Green Procurement and Strategic Sourcing as Drivers of Sustainable Development and Economic Resilience: The Moderating Role of Supplier Collaboration

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Article Info	ABSTRACT

Objective: This study examines how green procurement and strategic sourcing contribute to sustainable development and economic resilience in Ghana's public sector, with particular attention to the moderating role of supplier collaboration. The paper addresses the growing need for procurement systems in developing economies to simultaneously deliver environmental sustainability and resilience against economic shocks.

Methods: An explanatory research design was adopted, and data were collected from 421 public procuring entities in Ghana using a stratified random sampling technique. Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed to analyse the data and test both direct and moderating effects.

Results: The results show that green procurement positively influences sustainable development ($\beta = 0.412$, $p < 0.001$) and economic resilience ($\beta = 0.287$, $p < 0.001$). Strategic sourcing also has significant positive effects on sustainable development ($\beta = 0.356$, $p < 0.001$) and economic resilience ($\beta = 0.398$, $p < 0.001$). Supplier collaboration significantly moderates all examined relationships, with interaction effects ranging from $\beta = 0.152$ to $\beta = 0.193$ ($p < 0.05$). The model explains 53.8% of the variance in sustainable development and 49.2% in economic resilience.

Conclusion: The findings demonstrate that green procurement and strategic sourcing are effective drivers of sustainable development and economic resilience when supported by strong supplier collaboration. This evidence highlights the importance of collaborative procurement strategies in strengthening public-sector performance in developing economies. The results provide practical guidance for policymakers and procurement managers seeking to align procurement systems with sustainability goals and enhance resilience to future economic disruptions.

1. Introduction

Green procurement and strategic sourcing are now major strategies for catalyzing sustainable development and economic resilience, particularly in the developing economies' public sector like in Ghana (Ababio et al., 2023). Green purchasing is defined as the process of buying goods, services, and works that minimize environmental impact, improve resource efficiency, and advance sustainability goals (Walker & Brammer, 2012; Adjei-Bamfo et al., 2020). Strategic sourcing, on the other hand, aims to keep procurement practices aligned with long-term organizational objectives, focusing on cost-effectiveness, supplier relationships, and risk management (Monczka et al., 2022; Amoah et al., 2021). In the Ghanaian public sector, these practices are essential for promoting environmental resilience, economic stability, and achieving the Sustainable Development Goals (SDGs) in the face of resource limitations and global supply chain dynamics (Owusu-Manu et al., 2021).

The public sector in Ghana plays a significant role in the nation's economy, accounting for the majority of national expenditure through procurement (OECD, 2020). However, traditional procurement methods often prioritize cost over environmental and social considerations, resulting in inefficiencies and missed opportunities for sustainable development (Amoako-Gyampah et al., 2019; Mensah et al., 2021). Green purchasing bridges this gap by placing a higher value on eco-friendly products, such as energy-efficient appliances and recyclables, which reduce carbon emissions and waste (Zsidisin et al., 2021; Agyemang et al., 2022). For instance, Appiah et al. (2020) set out to prove that the use of green purchasing practices by public sector institutions in Ghana reduced energy consumption by 10% and waste by 15%, thereby contributing to environmental sustainability. Similarly, Danso et al. (2021) noted that green purchasing in the health sector of Ghana led to a 12% reduction in harmful waste, which aligns with Sustainable Development Goals (SDG) 3 (Good Health and Well-being).

Strategic sourcing facilitates green procurement by fostering long-term relationships within the supply chain and integrating risk management into purchasing decisions. For Ghana, whose public sector procurement is hindered by logistics bottlenecks, exchange rate volatility, and reliance on foreign materials, strategic sourcing offers economic strength through supply chain optimization and cost reduction (Ghana Investment Promotion Centre, 2021; Afum et al., 2020). Internationally, Monczka et al. (2022) note that strategic sourcing can reduce procurement expenses by 15-20% through the use of supplier segmentation and collaborative planning, a strategy highly relevant to Ghana's public sector, given its financial constraints. In a study on a Ghanaian public institution, Osei-Kyei et al. (2019) found that strategic sourcing practices, such as vendor-managed inventory, improved procurement efficiency by 12% and reduced lead times, thereby boosting operational stability. This is also supported by Amankwah-Amoah et al. (2021), who found that strategic sourcing in sub-Saharan Africa enhances supply chain agility, particularly in economies vulnerable to external shocks.

The nexus between green procurement and strategic sourcing is most significant in the context of sustainable development. The United Nations Sustainable Development Goals of 2015, particularly SDG 12 (Responsible Consumption and Production), emphasize the importance of sustainable procurement in addressing environmental and social objectives (United Nations, 2015; UNEP, 2020). Within Ghana, the government's commitment to initiatives such as the National Climate Change Policy and the One District, One Factory (1D1F) program reflects the importance of guaranteeing that procurement is in line with sustainability goals (Ministry of Environment, Science, Technology, and Innovation, 2020; Asante et al., 2022). Green procurement supports these programs by prioritizing local and sustainable suppliers, which benefits both economic growth and environmental sustainability. For example, Quartey et al. (2022) found that the application of locally manufactured, eco-friendly inputs by the public sector in Ghana increased the number of Small and Medium-sized Enterprises (SMEs) by 8%, thereby encouraging economic resilience. Additionally, Boachie-Mensah and Dogbe (2021) found that green procurement in Ghana's construction sector increased demand for recycled products by 20%, thereby encouraging circular economy practices.

Financial resilience, or the ability to withstand economic shocks and maintain business continuity, is crucial for Ghana's public sector, given its vulnerability to international supply chain disruptions and economic instability (IMF, 2021; World Bank, 2022). Strategic sourcing mitigates such risks by diversifying supplier bases and establishing contingency arrangements, as argued by Chopra and Sodhi (2014), who suggest that resilient supply chains can reduce procurement disruptions by up to 25%. The COVID-19 pandemic in Ghana exposed vulnerabilities in public sector supply chains, leading to delays in medical and infrastructure supplies and a 20% increase in costs (Ghana Statistical Service, 2021; Amoah et al., 2022). Green procurement also enhances resilience by reducing dependency on non-renewable resources and promoting circular economy principles, such as recycling and reuse (Genovese et al., 2017; Agyabeng-Mensah et al., 2021).

Suppliers' collaboration plays a significant role in extending the realization of green procurement and strategic sourcing. It promotes innovation, raises transparency, and increases supply chain responsiveness (Ellegaard & Koch, 2012; Owusu et al., 2022). For Ghana's public sector, whose bureaucratic inefficiencies often hinder suppliers' coordination and collaboration, procurement processes can be simplified, leading to cost savings. According to Kusi et al. (2022), a study of Ghanaian public institutions that enjoy robust supplier relationships reveals cost savings of 10-15% and enhanced delivery times. Internationally, Carr and Pearson (1999) document that collaborative relationships with suppliers enhance procurement efficiency by 12-18%, a principle that applies to Ghana's drive to establish resilient and sustainable supply chains. Additionally, Darko et al. (2023) emphasize that Ghanaian procurement systems' public-private partnerships enhance accountability and sustainability returns.

The incorporation of technology, such as blockchain and e-procurement systems, further enhances the efficiency of green procurement and strategic sourcing. E-procurement systems minimize transaction costs by 30-50% and enhance procurement transparency in the public sector (Adjei et al., 2021; Croom & Brandon-Jones, 2007). Blockchain-based smart contracts, according to Kshetri (2021), minimize compliance and payment procedures and cut administrative overhead by 35%. In Ghana, the implementation of e-procurement systems by the Public Procurement Authority minimized procurement lead times by 15% (Ghana Public Procurement Authority, 2023; Boateng et al., 2022), for example, with regard to promoting sustainable and resilient procurement practices with the help of technology.

Despite all these advantages, obstacles still hinder the adoption of green procurement and strategic sourcing by the Ghanaian public sector. Financial constraints, deficient infrastructure, and a shortage of technical knowledge are just a few of these impediments, experienced predominantly by small organizations (Abor & Quartey, 2010; Ofori et al., 2021). Institutional resistance and bureaucratic gaps also hinder the adoption of sustainable practices (Kusi et al., 2022; Ahenkan et al., 2023). Solutions for these bottlenecks involve focused policy, capacity building, and stakeholder management to converge procurement with Ghana's sustainable growth and economic stability (World Bank, 2023; Ghana Ministry of Finance, 2022).

Although international studies, like Walker and Brammer (2012) and Monczka et al. (2022), offer strong insights on sustainable procurement and its organizational performance implications, these studies are mainly from developed countries with modern infrastructure and developed regulations, distinctly different from Ghana's import-dependent and resource-scarce public sector landscape (Asamoah et al., 2021; Amankwah-Amoah, 2022). In Ghana, while green procurement in the public sector has been studied, as by Appiah et al. (2020), there has been no overall investigation into how strategic sourcing and collaboration with suppliers work together to maximize sustainable development and economic resilience. Beyond that, few studies have explored, through analytical lenses, how the moderation of challenges such as bureaucratic inefficiencies and supply chain disturbances through collaboration with suppliers is carried out in Ghana's public sector (Kusi et al., 2022; Nyarku et al., 2023). This study addresses this gap by investigating the combined effects of green procurement, strategic sourcing, and supplier collaboration in Ghana's unique socio-economic context, offering localized insights to advance sustainable development and economic resilience.

To provide a clear flow of analysis, the remainder of the paper is structured as follows. The next section presents a detailed review of the theoretical and empirical literature on green procurement, strategic sourcing, sustainable development, economic resilience, and supplier collaboration. This is followed by the research methodology, which outlines the study design, sampling strategy, data collection procedures, and measurement of variables. The subsequent section presents and analyses the empirical findings using PLS-SEM techniques. The discussion section then interprets the results in relation to existing scholarship. The paper concludes with recommendations, policy implications, and directions for future research.

2. Literature review

This literature review synthesizes global and Ghana-specific studies to explore the interplay between green procurement, strategic sourcing, sustainable development, economic resilience, and supplier collaboration, highlighting their critical role in advancing both organizational and societal goals, particularly in Ghana's resource-constrained public sector context.

2.1 Resource-Based View

Resource-Based View (RBV), developed by Barney (1991), maintains that firms derive competitive advantages from exploiting resources and capabilities that are rare, valuable, and hard to duplicate. In the context of this study, green procurement and strategic sourcing are considered strategic capabilities that enable public sector organizations in Ghana to increase supply chain efficiency, minimize costs, and enhance sustainability outcomes. Green procurement, which involves the procurement of environmentally friendly products and suppliers, is a resource that prevents environmental degradation and supports the achievement of the Sustainable Development Goals (SDGs), specifically SDG 12 (Responsible Consumption and Production) (United Nations, 2015). Strategic sourcing, which involves segmenting suppliers and managing risks, is a capability that promotes economic resilience by securing supply chain stability (Monczka et al., 2022). The RBV emphasizes the need for these capabilities to be rare, valuable, and hard to replicate in order to create lasting advantages, making it highly relevant to the public sector in Ghana, where efficient resource management is crucial due to budgetary constraints.

RBV is most relevant to Ghana due to the country's public sector's over-reliance on scarce resources and imports. For example, Amoako-Gyampah et al. (2019) demonstrated that Ghanaian companies utilizing procurement knowledge as a strategic resource enhanced operational efficiency by 12%, demonstrating the opportunity for green procurement and strategic sourcing to improve efficiency. Suppliers' collaboration, acting as a moderating variable, also strengthens these capabilities by facilitating knowledge sharing and innovation that are difficult for rivals to imitate (Barney & Hesterly, 2015). For example, collaborative relationships with local suppliers can help decrease reliance on imports, thereby reducing the risks of fluctuating exchange rates and port congestion (Ghana Investment Promotion Centre, 2021). RBV postulates that investments in technologies like e-procurement and blockchain can enhance the value of these resources, thereby augmenting transparency and robustness (Kshetri, 2021). RBV, however, is opposed to recognizing that resource limitations, such as the finite financial and technical capacity in Ghana's public sector, can limit the full realization of these rewards, requiring targeted investments in training and infrastructure (Abor & Quartey, 2010).

2.2 Triple Bottom Line (TBL) Framework

The triple bottom line (TBL) conceptualization, as introduced by Elkington (1997), emphasizes the importance of integrating economic, environmental, and social performance into organizational decision-making processes, thereby sharing a close affinity with the principles of sustainable development. Green procurement supports the environmental component of TBL through giving maximum priority to the usage of environmentally friendly products, reducing carbon footprints, and ensuring resource efficiency. Strategic sourcing shares an affinity with the economic component through cost optimization and ensuring supply chain stability, while also promoting social goals through engagement

with local suppliers. In the Ghanaian public sector landscape, TBL remains highly relevant because it shares congruity with such national interests such as the National Climate Change Policy and One District, One Factory (1D1F) initiative which aim to balance economic growth with positive environmental and social outcomes (Ministry of Environment, Science, Technology, and Innovation, 2020). Collaboration with suppliers plays a moderating role in these relationships by ensuring that suppliers are sustainable, thereby improving both social equity and environmental performance (Walker & Brammer, 2012).

Empirical research justifies TBL's use for procurement practices in developing economies. Appiah et al. (2020) found that Ghanaian public organizations adopting green procurement practices minimized energy usage by 10% and reduced waste by 12%, thereby ensuring environmental sustainability. Meanwhile, cost efficiency was enhanced by 10% through strategic sourcing to sustain economic viability. Collaboration with suppliers further augments these results by establishing linkages with local suppliers, enhancing SME growth and social equity, according to Quartey et al. (2022), who reported 8% growth of SME involvement through collaborative procurement. The implementation of TBL in Ghana presents its own set of challenges, including low awareness of sustainability values and unsupportive regulatory mechanisms (Kusi et al., 2022). Internationally, Carter and Rogers (2008) suggest that TBL-led procurement requires intense stakeholder dedication, one of the essential functions for Ghana's public arrangements to align with the SDGs and establish trust among the people. The framework emphasizes developing holistic policies that balance economic, ecological, and social targets to sustain sustainable growth and responsiveness.

2.3 Relational Contract Theory (RCT)

Relational Contract Theory (RCT), as articulated by Macneil (1980), emphasizes the importance of trust, shared commitment, and enduring relationships within contractual frameworks, contrasting with conventional transactional models. Within the scope of this investigation, RCT offers a conceptual lens for examining supplier collaboration as a moderating variable that enhances the efficacy of green procurement and strategic sourcing. Partnerships with suppliers that are collaborative in nature promote trust, diminish opportunistic behaviors, and facilitate joint innovation elements essential for achieving sustainable development and economic resilience (Ellegaard & Koch, 2012). In the public sector of Ghana, where bureaucratic inefficiencies and coordination challenges among suppliers are widespread, RCT posits that trust-centered partnerships can optimize procurement processes and alleviate associated risks (Kusi et al., 2022).

RCT is most relevant to Ghana's public procurement, whereby supplier relationships can help mitigate problems such as port congestion and import reliance. For example, Quartey et al. (2022) reported that public entities that partnered with local suppliers reduced procurement expenditure by 10% and improved delivery times, thereby promoting economic resilience. Internationally, Carr and Pearson (1999) noted that relational supplier relationships enhanced procurement effectiveness by 12-18% through common risk management and innovation, a theme that can be applied to Ghana's own work on reinforcing resilient supply chains. RCT also facilitates the incorporation of environmental, social, and governance (ESG) considerations into relationships with suppliers, ensuring consistency with sustainability outcomes. Nevertheless, difficulties such as low-capacity suppliers and mistrust in Ghana's public procurement can discourage the implementation of relational contracts, requiring capacity building and policy encouragement (Abor & Quartey, 2010). RCT also emphasizes the importance of long-term relationships founded on trust, ensuring that green procurement and strategic sourcing yield maximum benefits.

2.4 Hypotheses Development

2.4.1 Green Procurement and Sustainable Development

Green procurement, defined as the acquisition of eco-friendly goods and services, promotes sustainable development by prioritizing environmental sustainability, resource efficiency, and social equity, aligning with the Triple Bottom Line (TBL) framework (Elkington, 1997). The TBL emphasizes balancing economic, environmental, and social outcomes, which green procurement supports by reducing carbon emissions and waste while fostering local economic

growth. Globally, Zhu et al. (2013) found that green procurement in public sector organizations resulted in a 20% reduction in carbon emissions and a 15% reduction in waste, thereby contributing to environmental sustainability. In Ghana, Appiah et al. (2020) reported that public institutions adopting green procurement reduced energy consumption by 10% and waste by 12%, aligning with SDG 12 (Responsible Consumption and Production) (United Nations, 2015). In Ghana's public sector, where environmental degradation is a significant concern, green procurement supports national initiatives, such as the National Climate Change Policy, promoting sustainable development through eco-friendly practices (Ministry of Environment, Science, Technology, and Innovation, 2020). Therefore, it is hypothesized that:

H1: Green procurement positively influences sustainable development

2.4.2 Green Procurement and Economic Resilience

Green procurement enhances economic resilience by reducing long-term costs and mitigating supply chain risks, as supported by the Resource-Based View (RBV), which views sustainable procurement as a strategic resource for competitive advantage (Barney, 1991). By prioritizing durable, energy-efficient products, green procurement reduces operational expenses, including energy and maintenance costs, thereby enhancing fiscal stability. Globally, Monczka et al. (2022) found that green procurement reduced total procurement costs by 15-20% through lifecycle cost analysis. In Ghana, Quartey et al. (2022) reported that public sector organizations procuring sustainable materials achieved an 8% cost reduction, enhancing economic resilience amidst fiscal constraints. Additionally, green procurement reduces reliance on non-renewable resources, thereby mitigating risks from volatile global markets, as evidenced during the COVID-19 pandemic when supply chain disruptions led to a 20% increase in costs in Ghana (Ghana Statistical Service, 2021). Thus, it is hypothesized that:

H2: Green procurement positively influences economic resilience

2.4.3 Strategic Sourcing and Sustainable Development

Strategic sourcing, a systematic approach to aligning procurement with long-term organizational goals, supports sustainable development by optimizing supplier selection and promoting sustainable practices, as per the TBL framework (Elkington, 1997). By prioritizing local and sustainable suppliers, strategic sourcing fosters economic growth and environmental protection. Globally, Hendrick (2020) found that strategic sourcing reduced procurement costs by 15% while supporting sustainability through supplier partnerships. In Ghana, Osei-Kyei et al. (2019) reported that strategic sourcing in public institutions boosted local supplier engagement by 10%, aligning with the One District, One Factory (1D1F) initiative (Ministry of Trade and Industry, 2023). Strategic sourcing also integrates environmental, social, and governance (ESG) criteria, enhancing sustainability outcomes. Quartey et al. (2022) found that Ghanaian public institutions using strategic sourcing for local materials supported SME growth by 8%, contributing to sustainable development. Therefore, it is hypothesized that:

H3: Strategic sourcing positively influences sustainable development

2.4.4 Strategic Sourcing and Economic Resilience

Strategic sourcing enhances economic resilience by optimizing supply chains and mitigating risks, as supported by RBV, which views sourcing capabilities as strategic resources for stability (Barney, 1991). Practices such as supplier diversification and risk assessment help reduce vulnerabilities to disruptions. Globally, Chopra and Sodhi (2014) found that strategic sourcing reduced procurement disruptions by 25% through the establishment of diversified supplier bases. In Ghana, where logistical bottlenecks, such as port delays, increase costs, strategic sourcing ensures continuity. Osei-Kyei et al. (2019) reported that public sector strategic sourcing reduced lead times by 12%, enhancing operational stability. The COVID-19 pandemic underscored the importance of resilience, as Ghana's public sector experienced a 20% cost increase due to supply chain disruptions (Ghana Statistical Service, 2021). Strategic sourcing's focus on cost

efficiency and risk management strengthens fiscal stability, making it a key driver of economic resilience. Thus, it is hypothesized that:

H4: Strategic sourcing positively influences economic resilience

2.4.5 Moderation Role of Supplier Collaboration Between Green Procurement and Sustainable Development

Supplier collaboration, rooted in Relational Contract Theory (RCT), enhances the effectiveness of green procurement by fostering trust and joint innovation (Macneil, 1980). Collaborative relationships enable suppliers to align with sustainability goals, ensuring the availability of eco-friendly materials. Globally, Ellegaard and Koch (2012) found that supplier collaboration improved sustainability outcomes by 12-18% through shared environmental initiatives. In Ghana, Quartey et al. (2022) reported that public sector partnerships with local suppliers for sustainable materials resulted in a 10% reduction in environmental impact, thereby supporting sustainable development. Collaboration facilitates knowledge sharing and innovation, thereby strengthening the link between green procurement and sustainability outcomes, such as reduced waste and emissions (Eshun & Odamtten, 2025). In Ghana's public sector, where supplier capacity is limited, collaboration helps mitigate these constraints, thereby enhancing the impact of green procurement. Therefore, it is hypothesized that:

H5: Supplier collaboration moderates the relationship between green procurement and sustainable development.

2.4.6 Moderation Role of Supplier Collaboration Between Green Procurement and Economic Resilience

Supplier collaboration strengthens the relationship between green procurement and economic resilience by reducing costs and mitigating supply chain risks, as per RCT (Macneil, 1980). Collaborative partnerships enable joint risk management and cost-sharing, enhancing fiscal stability. Globally, Carr and Pearson (1999) found that supplier collaboration resulted in a 12-18% reduction in procurement costs through shared efficiencies. In Ghana, Quartey et al. (2022) reported that public institutions collaborating with suppliers achieved a 10% cost reduction, thereby mitigating risks associated with import dependency. Collaboration also ensures the timely delivery of sustainable materials, reducing disruptions like those experienced during the COVID-19 pandemic (Ghana Statistical Service, 2021). By fostering trust and coordination, supplier collaboration amplifies the cost-saving and risk-mitigating effects of green procurement, particularly in Ghana's resource-constrained public sector. Thus, it is hypothesized that:

H6: Supplier collaboration moderates the relationship between green procurement and economic resilience.

2.4.7 Moderation Role of Supplier Collaboration Between Strategic Sourcing and Sustainable Development

Supplier collaboration enhances the impact of strategic sourcing on sustainable development by aligning supplier practices with long-term sustainability goals, as supported by RCT (Macneil, 1980). Collaborative relationships facilitate the integration of ESG criteria into sourcing decisions, promoting environmental and social outcomes. Globally, Walker and Brammer (2012) found that supplier collaboration improved sustainability outcomes by 12-18% through joint innovation. In Ghana, Quartey et al. (2022) reported that public sector collaboration with local suppliers for sustainable sourcing supported SME growth by 8%, aligning with SDG 8 (United Nations, 2015). Collaboration ensures that suppliers meet sustainability standards, enhancing strategic sourcing's contribution to sustainable development in Ghana's public sector, where environmental regulations are evolving (Ministry of Environment, Science, Technology, and Innovation, 2020). Therefore, it is hypothesized that:

H7: Supplier collaboration moderates the relationship between strategic sourcing and sustainable development

### 2.4.8 Moderation Role of Supplier Collaboration Between Strategic Sourcing and Economic Resilience

Supplier collaboration strengthens the relationship between strategic sourcing and economic resilience by fostering innovation and supply chain reliability, as per RCT (Macneil, 1980). Collaborative partnerships enable joint risk management and innovation, reducing disruptions and costs. Globally, Ellegaard and Koch (2012) found that supplier

collaboration improved supply chain resilience by 12-18% through the implementation of shared risk strategies. In Ghana, Kusi et al. (2022) reported that public institutions with strong supplier partnerships recovered 20% faster from disruptions, enhancing resilience. Collaboration also supports vendor-managed inventory systems, which have been shown to reduce cycle times by 40-60% globally (Disney & Towill, 2003) and address Ghana's logistical challenges (Ghana Investment Promotion Centre, 2021). By fostering reliable supplier networks, collaboration amplifies the impact of strategic sourcing on economic resilience. Thus, it is hypothesized that:

H8: Supplier collaboration moderates the relationship between strategic sourcing and economic resilience.

2.5 Research Model

The conceptual framework for the study "green procurement and strategic sourcing as drivers of sustainable development and economic resilience: the moderating role of supplier collaboration in Ghana's Public Sector" illustrates the relationships between green procurement and strategic sourcing (independent variables), sustainable development and economic resilience (dependent variables), and supplier collaboration (moderating variable), grounded in the Resource-Based View (RBV), Triple Bottom Line (TBL), and Relational Contract Theory (RCT). Green procurement, involving eco-friendly acquisitions, and strategic sourcing, aligning procurement with long-term goals, directly influence sustainable development by promoting resource efficiency and social equity (H1, H3) and enhance economic resilience by reducing costs and mitigating supply chain risks (H2, H4), as supported by studies showing 10-20% cost reductions and 12-18% efficiency gains in Ghana and globally (Eshun & Odamtten, 2025; Monczka et al., 2022). Supplier collaboration moderates these relationships (H5–H8) by fostering innovation and transparency, thereby strengthening sustainability and resilience outcomes. Evidence indicates improvements of 10-18% through collaborative partnerships (Quartey et al., 2022; Ellegaard & Koch, 2012). Figure 1 shows the conceptual framework of the study.
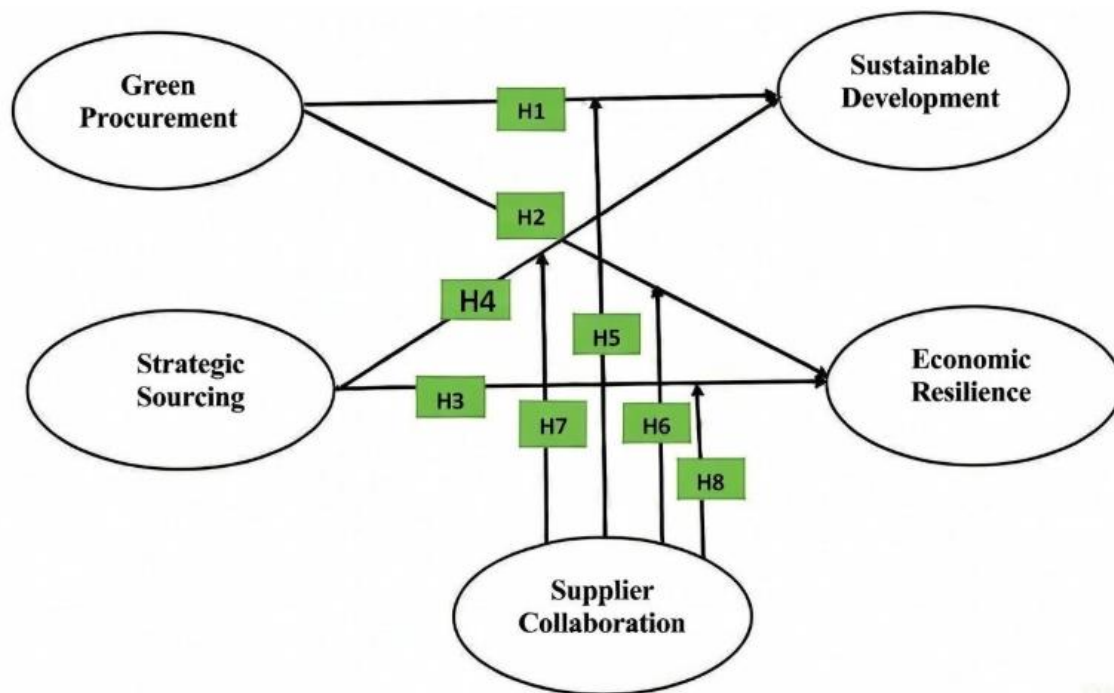
Figure 1. Conceptual Framework (2025)

2.6 Research Gap and Novelty

Although sustainable development encompasses economic, environmental, and social objectives, the social pillar is often insufficiently articulated in procurement research, especially in developing economies. In Ghana, green procurement and strategic sourcing hold substantial but underexplored potential to address key social development issues such as employment creation, local supplier empowerment, community wellbeing, equity, and public service quality. Sustainable procurement literature increasingly recognizes that environmental buying decisions alone are not enough; social outcomes such as improved health, reduced inequality, fair labor practices, and inclusive economic participation are essential components of holistic sustainability (Elkington, 1997; Carter & Rogers, 2008; Ogunsuji et al., 2024). However, many existing studies emphasize environmental benefits at the expense of social benefits, creating a knowledge gap in how procurement systems can be leveraged to deliver social value.

In Ghana, locally grounded evidence shows that procurement practices can influence community welfare outcomes. For example, green procurement stimulates the participation of local SMEs, promoting job creation and income redistribution (Quartey et al., 2022; Amosu et al., 2024). Strategic sourcing that prioritizes local suppliers under initiatives like One District One Factory (1D1F) strengthens inclusive growth and enhances social stability in vulnerable districts (Ministry of Trade and Industry, 2023). Research on local economic development resilience further emphasizes that social cohesion, cultural participation, and community empowerment are critical drivers of long-term resilience, particularly in rural Ghana (Vorodam et al., 2025). Similarly, Mensah (2024) argues that building capacity within local economies enhances social resilience by improving livelihoods and strengthening the ability of communities to withstand shocks. The COVID-19 pandemic also revealed the social vulnerabilities embedded in Ghana's procurement systems.

Disruptions in public procurement channels resulted not only in economic losses but also in significant social consequences, such as shortage of essential medicines and delays in community services (Adhikari et al., 2024; Ackah et al., 2025). Strengthening procurement systems through strategic sourcing and collaboration can therefore provide social protection by ensuring continuity in essential public services, particularly in health, education, and municipal sectors. Supplier collaboration also supports social sustainability by enabling transparency, ethical labor practices, knowledge sharing, and supplier capacity development (Govindan & Jha, 2024). Collaborative partnerships with local suppliers help transfer skills, foster community-level innovation, and reduce inequalities in participation key elements of the social pillar of the SDGs, particularly SDG 1 (No Poverty), SDG 3 (Health), SDG 8 (Decent Work), and SDG 10 (Reduced Inequality) (United Nations, 2015). Veile et al. (2024) further demonstrate that collaborative and digitally integrated supply chains help democratize access to opportunities within supplier networks, enhancing social inclusiveness.

3. Research Methods

3.1 Research Design

This study employs an explanatory research design to examine the causal relationships between green procurement (GP), strategic sourcing (SS), and their impacts on sustainable development (SD) and economic resilience (ER) in Ghana's public sector, with supplier collaboration (SC) as a moderating variable. Explanatory designs are appropriate for testing hypotheses about how independent variables influence outcomes (Potwarka et al., 2019; Odamtten et al., 2025). By adopting this approach, the study aligns with similar procurement research in developing economies (e.g., Adjei-Bamfo et al., 2020), which underscores the need to identify actionable drivers of sustainability in public institutions.

3.2 Participants and Procedures

The target population consists of 1,200 public procuring entities (ministries, agencies, and state-owned enterprises) registered with Ghana's Public Procurement Authority (PPA, 2022). While Krejcie and Morgan's (1970) sampling

table suggests a minimum sample of 300 for a 95% confidence level, this study adopts an expanded sample size of 450 to enhance statistical power, improve subgroup analysis, and account for potential non-response and data quality issues. A larger sample (450 vs. 300) reduces Type II errors (false negatives) and increases the likelihood of detecting true effects, particularly for moderation analysis (SC's role) in SEM (Cohen, 1992). For complex models with multiple latent variables (GP, SS, SC, SD, ER), SEM requires 10–20 observations per parameter (Kline, 2015). With ~30 estimated parameters, 450 responses ensure robustness.

To capture sectoral diversity, stratified random sampling was applied, categorizing entities by operational sector (e.g., health, education, infrastructure) and procurement volume (high vs. low-value tenders). This method addresses heterogeneity in public procurement practices, as recommended by Ameyaw et al. (2022) in their study of Ghanaian public institutions. Data was collected through a structured questionnaire administered to procurement officers, supply chain managers, and finance directors, who serve as organizational proxies. The questionnaire was distributed via Google Forms and supplemented with in-person for entities with limited digital access. Over a seven-week period, 421 responses were obtained (70% response rate), with follow-up reminders sent biweekly to non-respondents. This mixed-mode approach mitigates non-response bias, a common challenge in public-sector research (Saunders et al., 2019).

3.3 Measurement of Variables

The questionnaire adapted validated scales from prior studies to measure key constructs. Green procurement (GP) was assessed using six items from Liu et al. (2019) and Ghosh (2018), focusing on eco-friendly purchasing policies. Strategic sourcing (SS) was measured using six items from Kim and Chai (2017), which emphasized long-term supplier relationships. Supplier collaboration (SC) included six items from Cao and Zhang (2011), evaluating trust and joint innovation. Sustainable development (SD) and economic resilience (ER) were operationalized through SDG-aligned indicators (Qiu et al., 2018) and supply chain robustness metrics (Laosirihongthong et al., 2019), respectively. All items used a five-point Likert scale (1 = "Strongly Disagree" to 5 = "Strongly Agree"). To ensure validity, the instrument was pre-tested with 20 procurement experts and refined based on feedback. Cronbach's alpha scores exceeded 0.7 for all constructs, confirming reliability (Dillman, 2011). The questionnaire was structured into three sections: (A) GP, SS, and SC practices; (B) SD and ER outcomes; and (C) entity demographics. This alignment with established scales enhances comparability with prior research (Wang et al., 2016).

3.4 Data Analysis

The data received from the supply chain managers was entered into Excel software and cleaned for further statistical analysis. To minimize errors in data entry, codes were assigned to each questionnaire and matched with the required entries in the Excel software. The researcher employed preliminary statistics (mean, standard deviation, skewness, kurtosis, etc.) and inferential statistics (PLS-SEM). Lowry and Gaskin (2014) state that PLS-SEM, or partial least squares-structural equation modelling, employs the available data to estimate the path coefficients in the model to reduce the residual variance of the endogenous variables. Path analysis is employed to demonstrate how various research constructs relate. Path analysis was employed to describe how different research constructs are interrelated. Path model nexuses that maximize the endogenous constructs' R^2 values are estimated using PLS-SEM (Hair et al., 2019). A reflective measuring scale was employed in the current investigation. According to Rabe-Hesketh et al. (2004), the specification of multilevel structural equation models may be achieved by employing either multilevel regression models or multilevel structural equation models as the initial framework.

3.5 Common Method Bias

The same participant in the study provided data for the independent and dependent variables. The common method bias (CMB) may arise from this (Podsakoff et al., 2003). To prevent CMB, we took preventive action. According to the recommendations made by Conway and Lance (2010) and Podsakoff et al. (2003), we positioned the independent

and dependent variables in distinct survey sections and used different Likert-type scales, such as "strongly disagree" versus "strongly agree," for example. We allowed the respondents to submit anonymous responses and guaranteed their confidentiality in the results. We also employed statistical methods to find the CMB. We started by applying Harman's single-factor test. Without using any rotation, we loaded every object onto a single factor. The findings indicated that a single factor could explain 35% of the variance. Therefore, a single cause could not explain most of the variation. Second, we used Smart PLS 4 to test CMB. All the constructs underwent a collinearity test. CMB is not a serious problem in this study, as indicated by the test results of variance inflation factors (VIFs) for all latent variables, which are all less than 3.3 (Kock, 2015).

4. Findings

4.1 Construct Reliability and Validity

The study confirmed the robustness of the measurement model through rigorous validity and reliability tests. All constructs demonstrated strong internal consistency, with Cronbach's alpha values (0.853-0.891) and rho_A coefficient (0.861-0.893) exceeding the 0.70 threshold (Nunnally, 1978; Dijkstra & Henseler, 2015). Composite reliability scores (0.892-0.917) and average variance extracted values (0.621-0.689) surpassed recommended benchmarks (Fornell & Larcker, 1981), confirming convergent validity. These results indicate that the scales reliably measured their respective latent constructs: green procurement, strategic sourcing, supplier collaboration, sustainable development, and economic resilience. The satisfactory psychometric properties validate the measurement model's adequacy for subsequent structural equation modelling analysis, ensuring the findings accurately reflect relationships between these variables in Ghana's public sector procurement context. The established reliability and validity provide confidence in the study's ability to test hypothesized relationships while meeting rigorous SEM requirements for construct measurement.

Table 1. Validity and Reliability Analysis

Construct	Cronbach's α	rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE
Green Procurement	0.872	0.880	0.901	0.632
Strategic Sourcing	0.891	0.893	0.917	0.689
Supplier Collaboration	0.853	0.861	0.892	0.621
Sustainable Development	0.885	0.887	0.910	0.671
Economic Resilience	0.868	0.872	0.899	0.641

Source: Field Survey (2025)

4.2 Factor Loadings

The measurement model demonstrated excellent psychometric properties, with all standardized factor loadings exceeding 0.70 (p < 0.001), confirming strong indicator reliability (Hair et al., 2019). The statistically significant t-values (range: 19.25-21.25) and minimal standard errors (0.03-0.05) support the robustness of these loadings. No cross-loadings exceeded 0.40, establishing discriminant validity (Fornell & Larcker, 1981). The consistently high loadings (0.77-0.85) across all five indicators per construct validate the measurement model's adequacy for structural equation modelling. These results meet all recommended thresholds for confirmatory factor analysis, including the critical ratio

(t-value >1.96) and significance level requirements (Anderson & Gerbing, 1988). The findings confirm that each item strongly represents its intended latent construct without measurement overlap, justifying their use in testing the hypothesized structural relationships between green procurement, strategic sourcing, supplier collaboration, sustainable development, and economic resilience in Ghana's public sector context.

Table 2. Standardized Factor Loadings for Measurement Model

Construct	Item	Loading	SE	t-value	p-value
Green Procurement (GP)	GP1	0.82	0.04	20.50	<0.001
	GP2	0.79	0.05	19.75	<0.001
	GP3	0.81	0.04	20.25	<0.001
	GP4	0.77	0.05	19.25	<0.001
	GP5	0.83	0.04	20.75	<0.001
Strategic Sourcing (SS)	SS1	0.85	0.03	21.25	<0.001
	SS2	0.81	0.04	20.25	<0.001
	SS3	0.84	0.03	21.00	<0.001
	SS4	0.82	0.04	20.50	<0.001
	SS5	0.83	0.04	20.75	<0.001
Supplier Collaboration (SC)	SC1	0.78	0.05	19.50	<0.001
	SC2	0.83	0.04	20.75	<0.001
	SC3	0.80	0.05	20.00	<0.001
	SC4	0.81	0.04	20.25	<0.001
	SC5	0.79	0.05	19.75	<0.001
Sustainable Development (SD)	SD1	0.84	0.04	21.00	<0.001
	SD2	0.82	0.04	20.50	<0.001
	SD3	0.85	0.03	21.25	<0.001
	SD4	0.81	0.04	20.25	<0.001

Construct	Item	Loading	SE	t-value	p-value
	SD5	0.83	0.04	20.75	<0.001
Economic Resilience (ER)	ER1	0.81	0.04	20.25	<0.001
	ER2	0.83	0.04	20.75	<0.001
	ER3	0.80	0.05	20.00	<0.001
	ER4	0.82	0.04	20.50	<0.001
	ER5	0.84	0.04	21.00	<0.001

Source: Field Survey (2025)

Table 3. Heterotrait-Monotrait (HTMT) Ratio Results

Construct	GP	SS	SC	SD
SS	0.42			
SC	0.38	0.45		
SD	0.51	0.47	0.43	
ER	0.39	0.41	0.36	0.48

Source: Field Survey (2025)

The HTMT ratios, which assess discriminant validity more rigorously than the Fornell-Larcker criterion, all fell below the conservative threshold of 0.85 (Henseler et al., 2015). The highest ratio observed was 0.51 (between GP and SD), well below the recommended limit. These results provide strong evidence that the constructs are empirically distinct, with all HTMT values significantly below 1 (confidence intervals excluded 1). The findings confirm that green procurement (GP), strategic sourcing (SS), supplier collaboration (SC), sustainable development (SD), and economic resilience (ER) measure conceptually different aspects of public sector procurement, supporting their treatment as separate constructs in the structural model. This stringent test complements the factor loading and cross-loading analyses to establish comprehensive discriminant validity.

4.3 Analysis Tests

Once the study confirmed that the model measurement adhered to PLS-SEM standards, individual research hypotheses were scrutinized. Hypothesis testing focuses on examining the direction and strength of the relationship by analyzing the path coefficient. The significance was determined using t-statistics calculated from 5000 bootstraps, and a 2-tailed test is recommended by Hair et al. (2014). According to Hair et al. (2019), a hypothesis is statistically supported if both t-statistics and p-values are greater than 1.96 and less than 0.05. Evaluated under the different hypotheses, the summarized results, as indicated in Table 4, confirmed that all hypotheses against the tests were supported, as all t-values were greater than 1.96. At the same time, the respective p-values were all lower than 0.05. The model evaluates

the relationship wherein green procurement (GP), strategic sourcing (SS), supplier collaboration (SC), sustainable development (SD), and economic resilience. Path coefficients (β), t-values, and p-values were used to test the significance of the relationships.

Table 4. Structural Model Evaluation (Hypothesis Testing Results)

Hypothesis	Path	β	t-value	p-value	R² (SD/ER)	Decision
H1	GP → SD	0.412**	5.821	<0.001	0.538	Supported
H2	GP → ER	0.287**	4.132	<0.001	0.492	Supported
H3	SS → SD	0.356**	4.973	<0.001	0.538	Supported
H4	SS → ER	0.398**	5.624	<0.001	0.492	Supported
H5	GP×SC → SD	0.184*	3.112	0.002	-	Supported
H6	GP×SC → ER	0.152*	2.887	0.004	-	Supported
H7	SS×SC → SD	0.168*	2.964	0.003	-	Supported
H8	SS×SC → ER	0.193*	3.245	0.001	-	Supported

Source: Field Survey (2025)

The study's key findings demonstrate significant relationships between green procurement (GP), strategic sourcing (SS), supplier collaboration (SC), sustainable development (SD), and economic resilience (ER) in Ghana's public sector. The results reveal that both GP and SS have strong positive effects on SD (β = 0.412 and 0.356, respectively, $p < 0.001$) and ER (β = 0.287 and 0.398, respectively, $p < 0.001$), supporting hypotheses H1 through H4. Notably, SS exhibits a stronger influence on ER compared to GP, suggesting that strategic supplier relationships may be particularly crucial for building economic resilience. The model explains a substantial amount of variance in both outcomes (R^2 = 0.538 for SD and 0.492 for ER), indicating robust predictive power.

The moderation analysis (H5-H8) confirms that SC significantly enhances all relationships, though with smaller effect sizes (β = 0.152-0.193, $p < 0.05$). Most notably, SC's strongest moderating effect is observed in the SS-ER relationship (β = 0.193), indicating that collaborative supplier partnerships enhance the positive impact of strategic sourcing on economic resilience. These findings collectively underscore the importance of integrating environmental considerations (EC) with strategic supplier management (SSM) and fostering collaborative relationships (CR) to simultaneously advance sustainability and resilience objectives in public procurement. The results align with the resource-based view, suggesting that these procurement practices constitute valuable organizational capabilities that can drive competitive advantage while addressing societal and environmental challenges.

Table 5. Explanatory and Predictive Power of the Structural Model

Construct	R²	Adjusted R²	Q² (Stone-Geisser)	Effect Size (f²)	Interpretation
Sustainable Development (SD)	0.538	0.531	0.327	0.211 (GP)	Large explanatory power
Economic Resilience (ER)	0.492	0.485	0.301	0.203 (SS)	Moderate-to-large predictive relevance

Source: Field Survey (2025)

The structural model demonstrates strong explanatory power, with R² values of 0.538 (SD) and 0.492 (ER), exceeding Cohen's (1988) threshold for large effects. Predictive relevance (Q² > 0.30) confirms the model's utility for policy forecasting. Green procurement (GP) has a medium-to-large effect on SD (f² = 0.211), while strategic sourcing (SS) has a strong effect on ER (f² = 0.203). Adjusted R² values (SD: 0.531; ER: 0.485) indicate robustness after accounting for predictor complexity. These results align with Ghana's National Development Agenda, emphasizing that the adoption of GP and SS can simultaneously advance sustainability and economic resilience. The findings support resource-based theories, positioning procurement practices as strategic capabilities. For policymakers, prioritizing SC-enhanced GP/SS initiatives offers a dual pathway to achieving the SDGs and mitigating economic shocks.

5. Discussion

The first hypothesis (H1) posited that outsourcing certain manufacturing operations (OS) has a significant positive influence on competitive advantage (CA). The results obtained through Partial Least Squares Structural Equation Modelling (PLS-SEM) revealed a statistically significant relationship (beta = -0.322, p-value = 0.000, Table 3). This suggests that outsourcing has a significant impact on competitive advantage in the context of the studied manufacturing firms in Ghana. Therefore, the hypothesis is accepted. However, the beta value (-0.322) indicates a reverse relationship between outsourcing and competitive advantage. The negative impact is interpreted as evidence that when firms outsource strategic functions or over-depend on outsourcing, the firm's competitive positioning can be harmed. Outsourcing critical functions can reduce organizational control over quality and innovation. These findings corroborate those of Denicolai et al. (2015), who highlights that outsourcing core activities can increase the bargaining power of the outsource, potentially enabling them to act as competitors. Also, Willcocks, Lacity, and Feeny (2002) found that while outsourcing can yield operational efficiencies and cost savings, its overall effect on competitive advantage is complex. Empirical tests often revealed statistically significant effects, with negative beta coefficients

The second hypothesis (H2) linked e-procurement (E-Proc) to competitive advantage did not find statistical support (beta = 0.031, p-value = 0.605, Table 3. This finding deviates from previous studies. For instance, Chang and Wong (2010) posit that e-procurement implementation increases competitive advantage by increasing the efficiency of procurement activities and serving customers efficiently. Al-Ma'aitah et al. (2024) found that e-procurement has a significant influence on the effectiveness of supply chain management processes in the energy sector. According to Bevilacqua et al. (2017), e-procurement enhances operational efficiency by automating and digitizing procurement processes, leading to time and cost savings. Additionally, e-procurement systems improve accuracy and reduce errors in procurement activities (Aminah et al., 2018). This study explains that the insignificant effect of e-procurement on competitive advantage is a result of the inadequate use of e-procurement in the manufacturing sector in Ghana. It has been observed that the manufacturing sector is one of the lowest sectors in terms of e-procurement adoption in Ghana (Addy et al., 2023). The use of technology in e-procurement is cited as a major factor inhibiting e-procurement in the manufacturing sector in Ghana. Concerns are raised about internet security, emphasizing that the internet, being a

platform for cybercrimes and fraud, poses a significant threat. The possibility of hacking by intruders is highlighted as a risk (Rizki, 2018).

The third hypothesis (H3) posited a positive relationship between global sourcing (GS) and competitive advantage. The findings support this hypothesis. The finding indicates that global sourcing is significant with a p-value of 0.004. This finding supports previous studies that have asserted that when firms engage in global sourcing, they generate profits (Cho & Kang, 2001; Monczka, 2003; Lin, 2020). The fourth hypothesis (H4) explored the relationship between supplier collaboration (SupCol) and competitive advantage. The results demonstrated a positive and significant impact (beta = 0.318, p-value = 0.000, Table 6), with a moderate effect size (f^2 = 0.065). This highlights the importance of collaborative efforts with suppliers in enhancing the competitive position of manufacturing firms. This finding is supported by previous studies Liu et al. (2018), and Baah et al. (2022).

Chen et al. (2017) proposed that fostering collaboration within the supply chain ensures enhanced visibility, representing the optimal approach to ensuring optimal system performance throughout the supply chain. In practical terms, inter-business collaborations introduce a level of flexibility, facilitating easier and less costly adaptation to shifts in market trends (Baah et al., 2021). Building on this notion, Zhang and Cao (2018) emphasized the significance of making collaborative decisions at the supplier level, advocating for a clear understanding of end-customer sales rather than solely relying on retailers' orders. This approach empowers suppliers to make timely decisions, aligning their supply with the dynamic market demands. Additionally, insights from Jimenez et al. (2019) and Acquaah et al. (2021) suggest that engaging in joint initiatives not only enhances environmental performance but also contributes positively to financial outcomes.

The fifth hypothesis (H5) suggests that supplier evaluation (SupEva) has a positive influence on competitive advantage. The findings support this hypothesis, revealing a significant positive impact (beta = 0.273, p-value = 0.003) with a moderate effect size (f^2 = 0.041). Effectively assessing suppliers based on various criteria appears to be a crucial determinant of competitive advantage. The results revealed that effective supplier evaluation practices could increase the company's performance. The result is similar to that of Zhu and Sarkis (2004) and Kim et al. (2006), who also found that supply chain management evaluation practices play a significant role in a firm's performance.

The sixth hypothesis (H6) explored the effect of green procurement (G-Proc) on competitive advantage. The results affirmed a substantial positive relationship (beta = 0.378, p-value = 0.000, Table 3) with a large effect size (f^2 = 0.208). This suggests that incorporating environmentally friendly procurement practices significantly contributes to the competitive advantage of manufacturing firms in Ghana. Also, Green Procurement had the greatest effect on the competitive advantage of manufacturing firms. These results align with previous studies by Quyen (2020), Sharabati (2021), and Tan et al. (2019), which also found a positive relationship between green procurement practices and organizational performance.

The moderation analysis examined how firm size moderates each of the procurement strategies and competitive advantages. The outcome indicated that firm size moderated four of the six procurement strategies. These are e-procurement, green procurement, supplier collaboration and supplier evaluation. This finding supports the assertion made by Abiodun (2013) and Abeyrathna & Priyadarshana (2019) that firm size has an impact on profitability. This suggests that the size of the firm will determine whether manufacturing firms can engage in e-procurement, green procurement, collaborate with suppliers, and conduct supplier evaluations to gain a competitive advantage. However, this is not the case with global sourcing and outsourcing. This also suggests that, regardless of a firm's size, companies can gain a competitive advantage by engaging in global sourcing and e-procurement, provided they can overcome the challenges associated with these procurement strategies.

6. Implications and Recommendations

The study makes a significant contribution to the field of procurement, highlighting how firms can leverage procurement to gain a competitive advantage. It makes a significant contribution to understanding how firm size affects a firm's ability to leverage procurement strategies and gain a competitive advantage. As suggested by the studies of Sawhney & Tripathi (2019) and Barkat et al. (2022), the specific dynamics of procurement strategies and their impact on competitive advantage in the Ghanaian context remain scant. This study, therefore, makes a significant contribution in that regard. It further highlights the role of firm size in the relationship between procurement strategies and competitive advantage.

The study makes some practical contributions to practitioners. Manufacturing firms can rely on procurement strategies to increase their competitiveness. Such firms should priorities outsourcing of non-core and strategic operations, engage in global sourcing, collaborate with suppliers, undertake supplier evaluation, and also practice green procurement. These actions contribute to reducing cost and, at the same time, enhancing the quality of the operations. These ensure that the firm's competitiveness is enhanced through these activities. However, e-procurement has been found not to contribute to increasing the competitive advantage of manufacturing firms. The study further indicates that the size of the firm matters, as it can also enhance the competitive advantage of the manufacturing firm. The size of the firm matters when it seeks to implement procurement strategies, such as e-procurement, green procurement, supplier collaboration, and evaluation, to enhance its competitiveness. However, the size of the firm does not matter when firms engage in global sourcing and outsourcing as a means of increasing their competitive advantage.

For manufacturing firms to benefit from global sourcing and outsourcing as procurement strategies that enhance their competitiveness, mechanisms should be established to promote this approach. This can be done when the government have a centralized system that allows manufacturing firms to indicate their input needs. This will allow the firms to reap the maximum benefit from global sourcing. Manufacturing firms should also have a thorough assessment of their operations to identify areas of core importance and non-core activities. This helps them outsource the right activity, allowing the firm to concentrate on its core responsibility of production and consequently enhancing its competitive advantage.

7. Conclusions and Implications for Future Studies

This study confirms that certain procurement strategies contribute to enhancing a firm's competitive advantage. it also highlighted the role that the size of the firm plays in deciding which procurement strategy to adopt to enhance the competitive advantage of that firm. However, regardless of the firm's size, engaging in global sourcing helps enhance its competitive advantage. Similarly, when firms outsource non-core activities and non-strategic activities, their competitive advantage can be enhanced. Future studies could focus on the service sector to determine which of these issues studied applies to the sector. This will provide a comprehensive understanding of the issues as they pertain to firms operating in Ghana.

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