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From 'Responsible' to 'Sustainable': A Contingent Analysis of Responsible Entrepreneurship and Product Innovation Performance in an Emerging Economy

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ABSTRACT

While debate on responsible entrepreneurial activities for sustainable development is burgeoning, studies examining whether small and medium-sized firms (SMEs) can benefit from responsible entrepreneurship remain underexplored. In this study, we draw on stakeholder theory to fill this literature gap by investigating the effect of responsible entrepreneurship on product innovation performance. We also consider the contingent roles of stakeholder relationship capability and environmental information sharing in this relationship. Our results from analysing survey data from 172 firms in Nigeria (an emerging economy) demonstrate that responsible entrepreneurship has a positive relationship with product innovation performance. In addition, we uncover that stakeholder relationship capability amplifies the product innovation performance benefits of responsible entrepreneurship. Furthermore, our results reveal that environmental information sharing strengthens the moderating effect of stakeholder relationship capability on the link between responsible entrepreneurship and product innovation performance. Importantly, these results support our contingent stakeholder perspective on responsible entrepreneurship and offer rich, nuanced insights for utilising responsible entrepreneurship in emerging market firms.

1 | Introduction

Amid the growing concerns on contribution of firms to sustainable development in emerging economies (Ansari 2025a; Luo et al. 2023), responsible entrepreneurship has become a key topical area for scholars and practitioners within the environmental management domain (Dankwah et al. 2026; Ooi et al. 2026). Responsible entrepreneurship reflects the 'entrepreneurial activities that recognize, develop, or exploit opportunities through sustainable innovation to obtain economic, social, or ecological gains in order to improve sustainable development' (Xie and Wu 2022, 804). Prior research indicates that responsible entrepreneurship enables firms to pursue entrepreneurial opportunities that blend ecological and social responsibility with economic feasibility to ensure their survival (Amoako et al. 2026; Tiba et al. 2019). In this sense, responsible entrepreneurship represents a strategic principle of firms and allows for exploring their business endeavours in ethical and sustainable manner especially for firms operating in emerging markets (Adomako and Nguyen 2024). This aligns with the stakeholder theory perspective (Freeman 2010), which encourages firms to organise and conduct their strategic activities as a form of responsibility in fulfilling their social and ecological duties to their stakeholder groups (Amoako et al. 2026; Waheed and Zhang 2022).

Despite the burgeoning scholarly interest on responsible entrepreneurship, previous research has offered limited insights into whether and when responsible entrepreneurship is connected to product innovation performance (see Table 1). Essentially, past studies have mainly focused on the antecedents of responsible entrepreneurship (Adomako and Tran 2023) and its effect on firms' social legitimacy (Adomako and Tran 2025), organisational resilience (Ooi et al. 2026), social innovation (Amoako et al. 2026), female entrepreneurial success (Xie and Wu 2022), value creation for grand challenges (Amoako et al. 2026) and entrepreneurial performance (Dankwah et al. 2026). This suggests a major gap in extant literature on the lack of theoretical precision on whether responsible entrepreneurship could contribute to product innovation performance of firms. Building on the stakeholder theory, which justifies that responsible practices of firms towards their various stakeholders can contribute to firms' success (Harrison and Wicks 2013), product innovation performance serves as one way of assessing firms' success (Jiang et al. 2020). Therefore, our study contends that responsible entrepreneurship should be significantly related to product innovation performance, a topic that nonetheless remains empirically underexplored in environmental management literature. Consequently, the first research question (RQ) of our study is as follows: ***RQ1***. *What is the effect of responsible entrepreneurship on product innovation performance of firms?*

Moreover, while advocates of the stakeholder theory suggest that responsible entrepreneurship represents how firms perform entrepreneurial actions as a form of responsibility (Amoako et al. 2026; Bosse et al. 2023), prior studies recognise that the potency of responsible entrepreneurship as a sustainability-oriented practice is contingent on contextual conditions that can enhance or undermine its relationship with firms' performance outcomes (cf. Dankwah et al. 2026; Vallaster et al. 2019). This highlights another gap in the environmental management literature on the limited theoretical clarity of the differing boundary conditions under which the potency of responsible entrepreneurship might be actualized to drive product innovation performance. Accordingly, our study identifies two key moderating factors (boundary conditions) that are relevant to our study settings. The first one is stakeholder relationship capability, which captures a firm's ability to interact and build close relations with its stakeholders (Jiang et al. 2020). Drawing from a stakeholder theory lens (Freeman 2010), such a capability can shape stakeholders' perceptions and cooperation regarding firms' responsible entrepreneurial practices. As such, our study argues that stakeholder relationship capability could help firms gain better understanding of their stakeholders' needs, thereby potentially complementing the efficacy of responsible entrepreneurship in bolstering product innovation performance. Hence, we formulate the second research question of our study as follows: ***RQ2.*** *Does stakeholder relationship capability moderate the relationship between responsible entrepreneurship and product innovation performance?*

Furthermore, the second moderating factor identified is environmental information sharing, which refers to a firm's exchange of environmental-related information with key partners (cf. Santos et al. 2025; Wu 2008). Extant research suggests that the effectiveness of responsible practices relies on the sharing of environmental-related information to understand stakeholders' concerns and manage environmental uncertainty (Agyabeng-Mensah et al. 2024). Thus, our study considers environmental information sharing as a contingency factor and contends that as firms increase their environmental information sharing, the more likely responsible entrepreneurship will benefit from stakeholder relationship capability. Hence, this leads to the third research question of our study: ***RQ3.*** *To what extent does environmental information sharing influences the moderating effect of stakeholder relationship capability on the relationship between responsible entrepreneurship and product innovation performance*?

To bridge these knowledge gaps and address the above-mentioned research questions, we construct a conceptual framework (see Figure 1) based on stakeholder theory and existing responsible entrepreneurship literature. The framework empirically investigates the relationship between responsible entrepreneurship and product innovation performance. We also conceptualise whether the relationship may potentially be conditioned by both stakeholder relationship capability and environmental information sharing. To validate the conceptualised framework, we collected survey data from 172 technology-focused firms in Nigeria. Nigeria (an emerging economy in Africa) serves as a unique context due to its economy being mainly driven by small and medium-sized firms (SMEs), and these firms strive to balance their economic activities with responsible and sustainable actions due to the social and environmental challenges in society.

Thusly, our study adds to the current literature in four ways. First, our study contributes to the responsible entrepreneurship literature (e.g., Dankwah et al. 2026; Tiba et al. 2019) by validating the positive link between responsible entrepreneurship and product innovation performance. In so doing, we advance past research connecting stakeholder theory and responsible entrepreneurship (Amoako et al. 2026) and respond to calls for more research on responsible entrepreneurship (Adomako and Tran 2025). Second, our study identifies stakeholder relationship capability as a boundary condition that amplifies the effect of responsible entrepreneurship on product innovation performance. This has not been addressed in prior research (Xie and Wu 2022). Thus, we highlight that the efficacy of responsible entrepreneurship becomes more pronounced under conditions of high stakeholder relationship capability. Third, our empirical analysis demonstrates that environmental information sharing further strengthens the moderating role of stakeholder relationship capability on product innovation performance. This extends the environmental information sharing literature (Kim and Kim 2025) by emphasising how environmental information sharing is a fundamental contingency to the successful complementarity synergy of responsible entrepreneurship and stakeholder relationship capability in firms. Accordingly, we advance the contingency perspective of responsible entrepreneurship in environmental management domain (Dankwah et al. 2026). Lastly, by utilising firms in the unique context of Nigeria, our study offers contextualised empirical insights from an underexplored setting and adds to a balanced perspective on the importance of responsible entrepreneurship for firms' success.

The remainder of our article is structured as follows. The subsequent section focuses on the conceptual development and

TABLE 1 | Relevant empirical quantitative studies relating to responsible entrepreneurship.

Study	Theory	Empirical setting	Predictor(s)	Moderator(s)	Mediator(s)	Consequence(s)	Key findings
Xie and Wu (2022)	(1) Role congruity theory; (2) Feminist theory	337 female entrepreneurs from new start-up companies in China	n/a	Perceived gender discrimination	Opportunity recognition	Female entrepreneurial success	Responsible entrepreneurship has an indirect positive relationship with female entrepreneurial success via opportunity recognition. However, perceived gender discrimination diminishes the effect of responsible entrepreneurship on opportunity recognition.
Adomako and Tran (2023)	Legitimacy theory	Survey data from 282 entrepreneurs based in Vietnamese entrepreneurial ventures	CSR legitimacy	(1) CSR commitment; (2) Local embeddedness	n/a	n/a	CSR legitimacy positively influences responsible entrepreneurship. Also, high CSR commitment strengthens the moderation effect of local embeddedness in the link between CSR legitimacy and responsible entrepreneurship.
Adomako and Nguyen (2024)	Atheoretical	Data from 220 service and manufacturing ventures in Ghana	n/a	n/a	Social innovation	Entrepreneurial performance	The association between responsible entrepreneurship and entrepreneurial performance is positively mediated by social innovation.
Adomako and Tran (2025)	Legitimacy theory	231 manufacturing firms operating in Vietnam	n/a	(1) Customer demandingness; (2) Market turbulence	n/a	Social legitimacy	Responsible entrepreneurship is a positive driver of social legitimacy, and the relationship is amplified by both customer demandingness and market turbulence.
Ooi et al. (2026)	(1) Resource-based view; (2) Dynamic capabilities perspective	410 tourism SMEs based in Malaysia	n/a	Digital capabilities	Organisational resilience	Sustainability performance	Responsible entrepreneurship is positively linked to sustainability performance through organisational resilience. Also, digital capabilities strengthens the impact of responsible entrepreneurship on organisational resilience.

(Continues)

TABLE 1 | (Continued)

Study	Theory	Empirical setting	Predictor(s)	Moderator(s)	Mediator(s)	Consequence(s)	Key findings
Amoako et al. (2026)	Stakeholder theory	409 SMEs in South Africa	n/a	Sustainable development goals (SDG) commitment	Social innovation	Value creation for grand challenges	Responsible entrepreneurship positively affects value creation for grand challenges. The relationship is also mediated by social innovation. Moreover, SDG commitment enhances the link between responsible entrepreneurship and social innovation.
Dankwah et al. (2026)	Atheoretical	283 SME firms in Ghana	Sustainability orientation	Bottom-of-the-pyramid (BoP) orientation	n/a	Entrepreneurial performance	Through responsible entrepreneurship, sustainability orientation connects to entrepreneurial performance. In addition, BoP orientation reduces the influence of responsible entrepreneurship on entrepreneurial performance.
Our study	Stakeholder theory	172 technology-focused firms in Nigeria	n/a	(1) Stakeholder relationship capability; (2) Environmental information sharing	n/a	Product innovation performance	Responsible entrepreneurship has a positive effect on product innovation performance. Also, this effect is strengthened when both stakeholder relationship capability and environmental information sharing is high.

Source: Own development.
Abbreviation: n/a = not applicable.

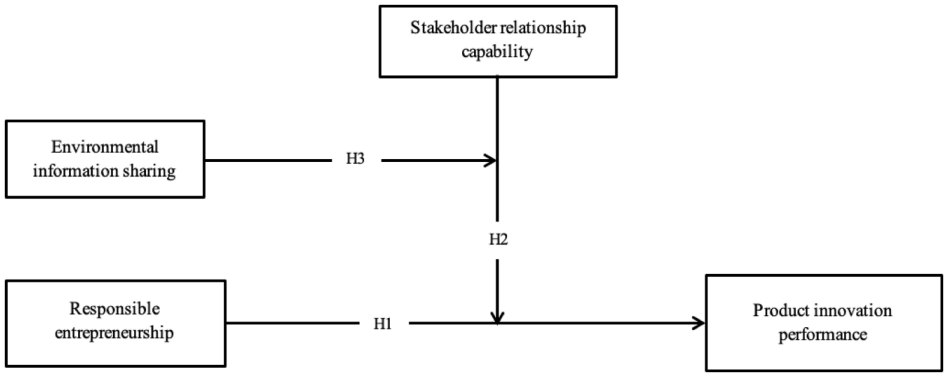

FIGURE 1 | Hypothesised framework. *Source:* Own development.

hypotheses. Next, we discuss the research methods and measurement of constructs. Following this, we present the results and conclude with a discussion of the study implications, limitations and future research opportunities.

2 | Conceptual Development and Hypotheses

2.1 | Stakeholder Theory and Responsible Entrepreneurship

In the domain of environmental management, the concept of responsible entrepreneurship has begun to receive increasing interest among scholars due to its relevance to sustainability and sustainable development goals (SDGS) realisation (Vallaster et al. 2019). Responsible entrepreneurship captures firms sustainability-related actions to integrate social, ethical and environmental values into their entrepreneurial endeavours and value creation (Zhang and M. Murad 2026). Within this broader sustainability agenda (Ozili 2022), recent literature indicates that responsible entrepreneurship has emerged as a key mechanism for addressing social and environmental problems in society (Adomako and Nguyen 2024). For instance, Ooi et al. (2026) demonstrated that responsible entrepreneurship is a transformative stakeholder-oriented approach that firms can adopt to deal with uncertainty and contribute to environmental stewardship. Additionally, Amoako et al. (2026) emphasised that firms engaging in responsible entrepreneurship can bolster their value creation for grand challenges.

Given that the concept of responsible entrepreneurship is rooted in a firm's economic, environmental and social responsibility to its stakeholders (Adomako and Tran 2025; Gallardo-Vázquez et al. 2024), we build our study on the stakeholder theory lens. The stakeholder theory proposes that rather than focusing solely on profit, firms have moral obligations to their stakeholder groups such as customers, employees, communities, suppliers and society (Donaldson and Preston 1995). It offers firms an ethical and sustainable framework for rethinking entrepreneurial problems so that the economic, environmental and social interests of its stakeholders are well managed, and this will generate more value for the firm (Harrison and Wicks 2013; Parmar et al. 2010). As such, firms are encouraged to consider the sustainability needs of stakeholders since relationships with these stakeholders give access to vital organisational resources for innovation (Intenza et al. 2026; Watson et al. 2018).

By considering stakeholder interests, advocates of stakeholder theory emphasise that firms must balance entrepreneurial actions with social, economic and environmental goals to ensure business survival (Amoako et al. 2026). This suggests that firms must explicitly pursue market opportunities and coordinate their entrepreneurial activities responsibly (Bosse et al. 2023). This aligns with the concept of responsible entrepreneurship, which involves the integration of stakeholders' needs into the exploitation of entrepreneurial opportunities along three crucial aspects of economic, social or ecological benefits to ensure sustainable development (Xie and Wu 2022; Zhang and M. Murad 2026). Therefore, from a stakeholder theory perspective (Donaldson and Preston 1995), responsible entrepreneurship, as a stakeholder management approach, enables firms to use their entrepreneurial actions to tackle social and ecological challenges while also pursuing organisational economic objectives (Amoako et al. 2026). By acknowledging the different needs of their stakeholders and the societal well-being, responsible entrepreneurship demands that firms follow strategies that create value and incorporate ethical conduct, social accountability and environmental consideration (Gallardo-Vázquez et al. 2024). This suggests that firms engaging in responsible entrepreneurial activities could relatively achieve better organisational outcomes than firms that do not (Ooi et al. 2026). Drawing on previous research positioning of responsible entrepreneurship as a sustainability-related practice of firms that can support innovation (Adomako and Nguyen 2024; Zhang and M. Murad 2026), our study contends that responsible entrepreneurship may have far-reaching impact on the product innovation performance of firms in emerging markets. Product innovation performance, defined as the extent to which firms achieve their new product objectives (Chung et al. 2025; Liu and Atuahene-Gima 2018). In the context of environmental management in emerging markets, success in product innovation is critical for adapting to environmental dynamism and staying competitive in the marketplace to ensure sustainable development (Adomako and Nguyen 2023; Ceptureanu et al. 2026). Regardless, the empirical scrutiny on whether firms can utilise responsible entrepreneurship to promote product innovation performance remains relatively underexplored in extant literature.

Moreover, in line with contingent nature of sustainability-related practices in environment management domain (Nwoba et al. 2021), previous research suggests that the efficacy of responsible entrepreneurship in fostering product innovation performance may be contingent on contextual conditions in the environment (Adomako and Tran 2025; Dankwah et al. 2026). Furthermore, since developing strong relations with stakeholders is central to firms' product innovation efforts in emerging economy markets, this encourages firms to build the ability to have close interactions and connections with their stakeholder groups (Jiang et al. 2020). In this sense, firms' capability to build committed and trustworthy interactions with their stakeholders can help boost their performance outcomes (Luo and Du 2015; Valiyan et al. 2022). This aligns with the core premise of stakeholder theory in that relationship-building with stakeholders is central to responsible practices and attaining competitive advantage (cf. Jiang et al. 2023; Zhang and M. Murad 2026). Thusly, our study argues that stakeholder relationship capability emerges as a critical contextual factor in the potential link between responsible entrepreneurship and product innovation performance because the competency to develop relations with stakeholders is closely associated with the effectiveness of firms' responsible entrepreneurship practices.

Besides, in the context of stakeholder management, by developing stakeholder relations and considering their well-being, firms engage in environmental information sharing to potentially support their responsible entrepreneurship activities. Environmental information sharing ensures firms can exchange information relating to the environment with their partners (Kim and Kim 2025; Lai et al. 2015). From a stakeholder lens, this can support firms in collecting diverse feedback, enable collaborations with their different stakeholders and enhance decision-making quality to drive operational success (Agyabeng-Mensah et al. 2024). Yet very little is empirically known about how the moderating impact of these two boundary conditions (i.e., stakeholder relationship capability and environmental information sharing) influences the relationship between responsible entrepreneurship and product innovation performance. Understanding these moderating influences could guide the effective development and implementation of responsible entrepreneurship activities in firms.

2.2 | Responsible Entrepreneurship and Product Innovation Performance

In today's business environment, responsible entrepreneurship is critical to a firm's market survival, as it ensures it can gain market visibility, environmental legitimacy and contribute to the transformation of its industry (Sanford 2014; Vallaster et al. 2019). In this study, we conceptualise responsible entrepreneurship as the 'entrepreneurial activities that recognize, develop, or exploit opportunities through sustainable innovation to obtain economic, social, or ecological gains in order to improve sustainable development' (Xie and Wu 2022, 804). Previous research highlights that responsible entrepreneurship enables firms to consider the economic, social and ecological impacts of their entrepreneurial actions on sustainable development (Ooi et al. 2026). This can ensure that new ideas enter the innovation process and support firms' product innovation outcomes (cf. Luo and Du 2015). Hence, we expect that responsible entrepreneurship could lead to improvement in product innovation performance.

First, responsible entrepreneurship helps firms build a business model that can drive sustainable and ethical practices (Dankwah et al. 2026; Azmat and Samaratunge 2009). This encourages firms to recognise the socio-ecological needs of their host communities, rethink their conventional product designs and seek innovative product solutions that can bring benefits to their diverse stakeholders (Amoako et al. 2026). This can help firms to become responsible environmental stewards and address environmental concerns of their business (cf. Ansari 2025a). This way, responsible entrepreneurship allows the firm to adopt an eco-friendly innovation process, which could assist in pursuing product innovation activities that consider environmental and social impacts (Gallardo-Vázquez et al. 2024). For instance, communities usually demand that sustainability be embedded in the product innovation of firms. By engaging in responsible entrepreneurship practices, firms can recognise such demand and develop and refine their products to meet those requirements, thereby enhancing their product innovation performance.

Second, engaging in responsible entrepreneurial activities could incentivise product innovation performance by providing firms with more opportunities to innovate. Since responsible entrepreneurship requires firms to pay attention to the ecological and social concerns of their external partners and take a long-term perspective in making decisions (Adomako and Nguyen 2024), this allows firms to consider opportunities to innovate as a responsible activity (Ooi and Memon 2025). This can drive research and development (R&D) and co-creation activities with stakeholders to create product innovations that have value for society. In this respect, responsible entrepreneurship could aid firms in differentiating their products in the marketplace, gaining wide acceptance from different stakeholders and reducing disruption to the product innovation process (cf. Adomako and Tran 2025). As such, responsible entrepreneurship may lead to improved product innovation performance.

In addition, responsible entrepreneurship signals a firm's commitment to engage with customers and consider their 'voice' in the innovation process (Amoako et al. 2026). As suggested by extant literature, a high level of responsible entrepreneurship signals that rather than acting out in complete self-interest, firms aim to show 'ethics of care' and offer innovative products that can add more sustainable value to their customers' well-being (Xie and Wu 2022). For instance, firms can integrate green technology into their product innovation process to develop eco-friendly products that are environmentally safe for customer use. Such an effort can help build a strong foundational customer support and strengthen the business's legitimacy with the customers and other stakeholders of the firm. This can also boost product innovation success by assisting in attracting customers to the firm's new products and encouraging early adopters to try the products (Wei et al. 2017).

Based on the arguments above, we predict that responsible entrepreneurship is a positive driver of product innovation performance. Hence, we formulate that:

Hypothesis 1. *Responsible entrepreneurship has a positive relationship with product innovation performance.*

2.3 | Moderating Role of Stakeholder Relationship Capability

Stakeholder relationship capability represents firms' competence to interact, cooperate and build close relationships with their stakeholders (Jiang et al. 2020). By actively developing stakeholder relationship capability, firms demonstrate a competence to have a two-way dialogue, including honest communication with their stakeholders (e.g., employees, customers, suppliers and the community) to ensure they can understand their stakeholder expectations (Panda and Sangle 2020). From a stakeholder theory perspective (Valentinov and Chia 2022), this suggests that firms with strong stakeholder relationship capability can effectively map their stakeholders, recognise their perceived concerns and monitor how their firms' entrepreneurial actions impact stakeholder relationships (Baranova 2022; Zakhem 2008). As such, past research has noted that developing strong stakeholder relationship capability is important for responsible practices (Clifton and Amran 2011; Waheed and Zhang 2022) and for firms' product innovation (Jiang et al. 2020).

Therefore, we argue that stakeholder relationship capability could enhance the positive link between responsible entrepreneurship and product innovation performance for a number of reasons. First, as stakeholder relationship capability increases, firms engage in continuous interactions with their stakeholders and develop a better understanding of their stakeholders' concerns about their business operations and environmental actions (Zhao et al. 2021). Under such conditions, firms can align their responsible entrepreneurial activities with stakeholders' demands, and this would boost the credibility of their organisations. This can potentially heighten the positive influence of responsible entrepreneurship on product innovation performance.

Furthermore, possessing a strong stakeholder relationship capability allows firms to develop close relationships and high levels of trust with their stakeholders, which is characterised by interdependence (Liu and Yin 2020). This can facilitate access to resources that can support a firm's obligations to align their product innovation activities with broader social, ecological and ethical values (cf. Jiang et al. 2020). For example, a strong stakeholder relationship capability can support firms in building key partnerships and ethical sourcing of raw materials with their suppliers to facilitate product innovation. Hence, firms with robust responsible entrepreneurship practices would pay attention to developing strong stakeholder relationships to access critical resources to advance their product innovation performance.

Lastly, responsible entrepreneurship requires firms to follow a stakeholder-oriented perspective that prioritises responsiveness to the changing dynamics of their stakeholders' needs and the environment (Adomako and Tran 2023; Ooi et al. 2026). To deal with such dynamism, firms must engage with stakeholders and adapt their practices to gain stakeholders' trust (Dankwah et al. 2026). Accordingly, a strong stakeholder relationship capability provides firms with room to cooperate with stakeholders, reduce innovation costs and structure their organisational processes to reflect changing stakeholders' expectations (Vaquero Martín et al. 2016). This can support firms in balancing competing stakeholders' goals, minimising ecological impact of their entrepreneurial practices and refining their product innovations to enhance shared value creation (Ortiz-Avram et al. 2024).

Therefore, we contend that the positive impact of responsible entrepreneurship on product innovation performance is more pronounced when stakeholder relationship capability is high. Accordingly, we predict that:

Hypothesis 2. *Stakeholder relationship capability positively moderates the relationship between responsible entrepreneurship and product innovation performance.*

2.4 | Contingency Impact of Environmental Information Sharing

Moreover, our study examines a boundary condition of stakeholder relationship capability's moderating effect on the relationship between responsible entrepreneurship and product innovation performance, focusing on how environmental information sharing affects this relationship. This aligns with the contingency-driven approach in sustainability-oriented research where scholars contend that contextual conditions shape the effectiveness of sustainability-related practices such as responsible entrepreneurship (Amoako et al. 2026; Dankwah et al. 2026). Keeping in line with this logic, we propose that environmental information sharing is a contingency factor that can influence the moderating effect of stakeholder relationship capability.

In the context of our study, environmental information sharing refers to the extent to which firms exchange environmentally related information with their key partners (cf. Santos et al. 2025; Wu 2008). Past research indicates that by actively participating in environmental information sharing, firms can capture insights that support environmentally responsible initiatives (Chavez et al. 2021; Kim and Kim 2025). This suggests that environmental information sharing is vital to developing strong relationships with firms' key stakeholders (Santos et al. 2025). Hence, strong environmental information sharing can promote distinctive visibility of the firm among stakeholders, support the integration of stakeholders' feedback into responsible practices and leverage it to bolster organisational innovation outcomes (cf. Lai et al. 2015; Solér et al. 2010). Thus, we propose that environmental information sharing could amplify the moderating effect of stakeholder relationship capability on the relationship between responsible entrepreneurship and product innovation performance.

Additionally, according to the stakeholder theory (Harrison and Wicks 2013), environmental information sharing with stakeholders can provide firms with cues on how to respond to environmental concerns related to their activities. This can help firms to seek stakeholder consultations, flag risks and make responsible decisions on product innovation (Jiang et al. 2020).

Therefore, under conditions of high environmental information sharing, firms may develop a stronger stakeholder relationship capability as they are able to reduce information asymmetry, demonstrate stakeholder commitment and mitigate perceptions of irresponsible entrepreneurial behaviours.

Also, in the context of high environmental information sharing, firms engage in reciprocal interactions with their stakeholders to ensure they are valued and can help reduce conflicts of interest (Agyabeng-Mensah et al. 2024). For example, rich environmental information exchange can strengthen cooperation and legitimacy of firms with stakeholders. This can further induce better stakeholder relationship capability (Santos et al. 2025). On the other hand, when environmental information sharing is low, this can reduce firms' engagement and transparency with their stakeholders. As such, firms' leverage of stakeholders' relationship capability to support the effectiveness of their responsible entrepreneurship practices could be weakened. Accordingly, we argue that high levels of environmental information sharing could enhance the moderating effect of stakeholder relationship capability on product innovation performance.

Lastly, by developing a strong environmental information sharing, firms can introduce activities that allow their diverse stakeholders to contribute to the firm's responsible initiatives, which boosts knowledge transfer and mutual learning (Ortiz-Avram et al. 2024). This process can help convert external knowledge into a pool of knowledge resources and turn stakeholders into problem-solving partners (Luo and Du 2015). This can further enhance the firm's stakeholder relationship capability. Contrastingly, when environmental information sharing is low, firms may have less mutual environmental information exchanges with their stakeholders, thereby reducing their ability to protect their stakeholder relationships. Therefore, our study anticipates that during high levels of environmental information sharing, firms' ability to interact effectively and build strong connections with their stakeholders can heighten the effect of responsible entrepreneurship on product innovation performance. Consequently, we hypothesise that:

Hypothesis 3. *The moderating effect of stakeholder relationship capability on the relationship between responsible entrepreneurship and product innovation performance is stronger when environmental information sharing is high than when it is low.*

Figure 1 presents the hypothesised framework of our study.

3 | Methods

3.1 | Sample and Data Collection

Our study focuses on technology-focused firms operating in the SME sector in Nigeria, an emerging economy in Africa with a dynamic entrepreneurial setting, to validate the study hypotheses.[1] First, the Nigerian SME sector is a key driver of sustainable development and contributes significantly to the nation's economic and social growth (Adeyemi et al. 2024). Over the years, Nigerian SMEs have begun embracing responsible practices and supporting the tackling of social and ecological challenges to promote sustainability in the country (Adesua-Lincoln 2025). Additionally, since the Nigerian environment is constrained by inadequate resources and pressing social issues like other emerging markets, SMEs often adopt responsible entrepreneurship as a strategically oriented response to attract external partners, drive their innovation and bolster competitiveness (cf. Amoako et al. 2026). Therefore, Nigeria offers an appropriate setting to examine our research model.

Our sampling frame comprised 500 firms purposefully drawn from the Nigerian Business Directory database. The sample eligibility criteria for the firms were as follows: (1) The firms should be private independent businesses and not a subsidiary, (2) registered firms owned and managed by entrepreneurs and (3) have between 10 and 199 employees to meet the legal definition of SMEs in Nigeria. Due to the lack of publicly available secondary data to examine the research model (Frimpong et al. 2025), we collected dyadic primary data through a survey of multiple informants (i.e., chief executive officers (CEOs)/owners and senior managers) in the sampled firms.

Before data collection commenced, pilot discussions were conducted with expert judges (three academics and 10 senior executives) to comment on the developed questionnaire items and determine face validity. This process helped us refine and ensure the contextual relevance of our survey (Intenza et al. 2026). Next, we contacted the senior executives of the sampled firms to solicit their voluntary participation. We explained the purpose of the study, rights of participants and requested their informed consent to participate in the survey. Also, we promised them the anonymity of their responses and offered to share the aggregated findings from the research to incentivise their participation (Adomako and Nguyen 2023). Based on prior research recommendation (Dankwah et al. 2026), we employed a multiple-informant approach by administering the questionnaire to two respondents from each firm. In particular, the data relating to responsible entrepreneurship, stakeholder relationship capability, environmental information sharing and the control variables were collected from CEOs/owners, whereas information on the dependent variable, i.e., product innovation performance, was gathered from general managers. This approach helps to mitigate single-source bias and ensure gathering of high-quality reliable data (Intenza al. 2026; Kock et al. 2021).

We obtained 172 fully completed responses for analysis after removing three cases with incomplete/invalid data points. Of the 172 final sample, 29.7% of the firms were less than 5 years, 23.3% were between 6 and 10 years, whereas the remaining 47.1% (the majority) were above 10 years as an establishment. For the CEOs managerial experience, 47.1% had less than 5 years of managerial experience, 30.8% had 6–10 years of managerial experience and 22.1% had more than 10 years of managerial experience.

3.2 | Measures

We measured the main variables using perceptual scales derived and adapted from extant literature (Intenza et al. 2026). All multi-item constructs were evaluated with a 7-point Likert-type rating (Appendix A reports the measurement items). For multiple-item constructs, we averaged the summed item scores to create the construct score.

3.2.1 | Responsible Entrepreneurship

Our study operationalised responsible entrepreneurship with a five-item scale adapted from Xie and Wu (2022). The items have been used in past research and captured the extent to which firms engage in responsible entrepreneurial activities (Adomako and Nguyen 2024; Dankwah et al. 2026). The coefficient alpha (α) is 0.855.

3.2.2 | Stakeholder Relationship Capability

We operationalised stakeholder relationship capability with a four-item scale based on insights derived from Jiang et al. (2020). The measure evaluated a firm's ability to build and sustain close relationships with their stakeholders. An exploratory factor analysis indicated that the four items represented a single factor for the construct. The coefficient alpha (α) is 0.927.

3.2.3 | Environmental Information Sharing

We derived a measure of environmental information sharing using four items modified from extant research on information sharing (Wu 2008). The items assessed firms' effectiveness in mutually exchanging environmental information with key partners in the environment. The coefficient alpha (α) is 0.762.

3.2.4 | Product Innovation Performance

Our study utilised four items modified from prior research to subjectively evaluate product innovation performance (Liu and Atuahene-Gima 2018; Pan et al. 2019). The firms were instructed to compare their product innovation performance against their industry competitors within the past 2 years. Subjective evaluation of product innovation performance is common in survey-based environmental management research (e.g., Adomako and Nguyen 2023), as it can serve as a proxy for objective performance data (Wei et al. 2025). Also, extant literature indicates that subjective performance data often correlate significantly with objective performance (Lanivich et al. 2025; Liu and Atuahene-Gima 2018), supporting our use of perceptual performance data in this study. The coefficient alpha (α) is 0.935.

3.2.5 | Control Variables

Following prior research advice, we controlled for a series of firm and environment-related variables that might influence our research model (Adomako and Nguyen 2024; Jiang et al. 2020). Specifically, we controlled for firm age, managerial experience, competitive intensity and environmental turbulence. Firm age is operationalised as the log-transformed number of operational years since a firm's establishment. Younger firms may face more resource challenges than older firms, which could constrain their socio-ecological activities. Managerial experience is captured as the log-transformed number of years of the CEOs professional tenure (Intenza et al. 2026). Older managers might have an experience-based leverage over their younger counterparts. Also, because environmental conditions can influence a firm's activities, we followed Ko and Liu (2019) and controlled for competitive intensity and environmental turbulence. Both measures were rated using single items on a 7-point Likert-rating, ranging from 1 = *strongly agree* to 7 = *strongly disagree*, to evaluate environmental uncertainty affecting product innovation performance.

3.3 | Assessment of Biases

We checked for the potential of nonresponse bias by conducting a *t*-test to compare early versus late respondent groups with respect to the study's main variables (Armstrong and Overton 1977). The results indicated no statistically significant differences ($p < 0.05$) between the two groups. Accordingly, nonresponse bias is not a substantial threat to our study. Moreover, because the data in our study were from a cross-sectional survey, we adopted both procedural and post hoc approaches to address common method bias (CMB). For the procedural approach, we took several steps: (1) We consulted with expert judges to establish whether the questionnaire statements were unambiguous; (2) we promised the participants that their responses would be anonymised-at-source; (3) informed participants that there is no correct or incorrect answer to the questions; (4) we used a multiple-informant strategy to collect information on the constructs; and (5) the items for the constructs were placed in different sections in the survey to ensure proximal separation of measures. These steps assist in reducing CMB (Kock et al. 2021). For the post hoc approach, we conducted a method-only CFA version of Harman's single factor test in which all multi-item scales were loaded onto a single factor. The results suggested a poor model fit with the data: $SBX^2 = 719.323$, $df = 119$, $X^2/df = 6.045$, $p < 0.001$, $CFI = 0.557$, $TLI = 0.494$, $RMSEA = 0.205$ and $SRMR = 0.148$. This indicates that CMB is not a major threat to our study.

4 | Analysis and Results

4.1 | Construct Validity and Reliability

Prior to testing the specified hypotheses, we assessed the validity and reliability of our measurement model using *lavaan* package in R (Rosseel 2012). Specifically, a confirmatory factor analysis (CFA) with robust maximum likelihood estimation was performed to validate the psychometric properties of the constructs. The CFA results indicated that the measurement model has an acceptable fit with the data: Satorra–Bentler chi-square (SBX^2) = 165.095, degree of freedom (df) = 98, $p < 0.001$, comparative fit index (CFI) = 0.954, Tucker–Lewis index (TLI) = 0.943, root mean square error of approximation (RMSEA) = 0.072 and standardised root mean squared residual (SRMR) = 0.054.

Also, the standardised loadings of all items were statistically significant ($p < 0.001$), and the composite reliability was above the 0.70 suggested threshold (see Table 2). This indicates adequate internal consistency for the constructs. Additionally, the average variance extracted (AVE) values of each construct were greater than 0.50, confirming the convergent validity (Hair et al. 2019). To establish discriminant validity, we found that the square root of the AVE values for each construct exceeded

TABLE 2 | Measurement properties.

Constructs and indicators	Standardised loadings	*z*-value	CR	AVE
Responsible entrepreneurship			0.863	0.554
REP1	0.657***	Fixed		
REP2	0.784***	6.980		
REP3	0.737***	7.330		
REP4	0.782***	6.803		
REP5	0.739***	7.335		
Stakeholder relationship capability			0.932	0.768
SRC1	0.772***	Fixed		
SRC2	0.904***	10.628		
SRC3	0.931***	11.579		
SRC4	0.895***	10.653		
Environmental information sharing[a]			0.760	0.515
EIS1	0.689***	Fixed		
EIS3	0.748***	7.123		
EIS4	0.717***	6.686		
Product innovation performance			0.932	0.787
PIP1	0.910***	Fixed		
PIP2	0.959***	23.271		
PIP3	0.863***	15.892		
PIP4	0.798***	10.650		
Model fit: $SBX^2_{[98]} = 165.095$, $X^2/df = 1.685$, CFI = 0.954, TLI = 0.943, RMSEA = 0.072, SRMR = 0.054.				

Source: Own development.
Abbreviations: AVE = average variance extracted; CR = composite reliability.
***$p < 0.001$.
[a]EIS2 dropped due to loading below 0.650 threshold.

TABLE 3 | HTMT matrix.

Constructs	1	2	3	4
1. Responsible entrepreneurship	—			
2. Stakeholder relationship capability	0.747	—		
3. Environmental information sharing	0.643	0.520	—	
4. Product innovation performance	0.522	0.424	0.205	—

Source: Own development.

the highest intercorrelation among the constructs. Moreover, we calculated the heterotrait–monotrait ratio of correlations (HTMT) (Henseler et al. 2015). The results in Table 3 suggest that all HTMT ratios are below the 0.850 strict threshold. These results affirm that the constructs have adequate construct validity and are distinguishable from one another (Hair et al. 2019). Table 4 shows the means, standard deviations and zero-order correlations of the variables. All correlations were less than 0.70 suggesting that multicollinearity is not serious concern in the study (Hair et al. 2019).

4.2 | Hypothesis Testing

Given the interactional nature of our study, we employed a hierarchical moderated regression analysis to validate the hypotheses, as it is well-suited to testing moderation effects (Hayes 2022). Before conducting the regression analysis, the main predictor variables involved in the interaction were mean-centred prior to creating their multiplicative terms. This mitigates multicollinearity and facilitates the interpretation of the moderation results (Aiken and West 1991). Thusly, we created

TABLE 4 | Descriptive statistics and intercorrelations.

Constructs	Mean	Standard deviation	1	2	3	4	5	6	7	8
1. Firm age[a]	0.679	0.470	—							
2. Managerial experience[a]	0.456	0.456	0.424***	—						
3. Competitive intensity	6.000	1.563	0.112	0.075	—					
4. Environmental turbulence	5.540	1.652	0.025	0.013	0.638***	—				
5. Responsible entrepreneurship	5.167	1.291	0.006	−0.063	0.522***	0.408***	**0.744**			
6. Stakeholder relationship capability	5.349	1.545	0.069	0.062	0.526***	0.334***	0.659***	**0.876**		
7. Environmental information sharing	4.897	1.275	−0.011	−0.128	0.353***	0.244**	0.521***	0.439***	**0.718**	
8. Product innovation performance	5.260	1.234	0.009	0.038	0.302***	0.253***	0.462***	0.397***	0.180*	**0.887**

Source: Own development.
Note: Square root values of average variance extracted (AVE) are shown on the bold diagonal.
***$p < 0.001$.
**$p < 0.01$.
*$p < 0.05$.
[a]Natural logarithm.

four multiplicative terms to estimate the moderation paths: (a) responsible entrepreneurship × stakeholder relationship capability; (b) responsible entrepreneurship × environmental information sharing; (c) stakeholder relationship capability × environmental information sharing; (d) responsible entrepreneurship × stakeholder relationship capability × environmental information sharing.

Table 5 reports the unstandardised estimated effects on product innovation performance across three models. Model 1 assessed the direct effects of responsible entrepreneurship and the control variables ($R^2 = 0.225$). Model 2 includes the control variables, responsible entrepreneurship and the interactive effects of stakeholder relationship capability ($\Delta R^2 = 0.059$). Finally, Model 3 builds on Model 2 by including environmental information sharing and the three-way interaction term among responsible entrepreneurship, stakeholder relationship capability and environmental information sharing ($\Delta R^2 = 0.035$). An evaluation of the diagnostic statistics of variance inflation factors (VIFs) for the predictors and interaction terms in the regression models showed that all resulting VIF values (ranged from 1.231 to 4.961) were below the accepted threshold of 10 (Neter et al. 1990), suggesting that multicollinearity does not severely threaten the analysis.

Hypothesis 1 predicted that responsible entrepreneurship is positively related to product innovation performance. As Table 5 (Model 1) reveals, the relationship between responsible entrepreneurship and product innovation performance is significantly positive ($b = 0.404$, $p < 0.001$). This provides support for Hypothesis 1.

In Hypothesis 2, we posited that stakeholder relationship capability moderates the relationship between responsible entrepreneurship and product innovation performance such that the positive relationship is strengthened. Our results in Table 5 (Model 2) suggest that the interaction of responsible entrepreneurship and stakeholder relationship capability is positively related to product innovation performance ($b = 0.112$, $p < 0.001$), indicating support for Hypothesis 2. Based on Aiken and West's (1991) suggestion, we performed a spotlight analysis (i.e., 'pick-a-point' approach) and graphed the interaction relationship in Figure 2. As illustrated in Figure 2, the positive relationship between responsible entrepreneurship and product innovation performance is stronger during periods of high stakeholder relationship capability (one SD above the mean) ($b = 0.523$, $t = 4.885$, $p < 0.000$) but weaker in periods of low stakeholder relationship capability (one SD below the mean) ($b = 0.177$, $t = 1.772$, $p = 0.078$).

For Hypothesis 3, our study stated that environmental information sharing strengthens the moderating effect of stakeholder relationship capability on the relationship between responsible entrepreneurship and product innovation performance. Consistent with our prediction, the three-way interaction of responsible entrepreneurship, stakeholder relationship capability and environmental information sharing was positively related with product innovation performance (Model 3: $b = 0.054$, $p < 0.05$). To decompose this three-way interaction result, we conducted a spotlight analysis and plotted the interaction in Figure 3. As shown in Figure 3 (combining high/low stakeholder relationship capability and high/low environmental information sharing), the effect of responsible entrepreneurship on product innovation performance is significantly stronger at high levels of environmental information sharing and stakeholder relationship capability than at any other combinations of both moderators (also, see Table 6). Accordingly, our results support Hypothesis 3.

TABLE 5 | Regression results.

	Dependent variable: Product innovation performance					
	Model 1		Model 2		Model 3	
Independent variables	**Coefficient**	***t*-value**	**Coefficient**	***t*-value**	**Coefficient**	***t*-value**
Controls						
Managerial experience	0.200	0.973	0.166	0.832	0.162	0.808
Firm age	−0.083	−0.417	−0.010	−0.050	−0.023	−0.118
Competitive intensity	0.037	0.479	0.076	0.959	0.069	0.862
Environmental turbulence	0.038	0.572	0.061	0.940	0.036	0.548
Main effects						
H_1: Responsible entrepreneurship (REP)	0.404***	5.197	0.350***	3.911	0.321***	3.333
Stakeholder relationship capability (SRC)			0.169*	2.240	0.173*	2.279
Environmental information sharing (EIS)					−0.113	−1.384
Two-way interaction						
H_2: REP×SRC			0.112***	3.322	0.166***	3.427
REP×EIS					0.081	1.239
SRC×EIS					−0.020	−0.316
Three-way interaction						
H_3: REP×SRC×EIS					0.054*	2.582
Model statistics						
R^2	0.225		0.284		0.319	
ΔR^2	—		0.059		0.035	
Adjusted R^2	0.201		0.253		0.273	
F-value	9.618***		9.289***		6.826***	
Largest VIF	2.008		2.333		4.961	

Source: Own development.
Note: Unstandardised coefficients are reported.
Abbreviation: VIF = variance inflation factor.
***$p < 0.001$.
*$p < 0.05$.

Furthermore, to better probe our Hypothesis 3 result, we followed Hayes' (2022) advice and performed a floodlight analysis using the Johnson–Neyman (JN) technique to mathematically derive the specific observed value within the range of environmental information sharing at which the conditional two-way interaction between responsible entrepreneurship and stakeholder relationship capability transitions from statistically significant to nonsignificant. The JN analysis (see Figure 4) revealed that the threshold value of environmental information sharing lies at 3.491 on the 1–7 scale, with 86.63% of our sample above this threshold and 13.37% below it. As shown in Figure 4, when environmental information sharing is above 3.491, the two-way interaction effect of responsible entrepreneurship and stakeholder relationship capability on product innovation performance is statistically positive and significantly different from zero. Below this JN value of 3.491 for environmental information sharing, there is no evidence for a significant two-way interaction effect of responsible entrepreneurship and stakeholder relationship capability on product innovation performance. This lends further credence to Hypothesis 3.

5 | Discussion and Implications

Contemporarily, there is an increasing interest in the responsible entrepreneurship practices of firms in emerging markets (Dankwah et al. 2026; Azmat and Samaratunge 2009). Nevertheless, theoretical advancement within the environmental management domain on whether responsible entrepreneurship can influence product innovation performance and the boundary conditions of this relationship remains nascent in empirical literature (cf. Vallaster et al. 2019). In this current study, we draw on stakeholder theory to hypothesise a contingency model that examines the moderating roles of stakeholder relationship capability and environmental information sharing on the effect of responsible entrepreneurship on product

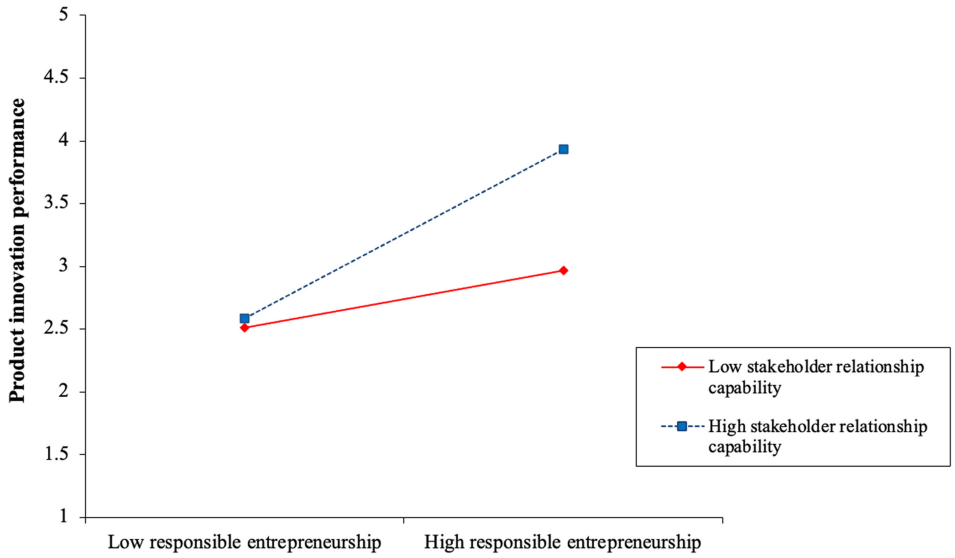

FIGURE 2 | Two-way interaction between responsible entrepreneurship and stakeholder relationship capability on product innovation performance. *Source:* Own development.

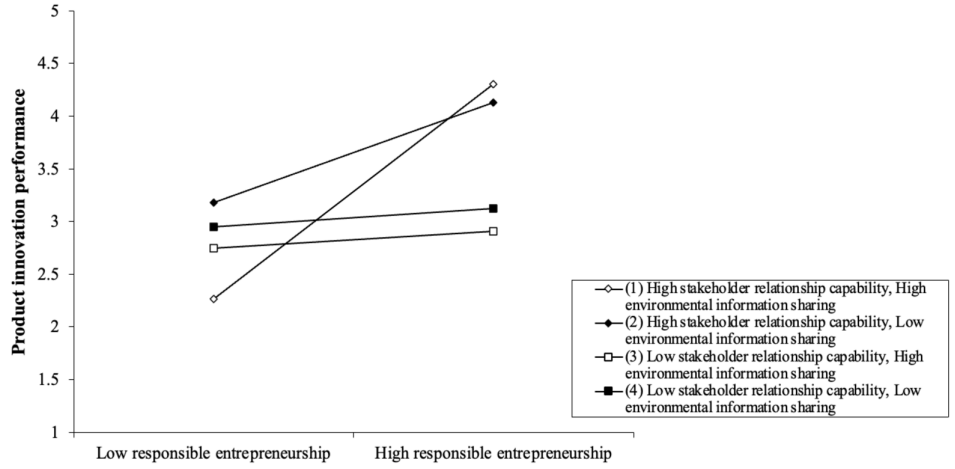

FIGURE 3 | Three-way interaction between responsible entrepreneurship, stakeholder relationship capability and environmental information sharing on product innovation performance. *Source:* Own development.

TABLE 6 | Conditional effects of responsible entrepreneurship on product innovation performance across levels of the moderators.

Stakeholder relationship capability	Environmental information sharing	Coefficient	*t*-value	*p*
Low	Low	0.066	0.489	0.625
Low	Mean	0.064	0.480	0.632
Low	High	0.062	0.345	0.731
Mean	Low	0.217	1.774	0.078
Mean	Mean	0.321	3.333	0.001
Mean	High	0.424	3.210	0.002
High	Low	0.369	2.496	0.014
High	Mean	0.578	5.247	0.000
High	High	0.787	5.288	0.000

Source: Own development.
Note: Unstandardised coefficients are reported. Low = one SD below the mean; high = one SD above the mean.

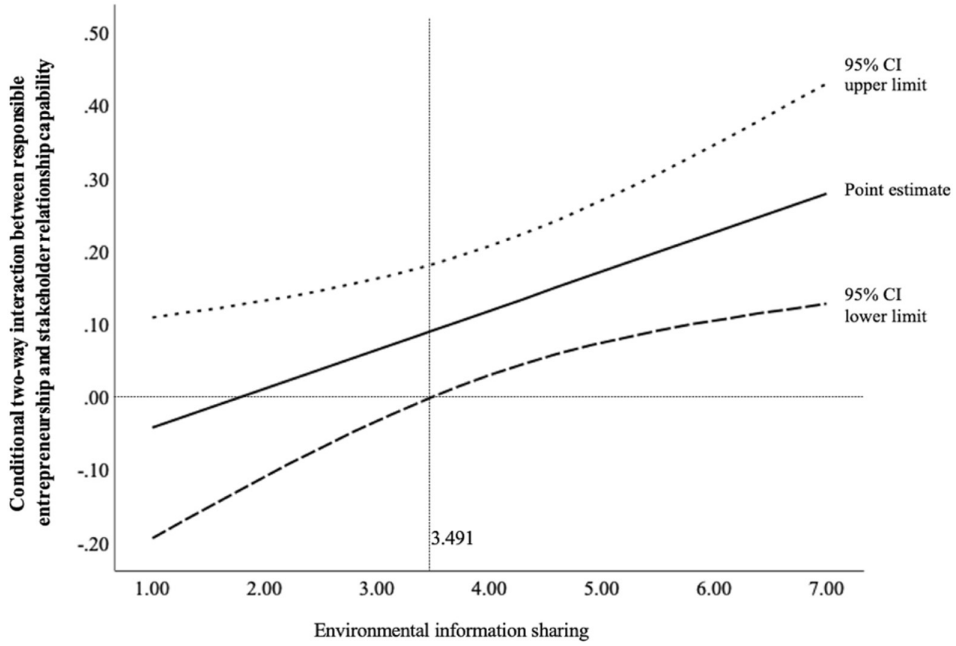

FIGURE 4 | Johnson–Neyman plot for the conditional two-way interaction between responsible entrepreneurship and stakeholder relationship capability on product innovation performance at values of environmental information sharing. *Source:* Own development.

innovation performance. Our hypotheses testing demonstrates that responsible entrepreneurship has a significant positive relationship with product innovation performance. In line with past research suggestions that responsible entrepreneurial activities are essential to a firm's goals (Gallardo-Vázquez et al. 2024; Ooi and Memon 2025), our findings highlight the importance of responsible entrepreneurship practices to the product innovation outcomes of firms in emerging markets (Adomako and Nguyen 2024).

Also, our findings show that stakeholder relationship capability positively moderates the relationship between responsible entrepreneurship and product innovation performance. This suggests that firms with high stakeholder relationship capability are better positioned to use their responsible entrepreneurship to access industry-relevant knowledge and socially responsible resources that can augment their product innovation performance. In response to prior research calls for a contingency model of responsible entrepreneurship (Vallaster et al. 2019), this moderation result contributes to the extant literature by clarifying the contingency role of stakeholder relationship capability in the context of responsible entrepreneurship.

Lastly, the findings reveal that environmental information sharing further strengthens the positive moderating effect of stakeholder relationship capability. This suggests a three-way interaction effect among responsible entrepreneurship, stakeholder relationship capability and environmental information sharing on product innovation performance. Specifically, when both stakeholder relationship capability and environmental information sharing are high, firms find it more favourable to leverage responsible entrepreneurship in improving product innovation performance. Besides, the JN analysis (see Figure 4) further probed this boundary condition of environmental information sharing. The analysis highlighted that the two-way interaction effects of responsible entrepreneurship and stakeholder relationship capability on product innovation performance become significant only when the levels of environmental information sharing exceed specific thresholds, reinforcing the relevance of robust environmental information sharing routine. Consequently, these findings offer a more nuanced explanation of how responsible entrepreneurship affects product innovation performance, and the inherent boundary conditions of this relationship.

5.1 | Implications for Theory

Our study provides several theoretical contributions to extant literature. While the predominant perspective in previous environmental management research emphasises that responsible entrepreneurial activities are key to firms' sustainability and operational survival (e.g., Ooi et al. 2026; Xie and Wu 2022), empirical scholarly efforts on whether responsible entrepreneurship affects product innovation performance is notably missing (cf. Adomako and Tran 2025; Tiba et al. 2019). As such, we add to extant literature by conceptualising a contingency model that examines the effect of responsible entrepreneurship and evaluates the moderating factors that shape its efficacy in emerging market firms. We show that responsible entrepreneurship can facilitate firms' product innovation performance. In so doing, our study reinforces the stakeholder theory (Parmar et al. 2010; Valentinov and Chia 2022) and adds to responsible entrepreneurship literature (Dankwah et al. 2026) by demonstrating that firms' prioritisation of sustainability-related entrepreneurial endeavours that integrate social, environmental and ethical considerations could translate to better product innovation success in emerging economies.

Second, we identify an important firm contextual factor that can influence the relationship between responsible entrepreneurship and product innovation performance. Particularly,

our results show that when stakeholder relationship capability is high, responsible entrepreneurship is more positively related to product innovation performance. Accordingly, when firms experience an increase in stakeholder relationship capability, the benefits of responsible entrepreneurship on product innovation performance become more salient. One possible explanation for this is that because firms are keen on understanding stakeholders' interests (Ortiz-Avram et al. 2024), a strong stakeholder relationship capability helps build close connections, mitigate stakeholders' tension and support identifying responsible practices that meet stakeholders' interests. Hence, our results extend the stakeholder theory and responsible entrepreneurship literatures (e.g., Amoako et al. 2026; Jiang et al. 2023) by emphasising that the value of responsible entrepreneurship is contingent on levels of stakeholder relationship capability of firms. In addition, examining how stakeholder relationship capability positively interacts with responsible entrepreneurship helps extend the current understanding of how organisational capabilities can augment firms' sustainability efforts (cf. Buzzao and Rizzi 2021; Khurshid et al. 2026). Importantly, this finding opens up future research ideas for a broader focus on how firms' capabilities can align with responsible entrepreneurship practices within the environmental management domain.

Furthermore, our study enriches the environmental management literature by highlighting the moderating impact of environmental information sharing on the responsible entrepreneurship–product innovation performance interplay, in response to scholarly calls for additional examination of the boundary conditions of responsible entrepreneurship (cf. Amoako et al. 2026). Past research indicates that exchanging environmental information is important to firms engaging in sustainable, responsible practices (Agyabeng-Mensah et al. 2024). Enriching this research stream, our findings suggest that environmental information sharing amplifies the interactive effect of responsible entrepreneurship and stakeholder relationship capability on product innovation performance (see Figure 3). Mainly, this finding helps to unveil the boundary conditions under which responsible entrepreneurship is desirable and when it can be effectively utilised by firms to support organisational outcomes. The implication of this contribution is that responsible entrepreneurship practices are more beneficial for firms when both stakeholder relationship capability and environmental information sharing are stronger and complement each other. Accordingly, this study extends the environmental information sharing literature (Kim and Kim 2025) and, to the best of our relative knowledge, is one of the first empirical attempts to demonstrate how environmental information sharing can enable firms to better deploy their responsible entrepreneurship when enhanced product innovation performance is the desired outcome.

Taken together, by sampling firms operating in an emerging economy in Africa (i.e., Nigeria), our findings broaden extant knowledge on responsible entrepreneurship (Dankwah et al. 2026; Xie and Wu 2022) and provide a more sophisticated contextual understanding of whether and under what conditions responsible entrepreneurship benefits firms from an emerging economy. Hence, our study offers valuable insights for both research and practice of responsible entrepreneurship in Nigeria, which is particularly important given the role of emerging market firms in the attainment of UN SDGs through responsible entrepreneurial practices that balances economic gains with social, environmental and ethical impacts.

5.2 | Implications for Industry Practitioners and Policymaking

Our study also provides several valuable implications for practitioners in the industry. Firstly, our findings on the positive linkage between responsible entrepreneurship and product innovation performance highlight that managers operating in resource-constraint environments should promote responsibility-oriented values in their firms. This can help promote ecological protection, address broader societal challenges and induce economic gains for firms, including better outcomes on product innovation performance. From an industry perspective, this espouses the relevance of responsible entrepreneurship as a vital sustainability-related practice that can help firms boost product innovations and long-term market competitiveness in emerging markets to support their environmentally responsive innovation and sustainability transitions.

Secondly, our findings on the positive moderating effect of stakeholder relationship capability indicate that managers should ensure their firms invest in stakeholder relationships (with their customers and communities) to anticipate social and environmental expectations, as this can help firms gain feedback and mitigate risks associated with their responsible practices while also enhancing co-creation buy-in for their product innovation. Thus, a robust stakeholder relationship capability would help firms to follow ethical decision-making and act responsibly to societal and environmental challenges faced by their stakeholders, thereby ensuring that sustainability concerns are embedded in product innovation processes.

Moreover, our results demonstrate that environmental information sharing is key to firms in the industry benefiting from their responsible entrepreneurship practices. This highlights the nuanced relevance of firms supporting their stakeholder relationships through informational exchanges with external stakeholders (e.g., suppliers, regulators and customers) during product development, working with suppliers on environmental requirements and sharing information about risks and opportunities to refine product designs. Such a step can help amplify the extent to which responsible entrepreneurship can generate product innovation performance.

Finally, for policymakers, our findings suggest that government should provide support services that train managers on adopting responsible business models and encourage firms to build networks for sharing best practices on responsible entrepreneurship. Given the growing imperative on sustainability and SDGs concerns in the industry (Ansari 2025b; Ozili 2022), this can help create an enabling environment for firms to take responsibility for the socio-ecological impacts of their entrepreneurial actions, develop stakeholder-supported environmental information platforms and potentially foster product innovation performance and sustainable development in emerging markets.

6 | Limitations and Future Research Direction

Beyond the contributions, our study also has limitations that provide opportunities for further investigations. To begin with, our results are based on a sample drawn from a single country—Nigeria, an emerging economy in West Africa. While our findings could apply to other emerging economies in Africa with a similar context such as Nigeria, this may also limit generalisability to other contexts. Since the market environment and stakeholder expectations differ among non-African countries, this can impact how responsible entrepreneurship might influence product innovation performance. Accordingly, the extension of our research framework by future researchers to economies in Asia, Latin America and other non-African economies could help establish if our findings are more generalisable. Second, our study follows a cross-sectional design, which means our results are correlational and prevent assessing causality among the variables. This offers an avenue for additional investigations to adopt a longitudinal design and collect data at different time points to ascertain temporal changes in responsible entrepreneurship and product innovation performance.

Also, we considered stakeholder relationship capability and environmental information sharing as the two moderators in our hypothesised model. Nonetheless, there may be other contextual factors (e.g., ethical leadership, technology transfer intensity, government support and legal inefficiency) that may serve as boundary conditions or intervening mechanisms in the relationship between responsible entrepreneurship and product innovation performance. Therefore, it would be promising for future investigations to explore other moderating and mediating variables that may shape responsible entrepreneurship, thereby complementing our study findings.

Furthermore, since product innovation performance is central to our argument in this study and was evaluated with a subjective performance measure, this may introduce social desirability bias in its assessment. This leaves room for future studies to consider using objective secondary data from companies/industry report to measure product innovation performance and to complement it with qualitative interviews to further extend the framework of our study. Finally, future research can complement our study by examining whether responsible entrepreneurship affects other dependent variables beyond product innovation performance including eco-innovation, environmental performance, circular economy practices or climate-related strategies. This can help clarify how responsible entrepreneurship could be a mechanism that leads to measurable improvements in environmental-related firm outcomes.

7 | Conclusion

In this study, we investigated the linkage between responsible entrepreneurship and product innovation performance and considered how stakeholder relationship capability and environmental information sharing could jointly moderate this linkage. Based on a primary survey of firms operating in an African economy, our results highlighted that engaging in responsible entrepreneurship practices can help firms enhance their product innovation outcomes. In addition, we uncovered that stakeholder relationship capability plays a crucial moderating role in helping firms to leverage their responsible entrepreneurship to drive product innovation performance. This moderation effect becomes even stronger, especially in the presence of high environmental information sharing, foregrounding the relevance of environmental information exchange to firms as a strategic mechanism for nurturing stakeholder engagement and dealing with environmental uncertainty. These insights enrich the extant literature on responsible entrepreneurship and product innovation performance while also offering valuable suggestions to practitioners aiming to defend their investment in responsible entrepreneurship and promote sustainable development in resource-constraint environment. Finally, we hope that our study will encourage further investigations on the consequences and curvilinear effects of responsible entrepreneurship in firms within and beyond the emerging economy context.

Author Contributions

Ayodele C. Oniku: supervision, investigation, writing – review and editing. **Awele Achi:** writing – original draft, writing – review and editing, formal analysis. **Adejumoke Adeoti:** conceptualization, writing – original draft, writing – review and editing. **Olamide O. Akintimehin:** writing – review and editing, formal analysis, methodology. **Francis Chukwuedo Achi:** conceptualization, writing – review and editing. **Solomon Jeresa:** methodology, writing – review and editing. **Benard Iyegudu:** conceptualization, writing – review and editing.

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The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Endnotes

[1] This study is part of a project on SMEs responsible innovation that was led and investigated by the first author (principal investigator).

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Appendix A: Measurement Items

Responsible entrepreneurship (1 = *strongly disagree* and 7 = *strongly agree*)	
REP1	Our firm adopts a long-term perspective in decision-making to guarantee a persistent superior return to shareholders/owners.
REP2	Our firm provides excellent pay, benefits and working conditions for our employees compared with similar enterprises.
REP3	Our firm provides good products/services at a good price and demonstrates a willingness to add value to customers' well-being.
REP4	Our firm is actively engaged in social welfare activities, such as education, housing and job creation.
REP5	Our firm has launched and implemented resource conservation and environmental protection strategies.
Stakeholder relationship capability (1 = *strongly disagree* and 7 = *strongly agree*)	
SRC1	We communicate regularly with our stakeholders.
SRC2	We consult our stakeholders for new product development.
SRC3	We establish collaborative relationships with our stakeholders to solve problems.
SRC4	We have close relationships with our stakeholders.
Environmental information sharing (1 = *strongly disagree* and 7 = *strongly agree*)	
EIS1	Our partners always provide us with environmental information.
EIS2	We rely on our partners for environmental information.[a]
EIS3	Our partners should be willing to share environmental information.
EIS4	We always obtain timely environmental information from our partners.
Product innovation performance (1 = *extremely poor* and 7 = *excellent*)	
PIP1	The sales of our new products have improved.
PIP2	The success rate of our new products has improved.
PIP3	The speed of new product development has improved.
PIP4	The profitability of new products has improved.

[a] Dropped item.