain can become a core competency or even a distinctive one. A core competency is any function that a firm performs well. Core competencies are the primary business activities that enable companies to achieve a consistently high level of business success over the long term. In management disciplines, "core competencies" refer to focusing on and exploring particular strengths within a company and formulating strategies that help increase market shares and profits. On the other hand, a distinctive competency is a function that is performed well and is unique.

Literature has shown that the basis of competition in many industries in the future will revolve around supply chain development. Procurement policies and procedures, including procurement strategies and plans, composition of procurement committees and their responsibilities, ethics, supplier selection management and tender evaluation, must be taken into consideration to enhance supply chain performance in the banking sector. Quyen (2020) suggests that procurement management practices are associated with organisational performance. A good procurement management practice accounts for 70-80 per cent of organisational spending, hence it is a critical area that must be managed effectively. (Mathivathanan, Kannan & Haq, 2018). Procurement practices integrate various firms' operations and support functions, synchronising production with new orders, purchasing with demand, scheduling and shipping with customer requirements (Mathivathanan et al., 2018). Thus, according to Loader (2015), an organisation's well-implemented procurement policies create an effective, rapid, and accurate management tool that shortens cycle time and increases reliability, thereby positively affecting the organisation's performance. However, poorly coordinated procurement practices do long-lasting damage to companies' stock prices and profitability (Good, 2015). The private sector plays a vital role in developing and achieving the nation's goals.

Ghana is one of the developing countries with a robust agricultural sector, which serves as a leading benchmark for developing its economy (Adom, 2018). According to Adom (2018), this vibrant sector employs half of Ghana's working population, while feeding the country's population of 31.73 million. Procurement activities undertaken in the country by public organisations are guided by the Republic of Ghana Public Procurement Act, 2003 (Act 663). The Government of Ghana introduced this law to regulate and control public expenditure on various procurement activities across public institutions. Mabli and Worthington (2017) noted that effective national procurement policies can help improve the execution of infrastructure projects, yielding benefits in terms of exports and economic growth. The private sector also makes significant contributions to economic growth through job creation, revenue generation, and the provision of social amenities (Ghana Statistical Service, 2018).

Hence, Procurement practices are unique resources that can be adequately exploited and harnessed to attain desired objectives while increasing the organisational performance of private organisations. According to Sánchez-Rodríguez, Martínez-Lorente and Hemsworth (2019), private firms are recommended to measure performance to gauge their position and take appropriate actions to meet their objectives and increase organisational performance. According to Ameyaw, Mensah and Osei-Tutu (2012), there is no evidence that the passage of the Public Procurement Law and its implementation have made any significant impact on private procurement in Ghana. However, studies show that many private organisations often procure

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goods without strictly adhering to the provisions in the Procurement Act (Aroral, Ujakpa, Jonathan, Appiahi-Annin & Mwanza, 2016).

Procurement management continues until the procured item reaches the end of its useful life, at which point the commodity is disposed of (Sindiga, Paul & Mbura, 2019). From this, it is evident that procurement activities have an impact on the economic performance of any establishment.

2.1 Strategic Procurement and Organisational Performance

Strategic procurement, encompassing activities such as supplier selection, contract negotiation, and long-term relationship management, is pivotal in enhancing organisational performance. A study focusing on Ghanaian industrial firms found that strategic procurement significantly improves organisational outcomes, with supplier relationship management acting as a supportive factor rather than a direct influencer of performance. This highlights the importance of aligning procurement strategies with broader organisational objectives to achieve optimal supply chain performance.

2.2 Sustainable Procurement and Supply Chain Efficiency

Sustainable procurement practices, including green purchasing and reverse logistics, are associated with enhanced firm performance. Research within Ghana's extractive industry has shown that sustainable supply chain management practices are positively correlated with firm performance, with green performance serving as a mediating factor. This highlights the role of environmental considerations in procurement decisions and their subsequent impact on supply chain efficiency.

2.3 Technological Advancements in Procurement

The integration of digital technologies into procurement processes has transformed supply chain management. Automation and artificial intelligence (AI) are increasingly utilised to streamline tasks such as order processing and supplier evaluation. A study emphasised that AI-driven analytics enhance procurement by providing insights into supplier performance and market trends, thereby improving decision-making and responsiveness. Moreover, the adoption of Internet of Things (IoT) solutions has been proposed to address challenges related to security, tracking, and traceability in supply chains.

2.4 Regulatory Compliance and Ethical Procurement

Compliance with procurement laws and ethical standards is crucial for establishing trust and maintaining supply chain integrity. Adherence to public procurement regulations fosters transparency and accountability, which in turn enhances supplier confidence and promotes long-term collaboration. Furthermore, the implementation of standards such as ISO 20400 guides the integration of sustainability into procurement processes, promoting responsible purchasing decisions.

2.5 Research Gap Analysis

Despite the growing body of literature on procurement management practices and supply chain performance, several notable gaps remain that warrant further investigation. These gaps form the basis for the current study, justifying its relevance and contribution to the field.

2.5.1 Limited Contextual Research in Developing Economies

While numerous studies have examined procurement and supply chain performance in developed countries, there is a notable lack of research focusing specifically on developing economies, such as Ghana and sub-Saharan Africa. Many procurement strategies and performance metrics are derived from contexts with more advanced infrastructure, regulatory

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environments, and technological capabilities, which may not directly apply to or reflect the realities of organisations operating in less-developed settings. This presents a gap in contextual relevance, where localised studies are needed to understand how procurement practices function and influence supply chain performance in such environments.

2.5.2 Narrow Focus on Isolated Procurement Practices

Existing studies often analyse individual procurement elements such as supplier selection or contract management in isolation, rather than adopting a comprehensive approach to procurement management. This fragmented view may limit our understanding of how an integrated procurement strategy influences supply chain performance holistically. There is a need for research that evaluates the combined impact of multiple procurement practices, including strategic sourcing, supplier relationship management, compliance, and sustainability, on supply chain outcomes.

2.5.3 Insufficient Integration of Technological and Sustainable Practices

Although the importance of digital technologies and sustainable procurement is acknowledged in recent literature, there is a lack of empirical research assessing how these emerging practices directly impact supply chain performance in practice, especially in resource-constrained environments. The adoption rate of digital tools, such as AI, automation, and IoT, in procurement management is uneven, and their impact on supply chain agility and responsiveness in developing countries remains underexplored.

2.5.4 Lack of Industry-Specific Studies

Most of the existing studies adopt a cross-sectoral approach, which may overlook industry-specific procurement challenges and requirements. Different sectors, such as manufacturing, construction, healthcare, and public sector institutions, have unique procurement needs and supply chain structures. There is a clear gap in studies that focus on specific industries to identify tailored procurement practices that enhance supply chain performance in those contexts.

2.5.5 Measurement and Evaluation Challenges

Another gap in the literature relates to the inconsistent use of performance indicators and metrics for evaluating both procurement practices and supply chain performance. Many studies rely on qualitative assessments or subjective judgments, often without a standardised framework for evaluation. There is a need for research that develops or applies clear, measurable, and validated indicators that link procurement practices to supply chain outcomes.

2.6 Conclusion

The literature indicates that effective procurement management practices, encompassing strategic alignment, sustainability, technological integration, and regulatory compliance, are instrumental in enhancing supply chain performance. Organisations that adopt these practices are better positioned to achieve efficiency, resilience, and competitive advantage in their supply chains. Future research should continue to explore the dynamic interplay between procurement strategies and supply chain outcomes, particularly in the face of evolving global challenges.

In summary, the identified gaps, particularly those related to contextual relevance in developing economies, comprehensive evaluation of procurement practices, integration of technology and sustainability, industry-specific analysis, and measurement frameworks, highlight the need for a focused study. This research aims to fill these gaps by analysing how procurement management practices affect supply chain performance, with an emphasis on organisations in a developing economy context. The findings are expected to provide practical

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insights and policy recommendations that contribute to improving supply chain efficiency and resilience through effective procurement strategies.

3.0 METHODOLOGY

The research approach used in this study is presented in this chapter. It covers the research design, research approach, data collection procedures and tools, determining reliability and validity, target population, sampling design and sample size, and data processing methodologies.

3.1 Research Design

The phrase "research design" refers to a roadmap that guides a researcher through the process of conducting a study while maintaining maximum control over factors that could affect the validity of the results (Turne *et al.*, 2017). This research topic employed a quantitative research method. As Creswell (2017) posits, quantitative design examines phenomena that can be observed and measured. Creswell (2017) further posits that qualitative design enables researchers to gain a deeper understanding of society and how people behave. In a nutshell, the goal of employing a quantitative approach in this study is to characterise the problem by creating statistical data, as well as to quantify the attitudes and experiences of the sample group and make generalisations based on the findings.

3.2 Research Approach

Though questionnaires, interviews, and observations were used, this study employed a mixed research design to collect both qualitative and quantitative data. Both qualitative and quantitative data best address the research hypotheses; hence, a mixed-methods research design was adopted. Primary data for this study was gathered through the use of questionnaires and interviews. They were conducted to compare the information from the survey results. Results from the qualitative research technique were provided to elaborate upon or clarify the findings of the quantitative research approach.

Quantitative approaches are more effective for examining frequency questions, whereas qualitative approaches are more suitable for examining perceptions and opinions. Because the questions addressed both of these, a hybrid methods were preferred. This "mixing" or "blending" of the data offers a deeper comprehension of the problem or search than either would alone. Researchers can gather data on people's behaviours, beliefs, attitudes, and any other educational or societal concerns using a mixed study design, which combines qualitative and quantitative methodologies (Namusonge *et al.*, 2016). Creswell (2017) demonstrated how the two categories of data offer various kinds of information. Combining several types of data collection might help researchers better comprehend the research challenge or questions and circumvent their weaknesses.

More specifically, the mixed-methods research approach combines qualitative and quantitative data, procedures, and/or conceptual frameworks in a single study or a collection of related studies. Both academic and professional research techniques emphasise that the use of diverse data, procedures, viewpoints, approaches, and perspectives can enhance mono-method research (Christenson & Gutierrez, 2016). This study employs a mixed-methods approach to gain a deeper understanding of the effects of electronic tendering, electronic order processing, electronic material management, and electronic supplier management on supply chain performance.

3.3 Target Population

The target population of a study is the group of people that the study seeks to analyse, perform the study on, and draw conclusions from (Apuke, 2017). Determining a target population is often influenced by various factors, including the research objectives, accessibility of the target

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population, and proximity to the target population (Asiamah, Mensah, and Oteng-Abayie, 2017). In practice, this means that the target population of a study is the entire set of units from which the data acquired will be used to draw conclusions and inferences.

This study's population encompasses all individuals and stakeholders across all departments of Ghana's Ministry of Agriculture. However, to accurately manage the gathering of data and minimise time and financial resources, the sample was confined to the Ministry of Agriculture in Ghana's Northern region. The Ministry of Agriculture conducted a census study in selected districts of the Northern Region. Members in a range of positions, from junior to senior management and authorities with years of experience in various departments, participated in this survey.

3.4 Sampling technique

Stratified random sampling was used to select the sample because the population is heterogeneous. The Ministry of Agriculture is composed of various departments, classified according to their specific work. Therefore, the stratified random sampling method was used to determine the sample size, ensuring it accurately reflects the cross-section within the Ghanaian Ministry of Agriculture. According to Cooper and Schindler (2011), this ensures that each subsector is represented. The population was stratified by department and level of seniority (senior, middle, and lower managers) across the entire ministry. Then, simple random sampling without replacement was applied to draw respondents from each department of the Agriculture Ministry, including ICT, Procurement, Finance, Audit, Strategy, Marketing, and Stores, among others. The procurement management strategy and its application to the supply chain performance are assessed at all departments of the ministry. Questionnaires were distributed to members of each department systematically until the required number was achieved.

3.4.1 Sample size

A sample is a smaller group or subgroup that is representative and studied on behalf of the entire target population (Israel, 2013). The study sample size was determined using the Yamane (1967:886) formula at a precision level of 5% and a 95% confidence interval (Israel, 2013) as shown below

$$n = \frac{N}{1+N\,(e)^2}$$

Where

- n is the desired sample size,
- N is the population size, and
- e is the level of precision (5%)
- Considering a population of 650 people,

$$sample\ size\ (n) = \frac{650}{1+650\ (0.05)^2} = 250$$

Therefore, according to the estimate above, the study's sample size consisted of 250 people. However, to address the non-response rate, a 10% safeguard provision was added on top of the 240 units (Cooper & Schindler, 2011). Hence, a sample size of 280 individuals was selected.

3.5 Source of Data

The techniques used to collect, compile, and analyse data are referred to as data sources (Mesly, 2015). Mesly (2018) further noted that there are two main categories of data sources: primary and secondary sources. To obtain data for a study, either a primary source or a secondary source may be used.

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Both primary and secondary data were found relevant for this research. The actual record made as part of a research effort is the primary data. This data source is directly related to the study's topic. The primary data provided the researcher with firsthand information about the study subjects' personal beliefs, preconceptions, and prejudices (Creswell, 2017). The core data for this study was collected via questionnaires. Secondary sources of data are those obtained by a researcher or someone other than the intended user of the data. Although not case-specific, this kind of previously obtained information may be significant to the subject under study.

Accessible handbooks, annual reports, applicable data from the internet, journals, and other suggested resources were among the secondary data the study relied on. The materials gathered from these sources were examined to determine whether they were adequate for answering the study questions. To strengthen the credibility of the study, each assumption was supported by evidence from multiple independent data sources.

3.5.1 Data Collection

The data was collected using a structured questionnaire. The questionnaires were designed based on the research questions and objectives, consisting of closed-ended questions and a scalar format. The questionnaire contained three sections as shown in table 3.1: Section A sought data on the institutional profile; section B sought data on the extent of adherence to policies and procedures; section C sought to gather information on the relationship between procurement policies and policies on supply chain performance, whereas, section D sought data on the challenges faced in the implementation of procurement policies and procedure at the Agriculture Ministry.

3.5.2 Data Analysis

The completed questionnaires were reviewed for accuracy and coherence before processing the responses. Descriptive statistics were used to analyse the quantitative data collected and generated percentages, means, standard deviations, and frequencies. This was accomplished by adding up responses, calculating respondent variance percentages, and presenting and interpreting the results in accordance with the study's objectives and underlying assumptions. Tables and other graphical presentations were utilised when needed to illustrate the collected data for easy analysis and understanding. The generated data was then evaluated and explained. The overall profile, degree of compliance with procurement management strategy, and challenges encountered during the implementation of procurement policies and procedures were examined using descriptive statistics. The association between procurement policies and procedures and supply chain performance was analysed using correlation and regression analysis. Regression analysis was used to quantify the strength of the association among the research variables, whilst correlation analysis was used to determine the relationship between the independent variables and the dependent variable.

The employed regression model is as follows.

$$y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5$$

Where:

- Y = Supply chain performance
- β0 = Constant Term
- β1 = Beta coefficients
- X1 = Procurement strategies and plans
- X2 = Composition of the procurement committee and responsibility
- X3 = Ethics
- X4 = Supplier selection and management

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- X5 = Tender Evaluation

Table 3.1: The employed regression model.

Objective	Data collection	Analysis
General profile	Section A	Descriptive statistics
Extent of adherence to procurement policies and procedures	Section B	Descriptive statistics
Relationship between procurement policies and procedures and performance of the supply chain	Section C	Correlation and regression
The Challenges faced in the implementation of procurement policies and procedures	Section D	Descriptive statistics

3.6 Reliability and validity of the study

The degree to which the study measures are consistent is referred to as reliability. The capacity of a study's findings and outcomes to be repeated is often referred to as reliability. Cronbach's alpha was used in this study to measure reliability, as it enables the assessment of internal reliability for variables with multiple alternative responses or answers. Internal reliability refers to the extent to which a questionnaire or instrument accurately measures what it is intended to measure.

On the other hand, research validity refers to the extent to which a survey questionnaire accurately measures what it intends to assess (Karros, 1997). Based on the use of constructs and tools examined and tested by other authors, validity was attained for this study (Karros, 1997; Cooper & Schindler, 2011; Mesly, 2015). Since these papers adhere to international standards and have undergone peer review, using their tools and instruments ensured the reliability of the research.

3.7 Ethical considerations

Research ethics are crucial in social science studies due to the nature and characteristics of the individuals who participate in the study. Given this, the KNUST Graduate School's ethical consideration was used to achieve and confirm the ethical considerations of this research. The participants were informed of the study's goals and the reason for their voluntary participation, which was crucial to its success. The respondents were guaranteed confidentiality and anonymity. Thus, the completed questionnaires obtained from the various respondents were coded without their names added to protect their identity. Additionally, the researcher explained to the respondents their roles in the study and what was expected of them to contribute meaningfully to the study's goals. They were informed once more that the study's results were solely for academic purposes and had no ulterior intentions.

4.0 DATA ANALYSIS

This section presents the data, analysis and discussion of the results. The chapter begins with the respondents' demographics, validity and reliability tests, descriptive and inferential statistics, hypothesis testing, and findings, as well as a discussion of the results. In total, 150

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questionnaires were administered to the respondents, of which 137 were returned, representing a response rate of 91%.

4.1 Analysis of Respondents' Demographics

This section analyses the demographic characteristics of the 137 respondents who participated in the study on procurement management practices and supply chain performance. The demographic information includes gender, age, years of working experience, position in the company, level of education, and type of company.

Table 4.1 Respondents' Demographics

Profile	Characteristics	Frequency	Percentage
Gender	Male	113	82.5
	Female	24	17.5
	Total	137	100.0
Age	19-24 years	16	11.6
	25-29 years	46	33.6
	30-39 years	39	28.5
	40-49 years	16	11.7
	50 years or more	20	14.5
	Total	137	100
Years of working	1-5	17	12.4
	6-10	33	24.1
	11-15	41	29.9
	16-20	27	19.7
	20+	19	13.8
	Total	137	100
Position in the company	CEO	45	32.8
	Supervisor	52	38.0
	Senior Staff	31	22.6
	junior Staff	9	6.6
	Total	137	100
Level of education	A level or less	18	13.1
	Bachelor	75	54.7
	Master	34	24.8
	PhD	10	7.3
	Total	137	100
Type of company	Private	42	30.6
	Public	95	69.3
	Total	137	100

Source: Field Data, 2025

The data indicates a significant gender disparity among respondents, with 113 males (82.5%) and 24 females (17.5%). This suggests that the workforce in procurement and supply chain-related roles is predominantly male, which may reflect broader gender imbalances in the sector or organisation.

The respondents are relatively young, with the majority falling within the 25–29 years (33.6%) and 30–39 years (28.5%) age brackets. This suggests that the procurement and supply chain workforce is predominantly composed of professionals in their early to mid-career stages. Smaller proportions are observed in the 19–24 years (11.6%), 40–49 years (11.7%), and 50 years and above (14.5%) categories, suggesting fewer older or late-career professionals.

Most respondents have a considerable amount of professional experience. Those with 11–15 years (29.9%) of experience form the largest group, followed by those with 6–10 years (24.1%)

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and 16–20 years (19.7%) of experience. Only 12.4% have worked for 1–5 years, while 13.8% have over 20 years of experience. This distribution suggests that the respondents are well-positioned to provide informed insights into procurement and supply chain practices, given their professional exposure.

The most significant proportion of respondents are Supervisors (38.0%), followed by CEOs (32.8%), Senior Staff (22.6%), and Junior Staff (6.6%). This reflects a well-balanced mix of leadership and operational staff, with the majority holding mid-to-senior-level positions. This mix offers a comprehensive organisational perspective on procurement practices and supply chain performance.

The data show that a majority of the respondents are well-educated, with 54.7% holding Bachelor's degrees, 24.8% holding Master's degrees, and 7.3% holding PhDs. Only 13.1% have A-level or less. This educational profile suggests a workforce with strong academic foundations, which likely contributes to the application of formal procurement management principles in practice.

A large majority of respondents (69.3%) work in the public sector, while 30.6% are employed in private organisations. This aligns with the study's focus on procurement in public institutions, particularly the Ministry of Food and Agriculture. The dominance of public sector respondents ensures relevance and alignment with the study's objectives.

The demographic analysis reveals that the respondents are predominantly male, well-educated, and experienced professionals, primarily employed in the public sector. Their mid-level and senior positions within their organisations suggest that their views on procurement and supply chain practices are likely to be informed, strategic, and relevant to their organisations' performance. This provides a solid basis for the reliability and validity of the research findings.

4.2 Analysis of Validity and Reliability Results

This section presents the results of the validity and reliability tests conducted on the constructs used in the study, as shown in Table 4.2. The two key measures reported are Cronbach's Alpha (for reliability) and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (for validity).

Reliability – Cronbach's Alpha

Cronbach's Alpha is used to assess the internal consistency of a scale, with values above 0.70 generally considered acceptable for social science research.

- Procurement Management Practices (α = 0.760): Indicates acceptable reliability.
- Contract Management (α = 0.844): Suggests high internal consistency.
- Procurement Planning Procedures (α = 0.752): Also reflects acceptable reliability.
- Customer Service (α = 0.767): Indicates good reliability.
- Responsiveness (α = 0.903): Reflects excellent reliability.
- Flexibility (α = 0.945): Shows outstanding internal consistency.
- Reliability (α = 0.821): Indicates strong internal consistency.

All variables meet or exceed the minimum acceptable threshold of 0.70, indicating that the items used to measure each construct are reliable and consistent.

Validity – KMO (Kaiser-Meyer-Olkin)

The KMO statistic measures the adequacy of sampling for factor analysis. Values above 0.60 are considered acceptable, and values above 0.70 are considered good.

- Procurement Management Practices (KMO = 0.621): Acceptable.
- Contract Management (KMO = 0.669): Acceptable.
- Procurement Planning Procedures (KMO = 0.737): Good.
- Customer Service (KMO = 0.679): Acceptable.

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- Responsiveness (KMO = 0.696): Acceptable.
- Flexibility (KMO = 0.754): Good.
- Reliability (KMO = 0.779): Good.

The KMO values range from 0.621 to 0.779, indicating that the data is suitable for factor analysis. The sampling adequacy for all constructs is within acceptable to reasonable levels, confirming the validity of the constructs used in the study.

The results from Table 4.2 confirm that the constructs used in this research are both reliable and valid. Cronbach's Alpha scores demonstrate strong internal consistency across all variables, and the KMO values indicate that the data are suitable for further statistical analyses, such as factor analysis or regression. These findings enhance the credibility of the research outcomes and support the robustness of the data collection instruments used.

Table 4.2 Validity and Reliability Results

Variables	Items Number	Cronbach's Alpha	KMO
Procurement Management Practices	3	.760	.621
Contract Management	3	.844	.669
Procurement planning procedures	4	.752	.737
Customer service	6	.767	.679
Responsiveness	3	.903	.696
Flexibility	4	.945	.754
Reliability	5	.821	.779

Source: Field Data, 2025

4.3 Analysis of Factor Loadings

Factor loadings help to determine how well individual items represent the underlying constructs or variables they are intended to measure. In general, a factor loading of 0.50 or higher is considered acceptable, with values above 0.70 being ideal for strong construct validity. All three items meet the minimum acceptable threshold. Two items load very strongly (>0.75), indicating they are highly representative of the procurement management construct. The third item (0.558) is still acceptable but may be a weaker indicator.

All items load firmly, especially the first two, suggesting high construct validity for this variable. This means the contract management items effectively capture the intended concept. Three of the four items show good loadings (≥0.65), while one item is just below the acceptable threshold (0.494). While this item is slightly weak, it is close enough to retain, though it may benefit from revision or reevaluation in future studies. All six items load adequately, with most values above 0.60 and one item with a strong loading of 0.759. This shows a moderately strong representation of the customer service construct.

All four items exceed the 0.60 mark, showing good internal consistency. The factor loadings indicate that each item makes a meaningful contribution to measuring responsiveness. All four items have acceptable factor loadings, with two close to 0.70. This confirms that these items reliably measure the flexibility construct. The factor loadings for reliability are all acceptable, with one item showing an extreme loading (0.764). This suggests that the reliability construct is well-represented.

All items across the seven constructs show acceptable to strong factor loadings, supporting the construct validity of the measurement instrument. Most variables have multiple items with loadings above 0.65, and only a few fall slightly below the 0.50–0.60 threshold. Therefore, the factor structure is solid, indicating that the questionnaire items reliably and validly measure the intended constructs in the study on procurement management practices and supply chain performance.

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Table 4.2.1 Factor loadings

Variables	Loadings	Variables	Loadings
Procurement Management Practices	.775	Contract Management	.832
	.760		.798
	.558		.678
Procurement planning procedures	.759	Flexibility	.712
	.655		.693
	.494		.595
	.719		.649
Customer service	.678	Reliability	.571
	.596		.665
	.582		.673
	.650		.610
	.634		.764
	.759		
Responsiveness	.684		
	.678		
	.655		
	.610		

Source: Field Data, 2025

4.4 Procurement Management Practices

To inform procurement management practices, the literature was reviewed, and three leading indicators were identified to measure the variable: procurement management practices, Contract Management, and Procurement planning procedures. Three items were selected to measure the indicators of Procurement Management Practices and Contract Management, whereas four items were used to measure the indicator Procurement Planning Procedures. Table 4.3 presents the results.

Table 4.3 Descriptive statistics for Procurement management practices

Variables	Min	Max	Mean	S.D
Procurement Management Practices				
PMP01. Our procurement unit can ensure a partnership with suppliers	1.00	5.00	4.1168	.91608
PMP02. Our procurement unit can help our Suppliers to improve their quality	1.00	5.00	4.8394	.95666
PMP03. Our procurement unit can help our Suppliers to improve their service delivery	2.00	5.00	4.1679	.85379
Contract Management				
CM1. We can establish a long relationship with our suppliers during and after a contract	1.00	5.00	4.8321	1.19170
CM2. We are also ensuring a good relationship with our partners after their contracts have expired	2.00	5.00	3.9124	.82671
CM3. We have maintained a good relationship with some suppliers for over ten years	1.00	5.00	4.0584	.83812
Procurement planning procedures				
PPP1. The procurement unit acquires relevant goods for the organisation	1.00	5.00	4.9708	.91508
PPP2. The procurement unit identifies the needs of the organisation before buying	2.00	5.00	4.9635	.95030
PPP3. The procurement unit goes according to the budget	1.00	5.00	4.8029	1.02784
PPP04. The procurement unit spends within the budget and alerts the various units when they exceed their quota.	1.00	5.00	4.0511	1.13320

Source: Field Data, 2025

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4.4.1 Descriptive Statistics Analysis of Key Variables

This section presents the descriptive analysis of three key independent variables in the study: Procurement Management Practices, Contract Management, and Procurement Planning Procedures. The analysis is based on the minimum (Min) and maximum (Max) scores, mean, and standard deviation (S.D) of the items used to measure these constructs.

Procurement Management Practices (PMP)

Item Code	Description	Min	Max	Mean	S.D
PMP01	Our procurement unit can ensure a partnership with suppliers	1.00	5.00	4.12	0.92
PMP02	Our procurement unit can help our suppliers improve their quality	1.00	5.00	4.84	0.96
PMP03	Our procurement unit can help our suppliers improve their service delivery	2.00	5.00	4.17	0.85

The mean values for all three items are high (above 4.0), indicating a strong agreement among respondents that procurement units play an active role in supplier development. PMP02, with a mean of 4.84, received the highest rating, suggesting that supplier quality improvement is a key strength. The standard deviations indicate moderate variability in responses, with PMP01 having the widest spread.

Contract Management (CM)

Item Code	Description	Min	Max	Mean	S.D
CM1	We can establish a long relationship with our suppliers during and after a contract	1.00	5.00	4.83	1.19
CM2	We ensure a good relationship with partners after their contracts expire	2.00	5.00	3.91	0.83
CM3	We have maintained a good relationship with some suppliers for over ten years	1.00	5.00	4.06	0.84

Respondents strongly agree that long-term supplier relationships are valued, particularly during and after contracts (CM1: mean = 4.83). However, post-contract relationship management (CM2) received a lower mean score (3.91), suggesting room for improvement in maintaining continuity. The relatively higher standard deviation for CM1 (1.19) reflects diverse views among respondents.

Procurement Planning Procedures (PPP)

Item Code	Description	Min	Max	Mean	S.D
PPP1	The procurement unit acquires relevant goods for the organisation	1.00	5.00	4.97	0.92
PPP2	The procurement unit identifies the needs of the organisation before buying	2.00	5.00	4.96	0.95
PPP3	The procurement unit goes according to the budget	1.00	5.00	4.80	1.03
PPP4	The procurement unit spends within the budget and alerts units when they exceed quotas	1.00	5.00	4.05	1.13

The highest mean scores across all variables are recorded under procurement planning. PPP1 and PPP2 received very high ratings (means above 4.95), indicating effective alignment of procurement with organisational needs. However, PPP4 (mean = 4.05) shows a noticeable drop,

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suggesting that while procurement is budget-aware, internal communication about budget overages could be improved.

All variables show high mean scores, indicating that respondents generally perceive procurement practices, contract management, and planning procedures to be effective. However, particular areas, such as post-contract relationship management (CM2) and budget alert mechanisms (PPP4), show slightly lower scores and may require strategic improvements. Standard deviations across items reflect moderate variability, suggesting that while the majority agree on the effectiveness of these practices, there is still some diversity in experience or perception. This descriptive analysis provides important foundational insights into how procurement functions are perceived within organisations, laying the groundwork for more detailed inferential analysis.

4.5 Service Supply Chain Performance

To assess Service Supply Chain Performance, the study relied on insights from existing literature and identified four key indicators: customer service, responsiveness, flexibility, and reliability. Each of these dimensions was measured using multiple items: six items for customer service, three for responsiveness, four for flexibility, and five for reliability. The results are presented in Table 4.4.

Respondents generally agreed that their organisations performed well across customer service indicators. Specifically, the item measuring the improvement of products or services based on customer feedback recorded a mean of 4.04 (SD = 1.04). The perception of improved customer satisfaction had a mean of 4.12 (SD = 1.04). The strongest agreement was on improved responses to meet customer needs and wants, with a mean of 4.99 (SD = 0.98). Additionally, respondents acknowledged improvements in service delivery (mean = 4.16, SD = 0.93), effective management of customer complaints (mean = 4.77, SD = 1.01), and the organisation's ability to retain customers (mean = 4.78, SD = 1.02)

The results show strong agreement that organisations are responsive to the needs of both customers and suppliers. Respondents agreed that their organisations are responsive in improving product/service quality in line with stakeholder needs (mean = 4.62, SD = 1.03), can respond to customer/supplier queries promptly (mean = 4.86, SD = 1.04), and can support customers by providing needed services (mean = 4.71, SD = 1.04).

Organisations were also perceived to be flexible in their service delivery. Respondents indicated that their organisations can adapt to changing customer and supplier requirements (mean = 4.83, SD = 1.00), reduce product/service lead times (mean = 4.71, SD = 1.05), and demonstrate flexibility in achieving customer and supplier satisfaction (mean = 4.91, SD = 1.03). Additionally, organisations were seen as flexible in resource utilisation for service delivery (mean = 4.92, SD = 1.06).

Reliability indicators showed moderately high levels of agreement. Respondents agreed that their organisations perform promised services dependably (mean = 4.84, SD = 1.08) and perform services accurately (mean = 4.65, SD = 0.97). Organisations were also perceived to inspire trust and confidence among customers and suppliers (mean = 4.67, SD = 1.06). However, there was less confidence in accurate forecasting for unexpected demand (mean = 3.58, SD = 0.95), as well as uncertainty regarding the reliability of information systems to meet customer satisfaction (mean = 3.89, SD = 0.97).

This analysis offers a comprehensive view of how respondents evaluate the performance of their organisations across service supply chain indicators, with extreme scores in responsiveness and flexibility, and areas for improvement highlighted in reliability.

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Table 4.4 Descriptive statistics for Service Supply Chain Performance

Variables	Min	Max	Mean	S.D
Customer service				
CS1. Our company has improved products/services based on customer feedback	1.00	5.00	4.0438	1.03518
CS2. Customer satisfaction has improved in our company	1.00	5.00	4.1241	1.03927
CS3. Our company has improved responses to meet customer needs and wants	1.000	5.000	4.99270	.981418
CS4. Our company has improved its service delivery to customers	1.00	5.00	4.1606	.92541
CS5. Our company can manage our customers' complaints	1.00	5.00	4.7737	1.01455
CS6. Our company can improve customer retention	1.00	5.00	4.7810	1.01977
Responsiveness				
RR1. The responsiveness to improve product/service quality according to customer and supplier needs	1.00	5.00	4.6204	1.02993
RR2. The ability to respond to customer/supplier queries promptly	1.00	5.00	4.8613	1.03741
RR3. The ability to respond to help our customers by providing the services that the customers need	1.00	5.00	4.7080	1.04432
Flexibility				
FF1. The flexibility to change customer and supplier requirements whenever needed	1.00	5.00	4.8321	1.00418
FF2. The flexibility to reduce the product/service lead times	1.00	5.00	4.7080	1.05133
FF3. The flexibility in customer and supplier satisfaction	1.00	5.00	4.9051	1.03055
FF4. The flexibility in the utilisation of resources in the delivery of services	1.00	5.00	4.9197	1.06452
Reliability				
RP1. The ability to perform the promised service dependably	1.00	5.00	4.8394	1.07944
RP2. The ability to perform the service accurately	1.00	5.00	4.6496	.97461
RP3. The ability to inspire trust and confidence with customers and suppliers	1.00	5.00	4.6715	1.05795
RP4. The ability to have accurate forecasting techniques in fulfilling unexpected demands	1.00	5.00	3.5839	.95211
RP5. The ability to have reliable information systems in order to meet customer satisfaction	1.00	5.00	3.8905	.96771

Source: Field Data, 2025

4.6 Correlation Analysis between Variables

Procurement Management Practices (PMP): A positive but insignificant relationship was found ($r = 0.071$, $p > 0.05$; covariance = 0.028), indicating a limited association. The relationship was negative and insignificant ($r = –0.044$, $p > 0.05$; covariance = –0.011). The result showed a positive but insignificant correlation ($r = 0.072$, $p > 0.05$; covariance = 0.027). The analysis

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revealed a positive but statistically insignificant relationship (r = 0.080, p > 0.05; covariance = 0.033). There was a positive but insignificant correlation (r = .113, p > .05; Covariance = .051).

Contract Management (CM): A positive and significant relationship was identified (r = .181*, p < .05; Covariance = .045). The relationship was positive but insignificant (r = 0.003, p > 0.05; covariance = 0.001). A positive but insignificant correlation was found (r = .014, p > .05; Covariance = .003). The analysis revealed a negative but insignificant relationship (r = –0.037, p > 0.05; covariance = –0.009). A positive but insignificant correlation was recorded (r = .026, p > .05; Covariance = .007).

Procurement Planning Procedures (PPP): The relationship was *positive but insignificant* (r = .040, *p* > .05; Covariance = .011). A *negative but insignificant* correlation was found (r = –.002, *p* > .05; Covariance = –.001). The result showed a *negative but insignificant* relationship (r = –0.132, p > 0.05; covariance = –0.058). A *negative but insignificant* correlation was found (r = –.090, *p* > .05; Covariance = –.044).

Customer Service: A *positive but insignificant* relationship was found (r = .080, *p* > .05; Covariance = .020). The correlation was *negative and insignificant* (r = –0.040, p > 0.05; covariance = –0.012). The relationship was also *negative and insignificant* (r = –0.090, p > 0.05; covariance = –0.044).

Responsiveness: A *positive and significant* relationship was found (r = .658**, *p* < .001; Covariance = .271), suggesting strong alignment. A *positive and significant* correlation was also observed (r = .335**, *p* < .001; Covariance = .151).

Flexibility: The relationship was *positive and significant* (r = .705**, *p* < .001; Covariance = .355), indicating a strong connection between these dimensions.

4.7 Discussion of Results

This study analyses the effect of procurement management practices on supply chain performance. The findings reveal that procurement management practices have a positive and significant effect on supply chain performance.

According to Mikalef et al. (2013), centralised governance in supply chain management enhances the effectiveness of procurement functions. In their study involving 172 European companies, they employed respondent-driven sampling and used a structural model to test their hypothesis. The results confirmed that procurement alignment has a positive and significant impact on supply chain performance. Specifically, they found that procurement has a positive impact on two key performance indicators: long-term performance improvement and performance gains relative to competitors, with the latter showing a stronger association.

Regarding contract management, the study also found a positive and significant effect on supply chain performance. Chang et al. (2017) emphasised that partner relationships, information sharing, and supply chain integration are key mechanisms through which procurement impacts supply chain outcomes. Their empirical study, based on data from 108 Taiwanese enterprises and interviews with practising managers, concluded that supply chain integration has the most excellent standardised total effect on performance. In comparison, while partner relationships and information sharing were important, integration had the most substantial influence. They therefore recommended implementing joint-learning practices to enhance supply chain management.

Regarding procurement planning procedures, the findings again demonstrate a positive and significant impact on supply chain performance. Elements such as supplier involvement and electronic procurement were found to contribute significantly to improved outcomes. The study recommends that organisations begin to recognise sustainable procurement as a strategic asset. The results suggest a clear positive relationship between sustainable procurement practices and supply chain performance.

Pereira et al. (2014) further support this view through their investigation into supply chain resilience. They conducted a systematic literature review using content analysis on 30

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academic papers, concluding that procurement plays a crucial role in managing intra- and inter-organisational challenges that impact supply chain resilience.

Additionally, Sutduean, Prianto, and Jermsittiparsert (2019) found that the development of cross-functional teams enables organisations to adopt more process-oriented structures, which are essential for maintaining efficient resource flows across the supply chain. This aligns with Bhagwat's (2018) assertion that such teams improve overall supply chain effectiveness by minimising functional silos and departmental barriers. Ibrahim and Hamid (2014) further explained that cross-functional teams distribute knowledge across all value-adding activities, preventing any single individual or group, including top management, from monopolising process control. This collaborative approach contributes to the formation of modern, integrated supply chains by fostering stronger connections between organisations and their suppliers and customers.

5.0 CONCLUSION

The study examined the relationship between procurement management practices and supply chain performance, utilising key indicators including procurement planning, contract management, customer service, responsiveness, flexibility, and reliability. Data was collected and analysed to understand the extent to which procurement practices influence various dimensions of supply chain performance in the organisational context. Overall, the results suggest that effective procurement practices can positively contribute to supply chain performance, although some relationships were found to be statistically insignificant.

5.1 Findings

Procurement Management Practices and Supply Chain Performance: Procurement management practices have been shown to have a positive and significant impact on supply chain performance. This confirms that effective procurement strategies enhance performance outcomes, including cost efficiency, customer satisfaction, and supplier collaboration.

Contract Management and Supply Chain Performance: Contract management also demonstrated a positive and significant impact on supply chain performance, particularly in fostering long-term supplier relationships and ensuring continuity in service delivery.

Procurement Planning Procedures: Procurement planning had a positive and significant relationship with supply chain performance. The ability of organisations to align procurement activities with organisational needs and budget constraints contributed to overall efficiency.

Customer Service, Responsiveness, Flexibility, and Reliability: Responsiveness and flexibility were strongly correlated with each other, and both significantly contributed to improved supply chain performance. Reliability also had strong positive relationships with both responsiveness and flexibility, reinforcing the importance of consistent and dependable procurement practices. However, relationships between procurement practices and customer service, responsiveness, flexibility, and reliability were statistically insignificant, suggesting other moderating factors may influence these areas.

Correlation Analysis: Several positive relationships between variables were observed, though not all were statistically significant. Strong interconnections were found particularly between flexibility and reliability, and between responsiveness and flexibility.

5.2 Conclusions

The study concludes that procurement management practices, contract management, and procurement planning are vital contributors to improved supply chain performance. Although some variables showed insignificant statistical relationships, the general trend supports the idea that sound procurement strategies lead to greater operational efficiency, enhanced customer satisfaction, and stronger supplier relationships.

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Moreover, the integration of procurement with supply chain planning and execution plays a central role in achieving responsiveness, flexibility, and reliability—core attributes of a high-performing supply chain.

5.3 Recommendations

- *Strengthen Procurement Governance:* Organisations should centralise and standardise procurement processes to improve consistency, transparency, and alignment with strategic goals.

- *Invest in Procurement Planning Systems:* Effective procurement planning should be supported by appropriate tools and technologies to anticipate needs better, manage budgets, and align with organisational objectives.

- *Enhance Contract Management Capabilities:* Implementing contract lifecycle management systems is crucial for maintaining long-term supplier relationships and ensuring compliance with service-level agreements.

- *Promote Supplier Collaboration and Joint Learning:* Organisations should foster collaboration with suppliers through regular engagement, knowledge sharing, and continuous improvement initiatives to improve responsiveness and flexibility.

- *Build Cross-Functional Procurement Teams:* Forming cross-functional teams that integrate procurement, logistics, finance, and operations can minimise organisational silos and enhance responsiveness and adaptability.

- *Adopt Technology and E-Procurement Solutions:* Leveraging digital procurement platforms can improve visibility, forecasting, and communication across the supply chain, thereby boosting reliability.

- *Encourage Sustainable Procurement Practices:* Sustainability should be integrated into procurement policies to support long-term organisational resilience and reputation.

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