The Nexus between Sustainable Procurement Orientation and Firm Performance

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Abstract

Background: This study evaluated the causal connectivity between sustainable procurement orientation and firm performance in Ghana.
Objectives: This paper sought to determine if a causal connectivity existed between sustainable procurement orientation and firm performance in Ghana.
Method: This survey deployed an interviewer-administered questionnaire to obtain primary data from 500 sampled firm managers from private and public businesses, using random and purposive sampling techniques in Ghana. A Partial Least Square-structural Equation Model was used to analyse the dataset.
Results: The findings established a direct significant causal relationship between sustainable procurement orientation and firm performance with multi-dimensional indicators, such as financial performance, operational performance and market performance.
Managerial implications: Managers should appreciate and understand that firm performance can further be boosted if sustainable procurement orientation is envisaged as a critical resource.
Originality/value: This study deployed the reasonably new concept of sustainable procurement orientation on firm performance within the Ghanaian context. It is perhaps one of the first studies to address the nexus between sustainable procurement orientation and firm performance in Ghana.

Keywords: sustainable procurement; sustainable procurement orientation; sustainability orientation; firm performance; state-owned enterprises in Ghana

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Introduction

At the turn of the 21st century, the idea of sustainable orientation evolution stimulated new research streams on sustainable procurement, sustainable supply chain management and sustainable procurement practice to independently and simultaneously pursue environmental, economic and social goals—the triple bottom line (Lüdeke-Freund 2020), which resonates with the Environment, Social and Governance (ESG) and the Sustainable Development Goal (SDG) 12 (Pedersen 2018).

The existing global turbulent business environment has witnessed a great deal of sustainability development, entailing a significantly balanced integration of environmental resilience, economic performance and social justice (Del Río et al. 2021). Recent studies indicate that low-income levels among customers have resulted in less market demand for sustainability products, particularly for firms in sub-Saharan Africa (SSA) (Cordes and Marinova 2023). Liao (2022) also suggests that the association between sustainability and firm performance is conditioned by external and internal environmental factors. Other studies show that while sustainability matters pose some developmental obstacles and challenges to the existing business environment and small and medium scale businesses in particular, they equally provide nouvelle business opportunities that can be explored and exploited, not only by firms and entrepreneurs, but also by stakeholder economic operators through innovative business models, services and products (Danso et al. 2020).

Considering the perspectives of some researchers in relation to sustainable procurement, the study that informed this article posited that the extent to which a firm accepts economic sustainability orientation, social sustainability orientation, and environmental sustainability orientation essentially determines what feeds into its sustainability orientation (Crooms et al. 2018). The findings of prior studies in developed economies contrast with those of some SSA countries, where governmental agencies' regulations are not properly structured, and policies on sustainable procurement are either non-existent or ineffective to direct sustainable procurement activities (World Bank 2019). Regardless of the increasing number of studies conducted on sustainable procurement, no literature exists on sustainable procurement orientation.

Research Problem

In the past few decades, a plethora of studies have been conducted in the areas of sustainable procurement practices and firm performance (Islam et al. 2017), sustainability orientation and firm performance (Danso et al. 2020), evaluation of green procurement practices among mining companies' hospitals in Ghana (Guo et al. 2020), sustainable procurement implementation among public sector organisations in Ghana (Nsiah-Sarfo, Ofori, and Agyapong 2023), and green procurement nexus performance of manufacturing firms: empirical reflections (Kimario et al. 2023). However, irrespective of these studies, no specific research has delved into the nexus that exists between sustainable procurement orientation and firm performance, especially within

the Ghanaian context. This study is perhaps one of the first to seek to establish the nexus between sustainable procurement orientation and firm performance in Ghana.

Objectives of the study

The overall objective was to ascertain the causal connectivity between sustainable procurement orientation and firm performance in Ghana.

Secondary objectives sought to:

1. Determine the association between sustainable procurement orientation and **financial performance**.
2. Ascertain the relation between sustainable procurement orientation and **market performance.**
3. Establish the relationship between sustainable procurement orientation and **operational performance.**

This study defined Sustainable Procurement Orientation (SPO) by amalgamating the definition of the Department for Environment, Food and Rural Affairs (DEFRA 2006) of the United Kingdom and that of Kuckertz and Wagner (2010). SPO can, therefore, be defined as the process through which a firm realises its requirements for goods, services, works and utilities in a manner that achieves value for money on a whole-life basis by generating benefits not only for the firm, but also for the wider economy, minimising damage to the environment, while measuring the underlying individual attitudes and personal traits throughout the supply chain.

Literature Review

Sustainable Procurement

Scholars have presented alternative definitions of sustainable procurement based on their theoretical lenses, asserting that sustainable procurement should consider the environmental, social and economic consequences of design, manufacture and production methods; non-renewable material use; logistics; recycling options; use; operations; re-use; suppliers' capabilities; and service delivery and disposal (African Development Bank 2020). Others espouse sustainable public procurement as a process used by public organisations to satisfy the need for goods and services that achieve value for money and provide benefits to the organisations, society and the economy, while reducing negative environmental consequences (Danso et al. 2020). Sustainable procurement seeks to ensure that fair contract prices and terms are applied and respected in at least meeting minimum ethical, human rights and employment standards, while at the same time striving to promote diversity and equality throughout the supply chain (Grandia and Kruyen 2020).

Communities within SSA are confronted with deteriorating climatic conditions, abject poverty conditions, air pollution, deforestation and environmental degradation. These

are mainly the consequence of the application of inappropriate techniques and outmoded methods of production and consumption (United Nations Environment Programme [UNEP] 2021). Environmental and societal sustainability knowledge has surged in contemporary times, resulting from the demand to change the traditions surrounding how organisations behave predominantly in their supply network management practices. Organisations must develop socially and environmentally accountable purchasing procedures (Magoma, Kimario, and Kasheshi 2024) that include all dimensions of the supply chain, which involves suppliers, personnel, and clients, with objectives centred on minimising the impact of firms and their suppliers' operations on products and services (Oyebanjo and Robertson 2020).

Sustainable Procurement in Ghana

Similar studies by Danso et al. (2020) in the Ghanaian context investigating the linkage between environmental sustainability orientation and performance of family and non-family firms, found that the impact of environmental sustainability orientation on firm performance was amplified and stronger within aged firms than newly established ones. Guo et al. (2020), using empirical analysis techniques, evaluated green procurement practices among seven mining hospitals in Ghana. The study concluded that large volumes of purchases were made by these hospitals without considering sustainability protocols. A factor-mediating study by Adzimah, Lei, and Ishawu (2020) found that organisational culture partially mediated the correlation between corporate social responsibility (on the two types of stakeholders) and sustainable procurement, such that a favourable task and relationship-oriented culture strengthened the correlation between corporate social responsibility towards stakeholders and sustainable procurement.

Danso et al. (2020) further examined the correlation among stakeholder integration, sustainability orientation, and financial performance constructs. The findings empirically supported the proposition that the relationship between stakeholder integration and financial performance was mediated by firms' environmental sustainability orientation.

Firm Performance

Potential outcomes from a well-groomed and integrated supply chain of a firm could include improved market share, increased profitability, keeping up with demand, improved quality controls, and reduced overhead cost, among others, culminating in better firm performance (Masa'deh et al. 2022). In many instances, firms have endeavoured to enhance their competitiveness and financial performance to be able to achieve better sales and profits (Nguyen et al. 2021). Performances can be classified into four major dimensions, including operational performance, external environment, internal motivation, and capacity of the firm (Harb et al. 2019). There are many different approaches to measuring firm performance, which include financial performance and non-financial performance (Islam et al. 2017). Similar studies conducted in relation to firm operations indicate that performance can be investigated by considering five key

variables, including financial performance (Ghosh 2019). Some research outcomes have established that it is still inconclusive whether financial performance and non-financial performance have an association with firm performance (Nguyen et al. 2021). They argue that in considering the different kinds of performance measures, non-financial performance is a better predictor of a firm's long-term performance, even though others share contrary views of a non-relationship between non-financial performance and firm performance. Financial performance connotes a firm's financial condition over a period that encompasses the utilisation of funds, measured by several indicators of capital adequacy ratio, liquidity, leverage, solvency and profitability, and it involves the firm's ability to manage and control its resources (Fatihudin, Jusni, and Mochklas 2018).

Performance measurement was traditionally strongly influenced by financial reporting, leading to the development of numerous financial measures such as return on assets (ROA), return on equity (ROE), profit margin, earnings per share, and value per employee, among others (Bahri, St-Pierre, and Sakka 2017). However, these traditional financial measures are no longer seen as adequate means of exercising management controls (Nguyen et al. 2021). It is further argued that non-financial performance metrics may have lower measurement accuracy, but that such metrics focus on components that relate directly to operations within the control of management (Ahmed, Najma, and Khan 2020). There are reported scandals globally on the manipulation of financial data to omit relevant information about firm performance (Ahmed et al. 2020). In light of the above, this study measured firm performance by employing financial, operational and market performance variables.

Theoretical Background

The Resource-based View (RBV) was the underpinning theory of this study, consistent with Touboulic and Walker (2015), who recognised the RBV theory as predominantly applied in the field of sustainable purchasing and supply chain management. The RBV is one of the oldest, most successful theoretical approaches in the field of strategic management. Developed in the 1980s, this theory examines the link between a firm's internal characteristics and performance (Barney 1991). As the basis for a competitive advantage, the RBV considers the application of a bundle of tangible and intangible resources of a firm to its operations (Wernerfelt 1984). According to the RBV theory, the success of an organisation, to a very large extent, depends not only on its ability to adapt to the external environment, but also to efficiently manage its internal resources (Davis and DeWitt 2021). Under the RBV theory, regardless of the industry in which a firm operates, it will have strategic and operational goals, procedures, and a unique set of resources (tangible and intangible) that differentiate it from other industry players (Wojciechowska 2016). Jurevicius (2021) further indicates that the RBV is a model that sees resources as key to superior firm performance, and that if a resource exhibits VRIO (value, rarity, imitability, and organisation) attributes, these characteristics enable the firm to gain and sustain a competitive advantage. In the view of Omondi-Ochieng (2019), the proponents of the RBV theory hold that sustained competitive advantage

can be achieved effectively by exploiting internal rather than external factors of production or operation. This study by Omondi-Ochieng (2019) conceptualises sustainable procurement orientation as a resource to the firm. Therefore, when a firm knowingly adopts a strategy to train and re-orient its internal customers and internal operational structures to think, act and operate sustainably within the remits of procurement, then sustainability becomes a resource—and, for that matter, a reliable source of competitive advantage to the firm against its competitors. Firms may generally adopt sustainable procurement orientation initiatives due to stakeholder pressures emanating from customers, industry, culture and regulators (Nsiah-Sarfo et al. 2023). Particularly in advanced economies, consumers tend to reward firms that adopt sustainable procurement functions by deliberately patronising sustainable products and services (World Bank 2019).

Empirical Review

Sustainable Procurement Orientation and Firm Performance

Previous literature has examined the connectivity between sustainable procurement practice and firm performance (Khaderi et al. 2022); sustainable supply chain management practice and firm performance (Jadhav et al. 2019); sustainability orientation and firm performance (Chistov et al. 2023); and green procurement orientation and firm performance (Grob and Benn 2014). Literature on *sustainable procurement orientation* and firm performance is simply non-existent. For the purpose of this study, literature from sustainable procurement practices, sustainability orientation, environmental sustainability orientation, and sustainability supply chain management and related literature was borrowed to substitute the literature for *sustainable procurement orientation*. Flammer and Bansal (2016) propose that firms with long-term orientation are more likely to increase investments in long-term strategies, such as innovation and developing lasting relationships with stakeholders. Many firms that have experienced successful implementation of sustainable supply chain management practices require long-term orientation (Chistov et al. 2023). It is confirmed that firms with long-term orientation are more capable of developing successful supplier partnerships, which has positively influenced operational performance (Chistov et al. 2023). Evidence from the studies by Chogo and Kitheka (2019) identifies sustainable procurement as a key tool through which organisations have improved their level of profitability. Firms with higher sustainability orientation experience have a potentially higher competitive advantage in comparison with their peers (Hollos, Blome, and Foerstl 2012).

From a TBL perspective, sustainable procurement includes a company's purchase of goods and services, supplier selection, development and evaluation, and business relationship development (Motevali 2020). It involves suppliers having environmental certifications, such as ISO 14000, and companies carrying out training programmes and promoting collaboration to meet sustainable objectives (Sánchez-Flores et al. 2020).

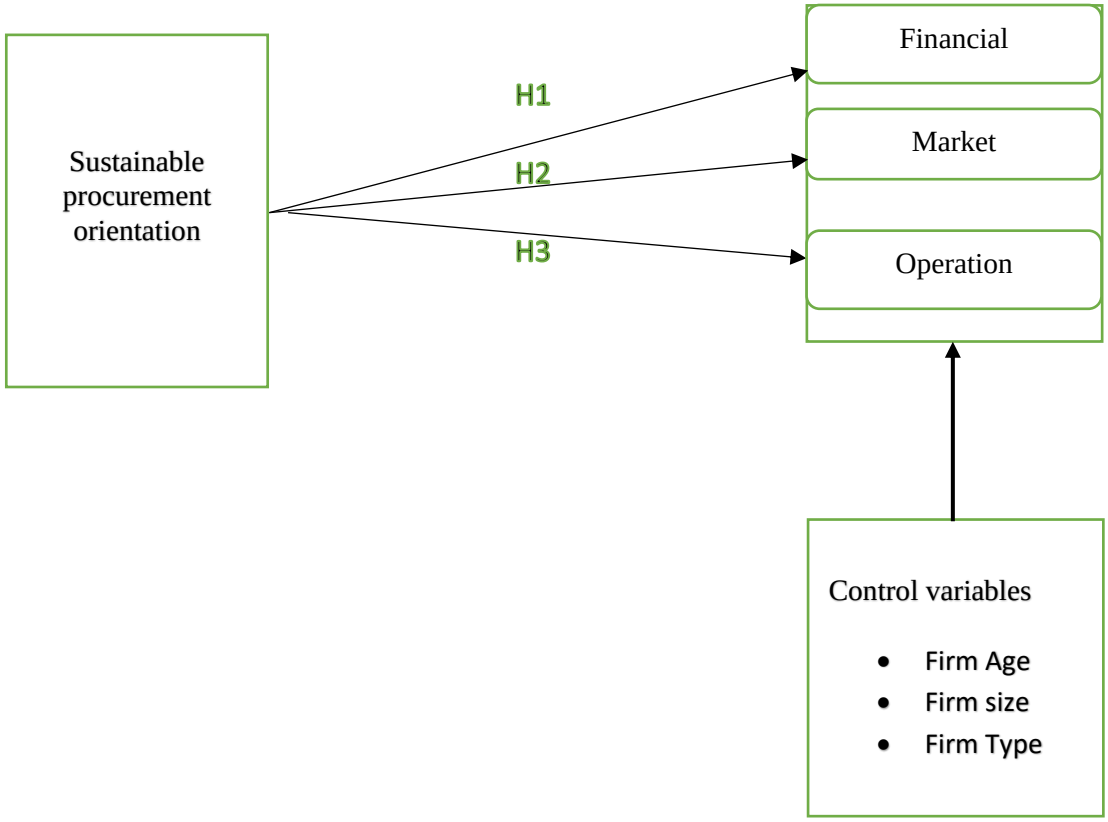

Figure 1: Sustainable procurement orientation and firm performance

Methodology

This quantitative study adopted the positivist epistemology philosophy in which quantitative data were randomly and purposively sampled. To test the hypotheses developed from the theoretical model in figure 1, a seven-point Likert scale survey questionnaire was administered to gather data from respondents at 500 sampled firms in the private and public sectors in 10 regions of Ghana.

Sampling and Response Rate

A number of research informants were contacted through "Yellow Pages Ghana," an internet-enabled platform that contains directories of registered private and public companies in the country. The population of firms detailed in the directory were 700, contacted via electronic media (WhatsApp professional platforms and e-mail), face-to-face, and postal. Ten regions (Upper East, Upper West, Northern, Brong Ahafo, Ashanti, Eastern, Western, Central, Greater Accra and Volta regions) out of the current 16 regions were sampled using the purposive sampling technique. Justifiably, the remaining six new regions were excluded from the study because their procurement

activities were not enduring or sustainable enough (over 3 years) for the purpose of soliciting data. Fifty private and 50 public companies each were randomly sampled from among the 10 selected regions. Five research respondents each were purposively sampled from across private and public (SOEs) firms in the 10 regions. A total sample size of 500 respondents was obtained. These respondents were officials whose job designation related to procurement, operations and supply chain, marketing, accounting and finance, and other related functional areas within these firms. Of the 500 questionnaires distributed, 150 were by WhatsApp professional platforms, 125 by e-mail, 200 by face-to-face, and the remaining 25 were by postal mail services. Of the 500, 19 questionnaires were undelivered (via WhatsApp platforms and never got to the intended respondents or reached respondents but never received attention because some did not visit their platforms). A total of 481 questionnaires were, therefore, effectively delivered, out of which 110 were not returned because respondents could not be reached to retrieve questionnaires or the questionnaires were unnecessarily kept too long to complete. Of the 371 retrieved responded questionnaires, 18 were unusable due to numerous omissions or nullified responses. Hence, 353 were usable, culminating in a total response rate of 73.39%.

Table 1 illustrates the response rate of the survey; 371 (74.2%) of the managers responded. However, usable responses came from 353 professional practitioners, resulting in a response rate of 73.39% (353/481).

Table 1: Questionnaire response rate

No	Description of activity	Total
1	Number of questionnaires distributed	500
2	Non-deliverable	29
3	Effectively delivered (1–2)	471
4	Unreturned	100
5	Total responses (3–4)	371
6	Unusable/discarded responses	18
7	Effective questionnaires (5–6)	353
8	Response rate	73.39%

Common Method Bias

Common method bias was duly tested for in this study using the Harman one-factor test (deploying PLS-SEM). In this test, all the items (observed variables) are loaded onto one common factor using the principal axis extraction method and no rotation **(**Podsakoff, MacKenzie, and Podsakoff 2012). If the variance for a single factor is less than 50%, then it suggests that CMB does not affect the data. In this study, the total variance for the single-factor extraction was 39.662%, which is less than 50%; hence, it can be concluded that this study's data were not compromised by common method bias.

The eigenvalue criterion, Scree plot test criterion, and the interpretability criterion were adapted in this study. At the outset, EFA was run without fixing the component factors using the rotation. The results in nine factors were identified with respect to the eigenvalue criterion. Only values with an eigenvalue greater than 1.00 were retained and explained over the cumulative percentage variance. This meets the criteria of retaining factors that explain a minimum of 60% of the total variance (Matsunaga 2010). The observation of the Scree plot test suggested the retention of all nine components. However, the inspection of the "rotated component matrix" revealed a complex structure that did not meet the interpretability criterion (Hatcher 1994). A simple structure occurs when "most of the variables have high loadings on one component and near-zero loadings on the other component" (Matsunaga 2010, 99). Advisably, each factor should "load strongly on at least three variables" (Hatcher 1994, 156). According to Hair et al. (2017), variables that load well on a factor should have a value greater than 0.50. Factor loadings of less than 0.50 were therefore suppressed. The third run generated a simple structure applying nine of the factors that satisfied the interpretability criterion. This solution with all nine factors explained over 63.057% of the cumulative percentage of variance, and also matched the original constructs they were supposed to measure.

The fundamental factor structure from components 1 to 9 was consistent with the a priori factors. Sustainable Procurement Orientation (SPO); Operational Performance (OPO); Firm Performance with sub-dimensions: Market Performance (MAP) and Financial Performance (FIP); and Operational Performance (OPO). Despite that, a priori number of components/factors were retained, and the number of variables was reduced from 31 to 30 in the regenerated model. In the regenerated model, all items for SPO were retained, items measuring OPO were decreased by two, and items for the measurement of FIP were increased by two. Table 2 presents the results of a priori and post-EFA analysis. It captures the outcome of the EFA pattern matrix of the main constructs.

Table 2: Number of variables prior to and post-EFA

Construct	**Number of Variables**	
	A priori model	**Final solution**
Sustainable Procurement Orientation (SPO)	14	14
Operational Performance (OPO)	9	7
Market Performance (MAP)	5	4
Financial Performance (FIP)	3	5
Total	**31**	**30**

When no study item scores higher on other constructs than its own constructs, discriminant validity is present (Hair et al. 2017). If not, the item in issue cannot distinguish whether it belongs to the desired construct or not (Chin 2010). The discriminant validity of the study model is supported by the results in table 3, which

demonstrates that all measurement items loaded more heavily on their own constructs than against other constructs.

Table 3: Cross loadings

	FIP	**MAP**	**OPO**	**SPO**
FIP1	**0.776**	0.611	0.568	0.488
FIP2	**0.835**	0.566	0.606	0.566
FIP3	**0.814**	0.57	0.591	0.545
FIP4	**0.826**	0.545	0.600	0.627
FIP5	**0.840**	0.590	0.635	0.515
MAP1	0.599	**0.830**	0.648	0.479
MAP2	0.609	**0.860**	0.653	0.471
MAP3	0.604	**0.864**	0.619	0.469
MAP4	0.578	**0.845**	0.619	0.481
OPO1	0.542	0.488	**0.683**	0.463
OPO2	0.560	0.522	**0.747**	0.474
OPO3	0.520	0.572	**0.796**	0.520
OPO4	0.580	0.589	**0.817**	0.497
OPO5	0.581	0.589	**0.806**	0.519
OPO6	0.609	0.642	**0.783**	0.466
OPO7	0.496	0.551	**0.642**	0.358
SPO1	0.467	0.396	0.431	**0.671**
SPO10	0.53	0.402	0.461	**0.698**
SPO11	0.451	0.489	0.496	**0.633**
SPO12	0.392	0.396	0.435	**0.603**
SPO13	0.432	0.419	0.437	**0.612**
SPO14	0.356	0.25	0.322	**0.524**
SPO2	0.507	0.380	0.465	**0.719**
SPO3	0.485	0.380	0.407	**0.692**
SPO4	0.491	0.375	0.439	**0.761**
SPO5	0.437	0.312	0.395	**0.680**
SPO6	0.378	0.323	0.343	**0.692**
SPO7	0.484	0.382	0.458	**0.713**
SPO8	0.400	0.333	0.350	**0.655**
SPO9	0.406	0.312	0.324	**0.645**

Source: Authors' construct 2023

Fornell-Lacker, according to Hamid (2017), states that a latent construct should explain better the variance of its own sub-dimensions rather than the variance of other constructs. Table 4 shows diagonal values in bold, representing the square root of the AVE of the construct, whereas off-diagonal values indicate the interrelationship amongst constructs, which confirms that all diagonal variables are greater than off-diagonal values.

Table 4: Fornell-Lacker criterion

	FIP	**MAP**	**OPO**	**SPO**
FIP	**0.818**			
MAP	0.703	**0.850**		
OPO	0.733	0.747	**0.756**	
SPO	0.672	0.559	0.626	**0.667**

Nomological validity is established when the Inter-construct Correlation (IC) estimates are both statistically significant and positive (Hair et al. 2017). Therefore, given the presence of a valid relationship between constructs, nomological or criterion validity can be considered established (Boso 2010).

In this study, the Cronbach Alpha (CA) values range between 0.872 and 0.903. Composite Reliability (CR) values range between 0.903 and 0.917; cross-loading values are 0.60 and above; AVE ranges between 0.504 and 0.722, and rho_A ranges between 0.872 and 0.905. These values significantly confirm that the measurement scales adopted by the study have all passed the test of convergent validity, content validity, discriminant validity and nomological validity. As seen in table 5 rho_A results for construct validity and reliability display a matrix containing output data on CA, Composite Reliability (CR) and Average Variance Extracted (AVE). When these measurements of reliability are presented because rho_A values fall between CA and CR it is a good indication of reliability; in the data output, the measures are reflected side-by-side, and this helps to determine if the value is good between the CA and CR values. From the above logic it can be confirmed that for this study, the reliability values were good.

Table 5: Validity test for scale items

Constructs /Variate	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Financial Performance (FIP)	0.877	0.879	0.910	0.670
Market Performance (MAP)	0.872	0.872	0.912	0.722
Operational Performance (OPO)	0.874	0.882	0.903	0.572
Sustainable Procurement Orientation (SPO)	0.903	0.905	0.917	0.504

Empirical Literature and Hypotheses Development

This section empirically examines the connectivity that exists among the independent variable (sustainable procurement orientation) and the outcome variable (firm performance) and predicts the direct and significant nature of the relationships.

Sustainable Procurement Orientation and Firm Performance

Literature has established that there is a direct significant association between sustainable procurement practices/orientation and an organisation's monetary productivity (Islam et al. 2017); a position that has been rebutted by other researchers (Karim et al. 2016; Walton, Bernecker, and Dweck 2015). The study was inspired by the RBV theory, which sought to examine performance differences of firms based on their resources (Peteraf and Barney 2003). In this case, the ability of the firm to adopt and implement sustainable procurement orientation initiatives stands to reap the benefit of a good reputation and legitimacy in the eyes of the general public (Dubey et al. 2019). An intangible asset, such as sustainability orientation, is a resource in itself, semi-permanently tied to the firms in private and public-state-owned enterprises (Caves 1980). These firms' brand names; employee knowledge, skills, and abilities; machinery and technology; capital; contracts; and efficient procedures and processes (Wernerfelt 1984) are bundles of resources. The theory makes two main assumptions: 1) firms within an industry may differ in their resources if they deploy sustainably-oriented processes and procedures in the selection of their suppliers; and 2) these endowments may not be perfectly mobile across firms (Barney 1991). The theory seeks to explain how firms maintain unique and sustainable positions in competitive environments. The central idea in resource-based theory is that firms compete against others on the basis of their resources and capabilities (Barney 1991; Wernerfelt 1984). An organisation's competitors can be identified by the similarity of their products, resources, capabilities, and substitutes (Peteraf and Barney 2003). An organisation's resources are seen as strengths that help the organisation to better compete and accomplish its vision, mission, strategies, and goals (Porter 1981).

Against this backdrop, this study argues that firms would differ in their financial performance, market performance, and operational performance because of the different levels of sustainable procurement orientation initiatives they may pursue. Under the resource-based theoretical lenses we posit the undermentioned hypotheses:

- H1: Sustainable procurement orientation impacts **financial performance**
- H2: Sustainable procurement orientation impacts **market performance**
- H3: Sustainable procurement orientation impacts **operational performance**

Testing for Model Fitness

Model 1 was run using the control variables of firm age, firm size, firm ownership type, and industry type against the three dependent variables: financial performance, market performance and operational performance. Analysis was done using SMART-PLS Structural Equation Modelling. The model explained 22%, 53% and 38% of the variation in financial performance, operational performance, and marketing performance, respectively. The model fitness test yielded results less than 0.08 as a standardised root mean square residual (SRMR). The normed fit index (NFI) should yield a value greater than 0.9 (Hair et al. 2017). In all cases analysed, the NFI is above 0.9, a further indication of the goodness of fit of the model.

In Model 2, the analysis was a combination of the control variables and the independent variable (SPO) against the three dependent variables (FIP, OPO and MAP). This was to ensure that the effect of the independent variable was not overestimated. The model explained 59.7%, 68.3% and 56.9%, as captured in table 6 of the variation in financial performance, operational performance and market performance, respectively. The model fitness test produced results of less than 0.08 and greater than 0.90 for the standardised root mean square residual (SRMR) (Hair et al. 2017) and the normed fit index (NFI) (Hair et al. 2017), respectively. This is an indication of a good fit model for the study's analysis.

Table 6: Sustainable procurement orientation and firm performance

Standardised estimates (t-values)						
Variable — Control paths	**Model 1**			**Model 2**		
	Financial Performance	**Operational Performance**	**Market Performance**	**Financial Performance**	**Operational Performance**	**Market Performance**
Firm size	0.09(1.34)	0.115(2.094)**	0.034(0.536)	0.049(1.352)	0.055(1.782)*	-0.015(0.392)
Firm age	-0.083(1.45)	-0.166(3.032)***	0.148(2.516)**	0.009(0.266)	-0.075(2.252)**	0.068(1.854)*
Firm ownership type	0.13(2.621)**	0.148(3.126)***	0.132(2.517)*	0.06(1.974)*	0.065(4.496)****	0.062(1.895)*
Firm industry	0.102(0.988)	0.131(2.245)**	0.121(1.864)*	0.078(1.928)*	0.097(2.87)**	0.100(2.347)**
Main effect path						
Sustainable Procurement Orientation (SPO)				0.266(3.722)***	0.062(0.877)	0.036(0.518)
Goodness of fit indicators						
χ^2	98.453	131.344	26.973	3215.22	364.92	3064.821
d_ULS	0.121	0.204	0.063	4.65	4.848	4.387
d_G	0.047	0.061	0.03	1.748	1.848	1.658
NFI	0.897	0.891	0.919	0.694	0.692	0.698
SRMR	0.052	0.056	0.042	0.062	0.06	0.061
R	33%	64%	48%	59.7%	68.3%	56.9%
ΔR^2	**22%**	**63%**	**38%**	**58.5%**	**67.3%**	**55.6%**

Conclusion

This research set out to provide answers to the research question, "To what degree does sustainable procurement orientation impact firm performance in Ghana?" From this article, and particularly the SMART PLS output, it is clear that the research has amply demonstrated that sustainable procurement orientation has a direct, causative impact on firm performance in Ghana.

Managerial and practical implications

Top-level managers of firms should depend on sustainable sources in order to secure and meet their strategic goals in terms of materials sourcing, works, utilities and services. Secondly, since it was established that sustainable procurement orientation has a significant and direct positive causal relationship with firm performance, hence a critical resource, managers should implement more sustainable procurement orientation policies in firms. Additionally, policymakers should mount mass awareness of sustainable procurement orientation programmes through training platforms and in the media to drum home the importance of this concept, especially among procurement practitioners and top management of firms.

Future Research Directions

This cross-sectional study focused on selected Ghanaian firms; hence, the level of generalisability is limited to Ghana. The study, therefore, recommends cross-country studies across SSA so that generalisations can be extended to cover the entire sub-region. As a cross-sectional survey soliciting primary data from multiple industries, the study missed the opportunity to concentrate on the individual industry particularities. It is the recommendation of this study that future research should focus on individual industry peculiarities in order to do a thorough industry-by-industry analysis.

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