

**Strategic sustainability orientation, dynamic capability, organisational resilience and
small and medium-sized enterprises green innovation in sub-Saharan Africa:**

Evidence from Ghana

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Sustainable and Responsible Business Track

Abstract

This study proposes to investigate the relationship between small and medium enterprises' strategic sustainability orientation and their green innovation outcomes. Although strategic sustainability orientation has emerged to drive firms into eco-friendly production, the effect of this novel strategic positioning remains unsettled. Recognising that the association between strategic sustainability orientation and green innovation may not always be direct, the study theorises that dynamic capability and organisational resilience may form part of the underlying conditions that improve the strategic sustainability orientation effect on small enterprises' green innovation. The study adjoins the dynamic capability theory with the organisational resilience theory to test this relationship among small businesses within a developing economy. This study will employ symmetrical (i.e., partial least square structural equation modelling) and asymmetrical approaches (i.e., fuzzy set qualitative comparative analysis) to determine the different configurations of conditions that result in better green innovation outcomes. In sum, results from the study can guide small and medium-scale businesses on the specific firm-level factors that reinforce sustainable strategic orientation impact on firms' green innovation outputs.

Keywords: strategic sustainability orientation, dynamic capability, organisational resilience, SMEs, sub-Saharan Africa, Ghana

Introduction

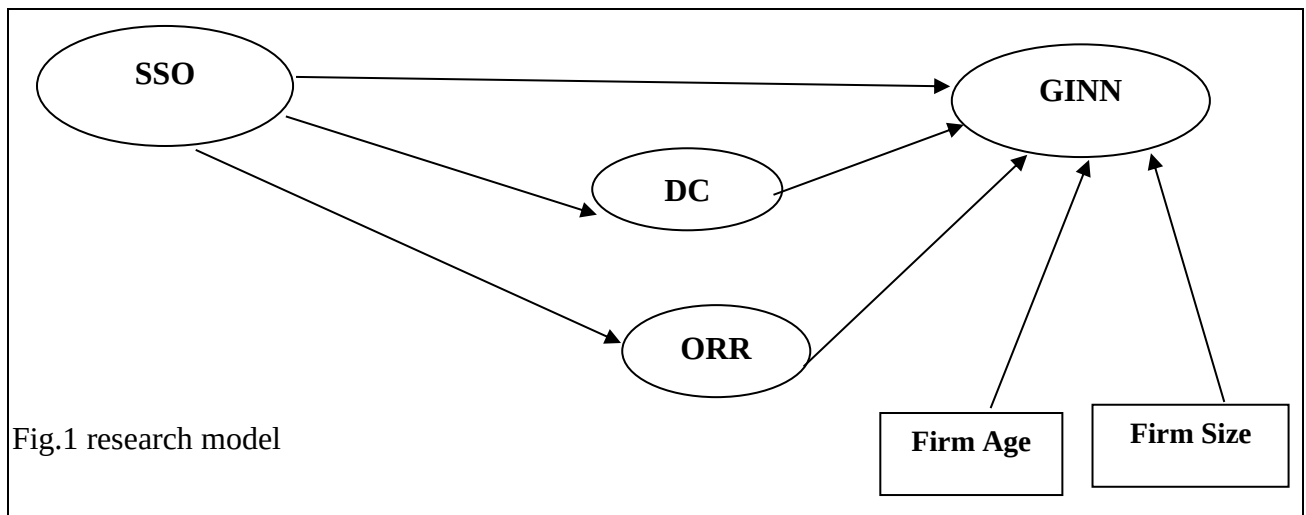
The growing environmental challenges across many parts of the world have increased calls for firms to look for ways to reduce their operational environmental footprint. Consistently studies have revealed that the present environmental issues cannot be efficiently dealt with if the prevailing social models and production strategies that undergird businesses' decision-making process are not changed (Adams et al., 2016; Adomako, 2020). Recently, businesses have been pressured to integrate sustainable practices into their production activities. The heightened expectations stakeholders have for businesses in contemporary times seem to have forced many to guide their product and service design processes with environmental sustainability thinking which hereafter would be referred to as strategic sustainability orientation (SSO). SSO constitutes a new strategic positioning which seeks to help a firm run its business operations in line with the sustainable development goals (SDGs) set by the United Nations in 2015 (Varadarajan, 2017). SSO, therefore, becomes the inherent ideals and principles that provide behavioural norms to guide an enterprise's sustainability drive (Cheng, 2020).

With the increasing acceptance of this new strategic thinking among businesses, scholars have begun exploring the antecedents of SSO and its impact on firms' sustainable innovation outputs and financial performance (e.g., Adams et al., 2016; Govindan et al., 2020). Notwithstanding the increasing interest in SSO among academics, the existing literature on SSO outcomes remains unsettled (Cheng, 2020). For instance, while some studies have observed a significant relationship between SSO and green innovation (e.g., Genc & Benedetto, 2019; Warren et al., 2018), other studies have failed to come to the same conclusion among their study samples (e.g., Adams et al., 2016; Klewitz & Hansen, 2014). Despite the surge in SSO studies, the literature still has wide knowledge gaps that must be addressed. First, there is a limited understanding of how SSO impact small and medium-sized enterprise (SME) green innovation (GINN) outputs. This fundamental gap must be filled considering that SMEs may play an important role in countries' pursuit of SDGs (e.g., goal 12- responsible consumption and production) and goal 13- climate action (Lindley et al., 2018; Aidoo et al., 2021). Second, while knowledge of SSO impact is insightful, we still do not know the underlying conditions mediating this relationship. Third, we do not entirely understand the combinations of factors that result in the negation or absence of GINN, as most of the extant studies have examined this relationship linearly (i.e., using a covariance-based partial least square structural equation modelling and hierarchical regression for its analysis).

Accordingly, to address the abovementioned gaps, the study proposes to investigate the following. First, we empirically explore SSO's impact on SMEs' GINN outcomes. Whereas earlier works have assessed this relationship on bigger firms in developed economies (Roxas et al., 2017; Guo & Wang, 2022), we used the capability theory and resilient organisational theory to empirically test this relationship on SMEs as these clusters of enterprises are constrained resourcefully in many parts of the world, particularly those found in sub-Saharan Africa, Ghana. The resource scarcity of developing economies provides a robust theoretical contribution to understanding how issues such as poor government support, limited capital, high level of informality, and high market uncertainty influence SMEs' SSO and green innovation relationship (de Brito et al., 2022). Extant studies on SSO have generally focused on prominent firms than smaller firms in developed economies (Guo & Wang, 2022). Second, while dynamic capability is theoretically identified to improve a firm's strategic orientation outcomes, its mediating role in the SSO relationship remains empirically untested. This study addresses this gap by testing this relationship in a developing economy. We contribute to the extant literature by hypothesising that dynamic capability which comprises sensing, reconfiguration and allocation of resources, will mediate the relationship between SSO and

SMEs' GINN. Third, there is a limited understanding of the mediating role of the firm-level attribute, organisational resilience (ORR), on SSO impact. The study addresses this gap by introducing ORR as a firm-level trait to test its mediating role in the SSO relationship. Notably, while resilience is required to facilitate organisation transition through turbulent operating environments, its mediating impact on SMEs' GINN remains unexplored. Considering resilience's significant impact on individual and organisational resurgence to market turbulence, testing its mediating influence on SMEs' green innovation will contribute to entrepreneurship theory (Conz & Magnani, 2020) and pedagogy development (Santos & Morris, 2019).

Lastly, given that we do not know the configurations that will lead to the negation of GINN, we use a configuration approach, a fuzzy set qualitative comparative analysis (fsQCA), to address this issue. Since symmetrical approaches are solely interested in approving or disproving a direct relationship, the configurational approach will unravel both the necessary and sufficient conditions that lead to the presence and absence of SMEs GINN in a developing economy. The study proposed model is presented in Figure 1.



Possible Research Hypotheses

This study would expand the SSO and GINN literature by looking at the underlying conditions that improve and mediate SSO and GINN relationships among SMEs in a developing economy. Possible research hypotheses to be addressed by this study are:

- H1: SSO will have a significant positive effect on GINN.
- H2: DC will have a significant positive effect on GINN.
- H3: ORR will have a significant positive effect on GINN.
- H4: DC mediates the relationship between SSO and GINN.
- H5: ORR mediates the relationship between SSO and GINN.

LITERATURE REVIEW

Theory and hypothesis

The capability theory provides the theoretical lens for the study. The proponents of the capability theory (Eisenhardt & Martin, 2000; Teece, 2007) posit that a firm's strategy effectiveness dwells on the suitable combinations of resources and capabilities: sensing, learning, integrating, and coordinating. According to Helfat and Winter (2011), a firm without the necessary resources and capabilities may be unable to optimise its internal and external resources to support its strategic direction. Since the demand for sustainable products is generally persuaded externally by a new regulatory requirement, customer and supplier request or market entry requirements, SMEs require a capability that will allow them to sense this new market change on time (Claudy et al. 2016). Sensing capability, therefore, becomes a requirement which allows the firm to recognise, understand, and utilise the market opportunities to its advantage (Pavlou & Sawy, 2011). Also, because sustainable innovation is distinct from conventional innovation, a firm must learn the idiosyncrasies of this new product conception. Accordingly, a firm's ability to learn and re-learn about this new market requirement becomes fundamental to improving its green innovation processes. From the capability theory argument, a firm requires a learning capability to better streamline the acquisition and assimilation of sustainable knowledge across all organisational units (Zahra & George, 2002). The lack of learning capability will limit a firm's ability to integrate the new knowledge with the existing knowledge to improve the evolution of sustainable innovation to its new business model (Pavlou & Sawy, 2011). The third and fourth dimension of the capability theory, integration and coordination, becomes crucial to value creation (Teece, 2007). As green innovation expectations are often distinct from the conventional invention, coordinating capability becomes inevitable as its presence will facilitate reorganising new tasks, resources, and activities into the firm's new-fangled working capabilities (Eriksson, 2014). From the dynamic capability theory argument, green innovation can be better achieved by concurrently nurturing sensing, seizing and reorganisation capabilities (Helfat & Martin, 2015; Kevill et al., 2017). Accordingly, for SMEs' new strategic orientation (SSO) to result in practical, sustainable innovation, they must have these capabilities to strengthen the outcomes of their new strategic direction (Helfat & Martin, 2015; Zhou et al., 2018).

Environmental Sustainability Orientation and Green Innovation

Roxas et al. (2017) defined SSO as a firm's general hands-on strategic position towards integrating environmental and social issues and practices into their strategic goals and day-to-day operations. Generally, businesses with SSO ensure that all their activities, from product conception, design, distribution, and usage, safeguard the ecosystem (Adams et al. 2016). On the other hand, GINN constitutes a new form of innovation that emphasises creating novel products and technologies that minimise firms' environmental risks and excessive usage of resources (Castellacci & Lie, 2017). Unlike conventional innovation, GINN seeks to lessen environmental dangers (Castellacci & Lie, 2017), enhance resource efficiency (Burki & Dahlstrom, 2017), strive to achieve sustainable development goals (Albort-Morant et al., 2018), and consequently makes firms proactive to environmental issues (Arenhardt et al., 2016).

Nevertheless, GINN does not occur in a vacuum. Instead, it requires meticulous changes in the organisation processes from the institutionalisation of a new green culture (Roy & Khastagir, 2016), creating new organisational processes (Chu et al., 2019), gaining the buy-ins of all top managers (Dangelico, 2016), and finally operationalising the green agenda into actual practice (Ebrahimi & Mirbargkar, 2017). It suggests that a firm's green initiatives' success may mainly

depend on its strategic orientation because the strategy sends the right signals to the operational units (Dumont, Shen, & Deng, 2017). According to Cheng (2020), a firm's failure to institute a new strategic orientation to garner the necessary support for its green identity will weaken its drive for GINN. Accordingly, a firm's strategic orientation, which determines and directs its activities, will provide a solid process to support its GINN (Guo & Wang, 2022). Extant literature has demonstrated that firms that adopt SSO as their new strategic position substantially affect their GINN outputs (Roxas et al., 2017; Guo & Wang, 2022). Since GINN becomes a direct consequence of SSO (Jagani & Hong, 2022), SMEs that guide their business activities with this new strategic orientation will significantly expand their GINN outcomes. It is at this moment hypothesised that for SMEs to recognise a significant shift in their GINN performance, they must first assimilate sustainable strategic orientation into their operational strategies to signal to employees that the firm is strongly dedicated to supporting green thinking and green product design (Awan et al., 2019). Therefore, a positive relationship is anticipated, and this hypothesis is subsequently proposed:

H1: SSO will have a significant positive effect on GINN

Dynamic Capability and Green Innovation

Dynamic capability indicates a firm's ability to sense a market change, build, and reconfigure its internal and external capabilities to adapt to market conditions (Helfat & Martin, 2015). Since the forces within an industry constantly evolve, firms require a combination of capabilities to spot these market changes quicker and reconfigure their internal resources to optimise these new market movements. Therefore, from the capability theory proposition, a firm strategic agenda can be better realised by combining three distinct capabilities; sensing, seizing, transfiguration and reorganising (Helfat & Winter, 2011). As multiple external agents spark most green products, it makes it imperative for firms to have a sensing capability to spot this market request (Kevill et al., 2021). A firm sensing capability becomes critical to its ability to spot market requests and utilise this insight to improve its GINN performance.

Similarly, the existing operational procedures of SMEs may not be congruent with the new strategic direction for green innovation. SMEs' ability to achieve such compatibility will depend on the institutionalisation of a learning capability which facilitates the acquisition and assimilation of this new strategic orientation across every organisational unit (Zahra & George, 2002). Lin and Wu (2014) posit that without institutionalising learning capability, a firm limits its unit's ability to re-learn and adapt its operations in response to the new market need. Learning capability strengthens the acquisition of new market insight and improves a firm unit's awareness about a new strategic direction by transmitting the new insight across every aspect of the organisation. Again, as the existing processes and resources may be insufficient to lead to better GINN, it suggests that SMEs' green innovation success may depend on how they effortlessly reconfigure their existing processes and structures. Therefore, a configurational capability becomes inevitable as it eases a firm's ability to reorganise its internal and external resources to achieve its strategic organisation. SMEs' GINN success will be inherent in the effectiveness of their configurational capability (Zhou et al., 2018). SMEs that fail to nurture and develop these capabilities cannot solely depend on their new strategic orientation to induce the necessary innovation changes. Accordingly, SSO's ability to stimulate the expected impact on SMEs' GINN will depend on the appropriate internal capabilities developed and fostered. GINN's success relies strongly on the cluster of capabilities developed. Therefore, with this, it is hypothesised that:

H2: DC will have a significant positive effect on GINN.

Organisational resilience and green innovation

For small enterprises to make the best of this new sustainable positioning, nurturing resilience becomes more imperative than rapid responses (Doern, 2021). Resilience encapsulates how an enterprise absorbs, recovers, and adapts its processes in response to the disruptions and uncertainty emerging from its business space. Because sustainable innovations are distinct from traditional innovations, SMEs will need to persistently learn from their innovation errors to reduce future errors and make their sustainable innovations better. Resilience, therefore, becomes essential to SMEs' sustainable innovation outcomes, particularly in economies with higher market uncertainties and poorer institutional support, such as developing economies (de Brito et al., 2022). The extant literature indicates that resilience capacity shapes firms' performance outcomes and consequently sharpens their proactiveness towards market turbulence (Lengnick-Hall et al., 2011; Akgün & Keskin, 2014). Accordingly, organisational resilience provides the necessary culture and endurance for a firm to continue with its green innovation agenda. Resilience which becomes an organisational capability must be developed and fostered among SMEs to augment their green innovation. A positive relationship is therefore expected between organisational resilience and SMEs' green innovation. It is as a result of this hypothesised that:

H2: ORR will have a significant positive effect on GINN.

The mediating role of dynamic capability

According to the capability theory (Eisenhardt & Martin, 2000; Teece et al., 1997), a firm's performance success resides on the appropriate resources and capabilities: sensing, learning, integrating, and coordinating (Teece, 2014). Similarly, as GINN is wholly distinct from traditional innovations, new capabilities and resources must be fostered and identified to facilitate a proper transition through this ecological way of creation. Though SSO has evolved to strengthen firms' progression towards sustainable production (Govindan et al., 2020), the inconsistency of SSO's impact on firms' innovation outcomes suggests that additional institutional factors must be nurtured to improve SSO's relationship with green innovation.

Because of the intricacy of ecological issues, businesses aiming to respond to market and industry requests must build an effective relationship with a wide range of external actors (i.e., suppliers, customers, state agencies and manufacturers) (Dangelico et al., 2017). However, such coordination can be built appropriately when the existing structure can effectively spot and make meaning from this new market development. In this case, sensing capability becomes crucial to facilitate coordination with external market insight. Since the SMEs' existing structures may not support a comprehensive consultation and collaboration, firms must build new knowledge and competencies and reconfigure their existing resources to support such exchanges (Dangelico et al., 2017). Failing to transform the existing resources and systems to accommodate this new strategy will limit a firm GINN outcome (Becker & Dietz, 2004). Per the complicity of GINN and SMEs' resource constraints, SSO's impact on SMEs' GINN outcomes will be better explained when the proper institutional capabilities are created and fostered. Therefore, the high presence of dynamic capability is expected to expand SMEs' identification of market requests, capture market opportunities, and transform and reorganise internal and external resources to produce effective GINN outcomes (Helfat & Winter, 2011). It is therefore theorised that:

H3: GDC mediates the relationship between SSO and GINN

The mediating role of organisational resilience

Often than not, when it comes to GINN, more actions would be needed, and organisations may have to modify and redefine their innovation processes to respond better to environmental challenges (Linnenluecke, 2017). Because SMEs in developing economies usually operate in environments where resources are scarce and formal institutions are imperfect (Sutter et al., 2019), resilience becomes crucial to their survival and improves their responses towards environmental uncertainty. Also, as GINN may be incompatible with SMEs existing structures and human capital capabilities, they need to develop a resilient character that can persistently push them to continue with the GINN even when the present outcomes do not meet market requirements or produce better outcomes. According to Nisula and Olander (2020), considering the significant rate at which small businesses project fail, a firm-level attribute (i.e., resilience) may be momentous to inspire SMEs revival in times of despair (Muehlfeld et al., 2017; Nisula & Olander, 2020). Without organisational resilience, small businesses may lose their drive for sustainable innovation pursuits, particularly when the outcomes of their product do not meet the market's environmental needs. de Brito et al. (2022) assert that resilience allows a business entity to absorb, recover, and adapt its activities during disruption and uncertainty. Considering that resilience help entrepreneurs' comebacks and adaptation, examining their mediating role in SSO and SMEs' GINN performance for theory development and enterprise management is crucial. Recognising the uncertainties of green innovations, SMEs' SSO ability to lead to better sustainable outcomes would depend on their organisational resilience. It is therefore hypothesised that SMEs demonstrating higher organisational resilience will report a better outcome of their SSO influence on their firms' green innovation performance. Accordingly, it is hypothesised that:

H4: ORR mediates the relationship between SSO and GINN

Method

The study draws its sample from small and medium businesses in Ghana because existing studies on sustainable orientation have focused more on larger firms in developed economies. Because developing economies' SMEs are resource constraints, using Ghana as the study context significantly contributes to entrepreneurship theory development and pedagogy (Conz & Magnani, 2020). The study will sample SMEs from Accra and Kumasi Metropolis of Ghana because they have the highest presence of SMEs than the other metropolis in the country (Association of Ghana Industries, 2021). These SMEs' activities are spread in agro-processing (food and beverages), pharmaceuticals, electronics and electrical, telecommunications, information technology, utilities, service industries, transport, construction, textiles, garments and leather, banking and advertising. Following earlier scholars' recommendations, the SMEs' owners and managers within these metropolises will be first contacted to sensitise them and seek their consent (Murnieks, Klotz, & Shepherd, 2020). After this initial interaction, SMEs indicating their readiness and willingness will be recruited into the sample.

Also, to minimise the incidence of common method and response bias, the study will use a two-wave approach with an average three-month interval to temporally separate the collection of the independent variable, mediator, and dependent variable data. After retrieving the data at these different times, Pearson's chi-square test for categorisation (Greenwood & Nikulin, 1996) will be used to compare the first and second waves' responses.

With the data analysis symmetrical and asymmetrical approaches will be used for data analysis. Partial least squares path modelling (PLS-SEM) will be used, particularly with the symmetrical analysis. Using PLS-SEM, as noted in the extant literature, becomes suitable primarily when a study seeks to examine the relationships between observed and latent variables concurrently

(Hair et al., 2019). Following the recommendations of Hair et al. (2019), the study will analyse the data in two phases; the measurement indicator will be first computed to establish the validity and reliability of the constructs, and second, the theorised relationships will be tested to identify the extent of the relationship between SSO, DC, ORR and GIN. With an asymmetrical approach, the fsQCA will be employed to re-analyse the data to unravel the possible contrarian cases often overlooked in symmetrical analysis (Pappas & Woodside, 2021). The fsQCA will compute alternative models by joining several factors (causal recipes) to determine several outcomes (i.e., the presence and absence of an outcome (Olya & Nia, 2020)).

Expected contributions

Though the literature on SSO is growing, we still do not know the underlying conditions improving SSO's impact on firms' sustainable innovation outcomes. Therefore, by exploring the mediating role of dynamic capability in the SSO relationship, the study helps clarify the inconsistency between the SSO and GINN literature. Also, by looking at organisational resilience, the study strengthens the role of this firm-level attribute which has been confirmed in the entrepreneurship literature as critical to entrepreneurs' rebound during market uncertainty and times of failure.

Furthermore, employing two opposing analytical approaches (i.e. symmetrical and asymmetrical analysis) in a single study will clarify the contrarian views often overlooked in symmetrical studies. The results will demonstrate whether using symmetrical and asymmetrical approaches in a single study produces better outcomes than using a single analytical approach. The results will lastly approve the usefulness of using asymmetrical and symmetrical approaches in sustainable and SME studies.

Expected Practical Contributions

Aside from the theoretical contributions, the study will provide practical implications for SME managers and policymakers. Specifically, results from the study could inform managers and academics on what dynamic capability to foster to improve SMEs' GINN outcomes. Also, results from the study could help SMEs confirm whether resilience, usually induced by the SME owner or manager, plays a vital role in SME strategic sustainability orientation and green innovation outcomes. Lastly, results from the study will explain which of these underlying conditions improves SMEs' GINN performance in a developing economy.

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