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Responsible entrepreneurship, social innovation, and entrepreneurial performance: Does commitment to SDGs matter?

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Abstract

In this study, we investigate the effect of responsible entrepreneurship on entrepreneurial performance through the mediating mechanism of social innovation. Further, we explore the moderating role of a firm's degree of sustainable development goals (SDGs) commitment on the relationship between social innovation and entrepreneurial performance. Data were collected from 220 firms in Ghana using a time-lagged design. Our results show that responsible entrepreneurship has an indirect effect on entrepreneurial performance through social innovation. Moreover, the effect of social innovation on entrepreneurial performance is amplified when a firm's degree of SDGs commitment is higher. These findings contribute to the responsible entrepreneurship and social innovation literature.

KEYWORDS

Ghana, performance, responsible entrepreneurship, social innovation, SDGs, sustainable development

1 | INTRODUCTION

In a rapidly evolving global environment where entrepreneurs wield significant influence (Albitar et al., 2023; Dembek et al., 2023), responsible entrepreneurship has emerged as a guiding principle for sustainable and ethical business practices. Responsible entrepreneurship reflects entrepreneurial endeavors that acknowledge, cultivate, or leverage opportunities through sustainable innovation, aiming to achieve economic, social, or ecological benefits with the overarching goal of enhancing sustainable development (Kouatli, 2020; Vallaster et al., 2018; Xie & Wu, 2022). It has been established that responsible entrepreneurship goes beyond the traditional pursuit of profit (Azmat & Samaratunge, 2009; Fuller & Tian, 2006); however, it

emphasizes a holistic approach that considers the well-being of society, the environment, and all stakeholders involved. This reflects a commitment to balancing economic success with social and environmental responsibility, fostering a positive impact that extends beyond the bottom line. Notably, responsible entrepreneurship entails activities that manifest a commitment to recognizing, developing, or exploiting opportunities through sustainable innovation. This multifaceted approach seeks to attain economic, social, and ecological gains with the overarching aim of enhancing sustainable development (Voegtlin & Scherer, 2017; Xie & Wu, 2022). Consequently, responsible entrepreneurs not only build profitable ventures but also contribute positively to the well-being of society at large.

Existing research has delved into the antecedents (e.g., Adomako & Tran, 2023), mechanisms, and outcomes of responsible entrepreneurship (e.g., Xie & Wu, 2022). Despite contributing significantly to our understanding of the responsible entrepreneurship

List of abbreviations: AVE, average variance extracted; CR, composite reliability; SDGs, sustainable development goals.

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phenomenon, certain gaps persist in the current body of literature. Specifically, there exists a gap in our understanding of the role played by responsible entrepreneurship in the social innovation activities of firms. Moreover, while highlighting the mechanisms through which responsible entrepreneurship predicts firm performance is intriguing, the precise influence and interplay of social innovation within this linkage remain inadequately explicated.

Responsible entrepreneurship holds an important role in driving social innovation, primarily due to its inherent commitment to ethical, sustainable, and inclusive practices (Choi & Gray, 2008). Social innovations originating from responsible entrepreneurship are more likely to align with regulatory requirements and gain social license (Derchi et al., 2021; Yang & Rivers, 2009), facilitating smoother implementation and acceptance within the broader community. In essence, responsible entrepreneurship establishes a fertile ground for social innovation by integrating ethical decision-making, stakeholder inclusivity, sustainability, and positive social impact into its core principles. This synergy is likely to propel the development and implementation of innovative solutions that effectively address pressing societal challenges while upholding ethical and sustainable standards. Thus, this study aims to investigate the role played by social innovation in the relationship between responsible entrepreneurship and entrepreneurial performance. We further explore the condition under which social innovation predicts entrepreneurial performance.

Previous research shows that responsible entrepreneurs recognize that their ventures exist within a larger ecosystem and their decisions can have profound effects on the well-being of individuals and the environment (Azmat & Samaratunge, 2009; El-Kassar et al., 2023). This mindset prompts a reevaluation of business models, encouraging innovation that aligns with principles of sustainability, inclusivity, and social justice. Although some scholars still uphold the notion that “the social responsibility of business is to increase its profits” (Friedman, 1970, p. 6), contemporary perspectives emphasize that businesses bear multiple responsibilities to the societies in which they operate (Tran & Adomako, 2021; Xie & Wu, 2022). In response to this, entrepreneurs have embraced an alternative business philosophy rooted in socially responsible values, ethical considerations, and sustainable practices. This entrepreneurial approach strives to balance societal responsibility with the concurrent pursuit of economic, environmental, and social objectives (Adomako & Tran, 2023; Elkington, 1994).

This study contributes to the literature in three ways. First, it underscores the significance of responsible entrepreneurship as a catalyst for driving social innovation in firms. This contribution is important, shedding light on the idea that firms can enhance their social innovation by actively engaging in responsible entrepreneurship. This outcome extends previous research that examines the outcomes of responsible entrepreneurship (Adomako & Tran, 2023; Xie & Wu, 2022). Second, we show the mechanism through which responsible entrepreneurship affects entrepreneurial performance. Specifically, we emphasize that social innovation serves as a mediating factor, highlighting how responsible entrepreneurship can predict

entrepreneurial performance. This extends the social innovation literature (Phillips et al., 2015) by revealing that social innovation is a mechanism through which responsible entrepreneurship influences entrepreneurial performance. Third, we draw attention to a crucial condition under which social innovation predicts entrepreneurial performance. Our findings reveal that a firm's commitment to SDGs acts as a moderator, shaping the relationship between social innovation and entrepreneurial performance. In doing so, we contribute to the social innovation literature by highlighting the contextual impact of social innovation. This exploration of boundary conditions adds depth to our understanding of the nuanced interplay between social innovation and entrepreneurial performance.

2 | THEORETICAL BACKGROUND AND HYPOTHESES

2.1 | Responsible entrepreneurship

Entrepreneurship, at its core, is a dynamic and transformative force with the inherent potential to address and solve a myriad of crisis and societal problems (Fares et al., 2022). An increasing number of enterprises are embracing socially responsible practices (Adomako & Tran, 2023; Xie & Wu, 2022). In the main, responsible entrepreneurship is characterized by entrepreneurial endeavors that acknowledge, cultivate, or capitalize on opportunities through sustainable innovation. The primary aim is to achieve economic, social, or ecological benefits with the overarching goal of enhancing sustainable development (Adomako & Tran, 2023; Vallaster et al., 2018; Xie & Wu, 2022). This type of entrepreneurship is emerging as a distinctive and growing cohort within the realm of business leadership, marking a significant departure from conventional practices and signaling a shift towards a new norm (Azmat & Samaratunge, 2009; Tiba et al., 2019). This burgeoning category of entrepreneurs embodies a commitment to responsible business practices that extend beyond traditional profit-centric models (Vallaster et al., 2018). Unlike their predecessors, responsible entrepreneurs place a strong emphasis on integrating social and environmental considerations into their business strategies.

At the core of this transformative shift is the acknowledgment that businesses play an important role in addressing societal and environmental challenges (Wei et al., 2017; Xie & Wu, 2022). Responsible entrepreneurs not only recognize their impact on the communities they operate in but also actively seek ways to contribute positively to social and environmental well-being. Their ethos encompasses a holistic approach to business, considering not only financial outcomes but also the broader implications of their activities on stakeholders, the environment, and society at large (Hall & Daschle, 2001; Tiba et al., 2019). These entrepreneurs prioritize ethical decision-making, transparency, and sustainability in their business operations (Awwad & Khoury, 2019). They proactively engage with stakeholders, including customers, employees, suppliers, and the community, fostering collaborative relationships built on trust and shared values

(Azmat & Samaratunge, 2009). Moreover, responsible entrepreneurs are often early adopters of innovative solutions that promote environmental sustainability, social equity, and ethical business conduct. The rise of responsible entrepreneurs reflects a growing awareness of the interconnectedness between business activities and broader societal and environmental challenges. As this category gains prominence, it signifies not only a shift in individual business practices but also a broader transformation in the expectations and norms shaping the business landscape. Ultimately, responsible entrepreneurs serve as trailblazers, paving the way for a more conscientious and sustainable approach to business that goes beyond mere profitability to embrace the principles of social responsibility and environmental stewardship.

Consequently, it is increasingly imperative for responsible entrepreneurs to identify, assess, and capitalize on entrepreneurial opportunities. This entails making decisions and judgments that consider the expected benefits and impacts across three pivotal dimensions: economic, social, and ecological (Choi & Gray, 2008; Xie & Wu, 2022). Given the escalating global environmental challenges, entrepreneurs are now compelled to adopt responsible practices, viewing them as significant contributors to environmental issues (Walker & Wan, 2012). Consequently, responsible entrepreneurship has gained prominence in strategic decision-making processes in entrepreneurial firms (Ambec & Lanoie, 2008). Despite the increasing practical attention accorded to responsible entrepreneurship, its impact on firm performance remains a contentious subject in the literature.

One perspective within neoclassical economics argues that responsible entrepreneurship introduces unnecessary costs, including high fixed and variable costs, which may adversely affect financial performance (Walley & Whitehead, 1994). Fixed costs rise as firms allocate additional resources to acquire pollution control equipment, and variable costs increase when recyclable materials are employed (McWilliams & Siegel, 2001). Conversely, an opposing research stream contends that being responsible, as an embodiment of a firm's irreplaceable related capabilities, can enhance operational efficiency (Chen & Chang, 2013). It may facilitate entry into new markets, provide access to valuable resources (Cheng et al., 2014), improve stakeholder relationships and reactions (Flammer, 2013), and attract customers (Hillman & Keim, 2001; Wei et al., 2017). However, empirical evidence on the relationship between responsible entrepreneurship and firm performance is not well understood.

To address this issue, our study identifies a contingency factor and mediating mechanism that connects responsible entrepreneurship with firm performance. The current study was inspired by a meta-analysis (see Dixon-Fowler et al., 2013) that underscores the role of contingency and mediating factors for social responsibility outcomes. Aligned with this evolving research trend, our study delves into how social innovation serves as a mediator in the relationship between responsible entrepreneurship and firm performance. Responsible entrepreneurship, functioning as a signal for the firm's responsibility, enhances a firm's social innovation and, consequently, improves its overall performance. Recognizing that stakeholders, including governments and business constituencies, form judgments about a firm's

social innovation based on its actions and institutional environment (Adomako & Tran, 2023; Tost, 2011), we also examine how commitment to SDGs moderates the effect of social innovation on performance. Figure 1 depicts the conceptual model of the study.

2.2 | Responsible entrepreneurship and social innovation

Responsible entrepreneurship involves entrepreneurial initiatives that recognize, foster, or leverage opportunities through sustainable innovation. The primary objective is to attain economic, social, or ecological advantages, all contributing to the overarching aspiration of promoting sustainable development (Cohen & Winn, 2007; Vallaster et al., 2018). It is inherently driven by a commitment to societal well-being and ethical business conduct. Entrepreneurs operating with a sense of responsibility are more likely to identify and address pressing social challenges within their business models (Dacin et al., 2010; Mair & Marti, 2006). The pursuit of social innovation becomes a natural extension of their values and purpose, leading to the development of innovative solutions that contribute positively to societal needs (Phills et al., 2008; Seelos & Mair, 2007). This alignment between responsible entrepreneurship and social innovation stems from a genuine desire to create meaningful impact and drive positive change.

Additionally, responsible entrepreneurs actively engage with a diverse set of stakeholders, including customers, employees, communities, and non-governmental organizations (Austin et al., 2006; Mair & Marti, 2006). This engagement fosters a collaborative approach to problem-solving and innovation. Through dialog and co-creation with stakeholders, responsible entrepreneurs gain valuable insights into social issues and needs (Adomako & Tran, 2023; Freeman et al., 2010). This participatory process facilitates the identification of innovative solutions that address specific challenges faced by communities. Social innovation, in this context, becomes a collective effort grounded in the principles of responsible entrepreneurship, where stakeholders contribute to the development and implementation of solutions that have a positive societal impact.

Finally, responsible entrepreneurship emphasizes the integration of social and environmental considerations into business strategies (Hart & Milstein, 2003). Entrepreneurs operating with a long-term perspective recognize that sustainable business practices are essential for enduring success. Social innovation, which involves creating novel solutions to social challenges, aligns with the ethos of responsible entrepreneurship (Adomako & Tran, 2022). Entrepreneurs who are committed to responsible practices are more likely to invest in the development of sustainable business models that not only address immediate social needs but also contribute to the long-term well-being of communities. This strategic alignment encourages the continuous exploration of innovative approaches that prioritize both business success and positive societal outcomes. Collectively, responsible entrepreneurship serves as a catalyst for social innovation through the intrinsic alignment of values and purpose, active

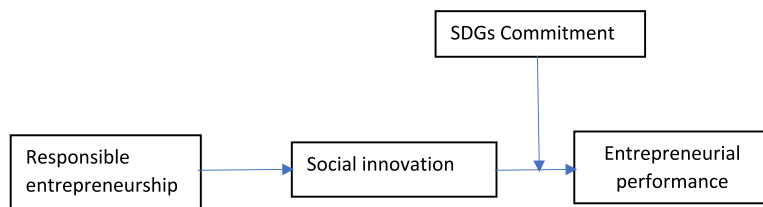


FIGURE 1 Conceptual model.

stakeholder engagement, and the development of sustainable business models (Austin et al., 2006; Dacin et al., 2010; Phills et al., 2008). This suggests that responsible entrepreneurship is likely to foster social innovation by integrating a proactive and collaborative approach to addressing societal challenges. Thus, we suggest that

H1. Responsible entrepreneurship has a positive influence on social innovation.

2.3 | The mediating role of social innovation

Social innovation is considered a pathway to realizing the United Nations' Sustainable Development Goals (Adomako & Tran, 2022; UN, 2017). This acknowledgment is underscored by the increasing attention from policymakers and scholars (Terstriep & Rehfeld, 2020). Social innovation is considered “a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals” (Phills et al., 2008, p. 36). There is a suggestion that organizations exhibiting higher levels of social innovation contribute more significantly to social impact in society (Lee et al., 2019).

First, responsible entrepreneurship is characterized by the active and intentional involvement of entrepreneurs with a diverse array of stakeholders. These stakeholders encompass customers, employees, local communities, and non-governmental organizations, forming a comprehensive network of engagement (Doh & Guay, 2006; Xie & Wu, 2022). This dynamic interaction goes beyond conventional business practices, fostering a collaborative and inclusive environment for problem-solving and innovation. Active stakeholder engagement is not merely a superficial interaction but a deeply embedded commitment to understanding and addressing the unique needs and perspectives of various stakeholders (Mair & Marti, 2006; Shah & Guild, 2022). Through sustained dialog and co-creation processes, responsible entrepreneurs cultivate an ongoing exchange of ideas, insights, and concerns with their stakeholders. This participatory approach serves as a two-way communication channel, enabling entrepreneurs to gain profound insights into the social issues and needs prevalent within their operating environments. Moreover, this collaborative process becomes a fertile ground for the identification and development of innovative solutions (Segarra-Oña et al., 2017). This inclusive approach enhances the likelihood of generating novel ideas and sustainable solutions that transcend traditional business

models. As a result, the co-creation dynamics inherent in responsible entrepreneurship contribute to the exploration of innovative initiatives that directly address pressing societal challenges (de Silva et al., 2020). This iterative and participatory approach aligns with the values and purpose of responsible entrepreneurship, creating a symbiotic relationship between engaged stakeholders and the development of innovative solutions.

Second, social innovation emerges as an important factor in driving entrepreneurial performance within the framework of responsible entrepreneurship. The solutions generated through this collaborative and stakeholder-inclusive process create value not only for the business but also for society at large (Lüdeke-Freund et al., 2020; Wójcik et al., 2022). The positive societal impact resulting from social innovation contributes significantly to entrepreneurial performance metrics, including improved brand reputation, heightened customer loyalty, and increased attractiveness to socially conscious investors. In essence, the co-creation of innovative solutions forms a dynamic cycle within responsible entrepreneurship. This cycle not only reinforces the foundational commitment to ethical practices and sustainable business models but also positions social innovation as a transformative mechanism, channeling the intrinsic values, and purpose of responsible entrepreneurship into tangible societal impact and enhanced business success. Thus, we argue that

H2. Social innovation mediates the relationship between responsible entrepreneurship and entrepreneurial performance.

2.4 | The moderating role of the degree of SDGs commitment

A firm's commitment to SDGs refers to its dedication and pledge to align its business operations, strategies, and practices with the global sustainability agenda (Nylund et al., 2022). The SDGs are a set of 17 interconnected goals addressing various social, economic, and environmental challenges, aiming to create a more sustainable and inclusive world by 2030 (United Nations, 2015, 2017). When a firm commits to SDGs, it signifies a proactive and intentional effort to contribute positively to the achievement of these global goals. Thus, it is likely to condition the effect of social innovation and entrepreneurial performance.

First, firms that are committed to SDGs are more likely to align their strategic objectives with the specific social and environmental

goals outlined in the SDGs (Berrone et al., 2023; Nylund et al., 2022). This alignment ensures that social innovation initiatives are not only consistent with the firm's overall mission but also directly contribute to achieving SDGs. The commitment to SDGs acts as a condition that guides and shapes social innovation efforts, ensuring they are in harmony with the broader sustainability agenda. This alignment has the potential to enhance the positive impact of social innovation on entrepreneurial performance, as it is purposefully directed towards achieving recognized global sustainability goals.

Second, a strong commitment to SDGs influences resource allocation decisions within a firm (Chams & García-Blandón, 2019; Diaz-Sarachaga, 2021). Firms dedicated to sustainability are more likely to allocate resources—financial, human, and technological—specifically for social innovation initiatives. This commitment is likely to boost the effect of social innovation on entrepreneurial performance by ensuring that the necessary resources are available for the development, implementation, and scaling of socially innovative solutions. Moreover, the commitment to SDGs often includes robust impact measurement and reporting mechanisms (Heras-Saizarbitoria et al., 2022), allowing firms to assess the effectiveness of social innovation in contributing to sustainability goals. This measurement and evaluation process, guided by the commitment to SDGs, is likely to bolster the link between social innovation and entrepreneurial performance by providing valuable insights for continuous improvement.

Third, a commitment to SDGs enhances stakeholder engagement and encourages partnerships that have the potential to amplify the impact of social innovation. Firms dedicated to sustainability are more likely to engage with diverse stakeholders, including governmental bodies, non-profits, and local communities (Herremans et al., 2016). This commitment facilitates collaborative efforts, co-creation of solutions, and shared responsibilities in addressing social and environmental challenges (Ansell et al., 2022; Kruger et al., 2018). In effect, the moderating effect of SDGs commitment lies in the extended network of support and expertise that it fosters. Social innovation, when grounded in a commitment to SDGs, benefits from a more extensive and interconnected ecosystem of stakeholders, thereby enhancing its potential impact on entrepreneurial performance through increased visibility, support, and shared value creation.

Taken together, the commitment to SDGs acts as a crucial condition in shaping the effect of social innovation on entrepreneurial performance. This is because it has the potential to ensure strategic alignment, influence resource allocation and impact measurement, and foster stakeholder engagement and partnerships. This commitment guides social innovation efforts, enhances their effectiveness, and contributes to the overall success of entrepreneurial endeavors focused on sustainable development. Thus, we hypothesize that

H3. The relationship between social innovation and entrepreneurial performance is moderated by the degree of SDGs commitment, such that the greater the degree SDGs commitment, the stronger the relationship between social innovation and entrepreneurial performance.

3 | METHOD

3.1 | Study setting

Ghana serves as an ideal context for studying the intersection of responsible entrepreneurship for two reasons. First, Ghana faces social challenges such as poverty, inadequate healthcare, and educational disparities (Adomako et al., 2023; Adomako & Tran, 2022). Responsible entrepreneurship in this context involves addressing these challenges by developing business models that contribute to social welfare, inclusive growth, and poverty alleviation. Second, Ghana grapples with environmental sustainability issues, including deforestation, illegal mining, and pollution (Cobbinah et al., 2017). The intersection of responsible entrepreneurship becomes crucial in addressing these environmental concerns. Entrepreneurs operating in Ghana can explore sustainable business practices, such as promoting renewable energy, implementing eco-friendly production processes, and engaging in conservation efforts. Thus, studying responsible entrepreneurship in the Ghanaian context provides an opportunity to understand how businesses can balance economic objectives with environmental stewardship.

3.2 | Sample and data collection procedure

To test our hypotheses, we gathered data from founders/entrepreneurs and finance managers in service and manufacturing ventures in Ghana. Our sample consisted of 600 small companies identified from the Ghana company register (2022 edition). Before initiating data collection, we dispatched letters to the founders/entrepreneurs of each firm, describing the study's purpose, and sought their involvement in completing the questionnaires. We assured respondents of receiving a copy of the study findings and guaranteed the confidentiality of their identities. This approach aimed to secure a high response rate and ensure the provision of reliable and accurate responses.

Data collection occurred in two phases. During Wave 1 (t1), information on local responsible entrepreneurship, social innovation orientation, degree of SDGs commitment, and control variables was obtained. Subsequently, in Wave 2, data on entrepreneurial performance were collected. The adoption of a time-lagged data collection approach in Waves 1 and 2 aimed to mitigate potential common method bias associated with cross-sectional data (Podsakoff et al., 2003). In Wave 1, one of the co-authors visited the selected firms personally, distributed questionnaires to the founders/entrepreneurs, and arranged for a subsequent collection date. Following multiple reminders via phone, responses were received from 239 firms. All questionnaires were deemed usable, except for 15, resulting in 224 usable questionnaires in Wave 1. In Wave 2 (t2 and 3 months after Wave 1), we delivered questionnaires via email to the 224 firms, restricting eligibility for completing the entrepreneurial performance questions to finance managers. After three reminders, we obtained complete responses from 220 firms, reflecting a response rate of

**TABLE 1** Characteristics of the sample.

		Number of samples	%
Firm age (in years)	<3	25	11.36
	3–8	88	40.0
	8–15	75	34.09
	>15	32	14.55
Firm size (employees)	<5	39	17.73
	5–10	68	30.91
	11–15	82	37.27
	16–20	20	9.09
	>20	11	5.0
Industry type	Service	101	45.91
	Manufacturing	119	54.09
Sales (in millions)	<3	111	50.45
	3–8	78	35.46
	8–15	24	10.91
	>15	7	3.18

36.37%. The sample characteristics are presented in Table 1. Our sample predominantly comprised manufacturing firms (54.09%), with 45.91% classified as service providers. The average firm size was 77 employees, and the average firm age stood at 9 years.

To address potential nonresponse bias, we conducted a thorough examination by splitting the sample and analyzing differences between respondents and non-respondents. Pearson's chi-square tests revealed no significant distinctions in terms of firm age, firm size, and industry, mitigating concerns about nonresponse bias in this study.

3.3 | Measures

Unless explicitly indicated, all items were measured using a 7-point Likert scale (1 = *strongly disagree* and 7 = *strongly agree*). Table 2 presents the validity and reliability of all the multi-item measures.

3.3.1 | Responsible entrepreneurship (t1)

We employed a five-item scale from Xie and Wu (2022) to assess responsible entrepreneurship. This scale encompasses socially responsible practices, encompassing economic, social, and ecological aspects. It measures a firm's commitment to its responsibilities to shareholders, employees, customers, local communities, and the environment.

3.3.2 | Social innovation (t1)

We measured social innovation with six items derived from previous studies (e.g., Adomako & Tran, 2022; Nguyen et al., 2023).

3.3.3 | Degree of commitment to SDGs (t2)

The six items assessing a firm's degree of SDGs commitment originated from a combination of sources. These were drawn from insights gleaned through in-depth personal interviews with entrepreneurs and built upon existing conceptual studies (e.g., Kørnøv et al., 2020; Montiel et al., 2021). Following the guidance of Churchill (1979), we initially compiled a list of items grounded in an extensive literature review. Subsequently, these items underwent refinement based on feedback solicited from entrepreneurs. The finalized questionnaire incorporated these six items, designed to measure the degree of SDGs commitment. These items describe the firm's commitment, initiatives, and actions related to each specific goal, indicating the direction and approach the firm intends to take to contribute to sustainable development. Exploratory factor analysis (EFA) revealed a single factor associated with the degree of SDGs commitment, prompting us to employ all six items to capture the degree of SDGs commitment construct.

3.3.4 | Entrepreneurial performance (t2)

Considering that new venture growth is widely taken as an important measure of performance for emerging firms (Brush & Vanderwerf, 1992), our study focused on two key growth metrics: revenue growth and employment growth. To ascertain these metrics, we computed the average annual revenue and employment growth over the year immediately following the collection of survey data. This method was chosen to bolster our capacity to make causal inferences from the findings. Following conventional practice (Baum & Wally, 2003; Hmieleski et al., 2012), we estimated a comprehensive

TABLE 2 Constructs, reliability, and validity.

Details of measurement items	Factor loading	Cronbach's α	CR	AVE
Degree of SDGs commitment (new scale)		0.90	0.92	0.68
Please indicate your level of agreement with these statements related to your current venture				
This firm actively supports initiatives that aim to alleviate poverty and improve the livelihoods of underprivileged communities	0.67			
This firm contributes to efforts that ensure access to sufficient, nutritious, and affordable food for vulnerable populations	0.72			
Our firm prioritizes the health and well-being of employees, customers, and communities through comprehensive health programs and services	0.84			
This firm invests in initiatives that promote access to quality education and skill development opportunities for all, regardless of background.	0.89			
This firm is committed to fostering gender equality and creating an inclusive work environment that empowers all employees, regardless of gender	0.90			
This firm actively promotes responsible water usage and implements measures to ensure access to clean water and sanitation facilities for employees and communities	0.92			
Responsible entrepreneurship (Xie & Wu, 2022)		0.92	0.93	0.73
Please indicate your level of agreement with these statements				
This firm adopts a long-term perspective in decision-making to guarantee a persistent superior return to shareholders/owners	0.77			
This firm provides excellent pay, benefits and working conditions for your employees compared with similar enterprises	0.85			
This firm provides good products/services at a good price and demonstrates a willingness to add value to customers' wellbeing	0.88			
This firm is actively engaged in social welfare activities, such as education, housing, and job creation	0.87			
This firm has launched and implemented resource conservation and environmental protection strategies	0.90			
Social innovation (Adomako & Tran, 2022; Nguyen et al., 2023).		0.91	0.93	0.71
This company develops products and services that have social impacts	0.82			
The value of our products and services is beneficial to society as a whole	0.85			
This company's products and services serve both material and non-material human needs	0.77			
This company's company develops products and services that solve social problems	0.89			
This company's products and services improve the standards of life	0.90			
This company develops products and services that satisfy social needs and improve living standards	0.93			
Environmental dynamism (Miller & Friesen, 1982)		0.88	0.89	0.73
Competitors are constantly trying out new competitive strategies	0.76			

(Continues)

TABLE 2 (Continued)

Details of measurement items	Factor loading	Cronbach's α	CR	AVE
Customer needs and demands are changing rapidly in our industry	0.88			
New markets are emerging for products and services in our industry	0.93			

Abbreviations: AVE, average variance extracted; CR, composite reliability.

entrepreneurial performance measure by standardizing and summing the revenue and employment growth metrics for each firm. This approach was adopted to present our findings more concisely.

3.3.5 | Control variables (t1)

We used various control variables that might exert an influence on our research model. These were firm age, firm size, industry type, and environmental dynamism. Firm age was measured using the logarithm transformation of the firm's age since its establishment. Firm size was captured by the logarithm transformation of the number of full-time employees within the firm. Industry type was classified as follows: 0 for the service industry and 1 for the manufacturing industry. To assess environmental dynamism, we adopted three items from Miller and Friesen (1982).

4 | ANALYSES

4.1 | Common method variance

Despite implementing a time-lag design and conducting multiple waves of data collection from various respondents, we acknowledge the potential presence of common method variance (CMV) in our findings. To address this concern, we adhered to established practices for assessing the magnitude of CMV (Podsakoff et al., 2003). First, we applied Harman's one-factor test (Podsakoff et al., 2003). The test results revealed that the largest component explaining the variance was 28.19%. This outcome suggests that no single factor dominated the majority of the observed covariance. Second, we executed a confirmatory factor analysis (CFA) under the assumption that a single factor could describe the variables utilized in the study. Connecting all items measuring the dependent and independent variables to a single factor, the proposed CFA model did not exhibit a satisfactory fit for the data ($\chi^2/\text{d.f.} = 3.63$, RMSEA = 0.17, CFI = 0.59, Tucker–Lewis index [TLI] = 0.33). Third, we employed the single factor-common-method-factor technique recommended by Podsakoff et al. (2003) to evaluate CMV. However, the results of this test ($\chi^2/\text{d.f.} = 2.12$, RMSEA = 0.12, CFI = 0.60, TLI = 0.71) demonstrated a poorer fit to the data compared to the proposed model. Collectively, these outcomes suggest that CMV was not a significant concern in our empirical findings.

4.2 | Validity and reliability assessment

In this study, we employed the LISREL 9.1 statistical package to evaluate reliability and validity (see Table 2). The reliability assessment revealed that Cronbach's alpha values for all constructs surpassed the recommended threshold of .70, indicating satisfactory reliability (Cronbach, 1951). Additionally, the CFA models demonstrated a strong fit between the hypothesized measurement model and the observed data ($\chi^2/\text{d.f.} = 2.33$; RMSEA = 0.05; NNFI = 0.91; TLI = 0.92; CFI = 0.92).

Furthermore, as shown in Table 2, the CR values exceeded the threshold of 0.60, providing evidence for convergent validity (Bagozzi & Yi, 2012). All factor loadings were also above the recommended value of 0.70, further substantiating convergent validity (Fornell & Larcker, 1981). To assess discriminant validity, we compared a three-factor model with alternative models, and the results indicate a satisfactory fit of the three-factor model. This finding lends support to the discriminant validity of our constructs. Finally, we observed that no correlation exceeded the square root of the average variance extracted (AVE) for each construct, reinforcing the discriminant validity of our constructs. Overall, our analysis provides robust evidence supporting the reliability and validity of the measurement model employed in this study.

4.3 | Structural model estimation

We employed structural equation modeling (SEM) with maximum likelihood estimation in LISREL8.87 to assess a series of nested structural models. To simplify the model, we generated mean values for the dependent and moderating variables, computing averages for each multi-item construct to create composite scores. However, for the dependent variables (social innovation and entrepreneurial performance), we opted for the full information approach, utilizing individual measurement items instead of mean values during model estimation. This dual approach, incorporating both averages and full information, helped address potential issues of model under-identification arising from insufficient information in the structural model (Donbesuur et al., 2020; Hair et al., 2017).

Consistent with established practices (e.g., Cortina et al., 2001), we applied moderated structural equation modeling to examine the hypothesized moderation relationship. Thus, one moderating terms, (1) social innovation X SDG commitment, was created. To mitigate

TABLE 3 Descriptive statistics and correlations.

No.	Constructs	M	SD	1	2	3	4	5	6	7
1	Responsible entrepreneurship	4.79	1.55							
2	Social innovation	5.16	1.25	0.52**						
3	Degree of SDGs commitment	4.80	1.33	0.19**	0.40**					
4	Entrepreneurial performance	1.07	0.95	0.29**	0.21**	0.30**				
5	Environmental dynamism	4.60	1.38	0.08	0.07	0.08	0.28**			
6	Firm size	77.19	57.77	−0.05	−0.05	0.09	−0.12	−0.08		
7	Industry ^A	—	—	0.06	−0.04	0.06	−0.07	−0.12	0.01	
8	Firm age	9.22	2.69	−0.11	−0.06	0.09	−0.11	−0.05	0.05	−0.02

Note: Square root of AVE at the diagonals and in bold.

Abbreviations: A, dummy variable; M, mean; SD, standard deviation.

* $p < .05$. ** $p < .01$.

TABLE 4 Results of structural model estimation.

Independent variables	Dependent variables					
	Social innovation	Entrepreneurial performance			Social innovation	Entrepreneurial performance
	Model 1	Model 2	Model 3	Model 4	Model 5	
Control paths						
Firm size	−0.11 (−1.89)	−0.09 (−1.18)	−0.08 (−1.16)	−0.07 (−1.39)	−0.09 (−1.79)	−0.08 (−1.78)
Industry	−0.08 (−0.69)	−0.05 (−0.63)	−0.05 (−0.70)	−0.06 (−0.43)	−0.06 (−0.72)	−0.03 (−0.42)
Firm age	−0.04 (−0.18)	−0.10 (−0.92)	0.08 (−0.88)	−0.07 (−0.83)	−0.04 (−0.20)	−0.09 (−0.93)
Environmental dynamism	0.07 (0.49)	0.18 (3.01)*	0.15 (2.39)*	0.15 (2.75)*	−0.04 (−0.25)	0.16 (3.75)*
Direct effect paths						
Responsible entrepreneurship	0.28 (3.79)**	0.22(3.19)**	0.14 (1.79)	0.11(1.48)	0.20 (3.16)**	0.11 (1.49)
Social innovation (SI)			0.14 (2.43)*	0.15 (2.89)*		0.25 (3.24)**
Degree of SDGs commitment (DSDG)				0.24 (3.42)**		0.22 (3.19)**
Two-way interaction path						
SI * DSGDG				0.36 (4.79)**		0.22 (2.98)**
Goodness of fit indices						
R ²	0.24	0.14	0.16	0.22	0.25	
ΔR ²	—	—	0.04	0.05	0.03	
χ ² /D.F.	1.56	1.45	1.47	1.44	1.68	
CFI	0.92	0.94	0.94	0.93	0.95	
NNFI	0.93	0.90	0.95	0.96	0.92	
RMSEA	0.04	0.05	0.04	0.05	0.04	

Note: T-values are reported in parentheses Critical values of the t distribution for $\alpha = .05$ and $\alpha = .01$.

*1.96, critical value of the t distribution for $\alpha = .05$ (two-tailed test).

**2.58, critical value of the t distribution for $\alpha = .01$ (two-tailed test).

multicollinearity concerns, we mean-centered the constructs before computing their cross-products. Accordingly, we tested five models. Model 1 focused on social innovation as the dependent variable, while Models 2 to 5 centered on entrepreneurial performance as the dependent variable. Model 1 explored the impact of responsible entrepreneurship on social innovation. Model 2 scrutinized the direct effect of responsible entrepreneurship on entrepreneurial performance. Model

3 introduced the effects of social innovation and the moderator variable (SDGs commitment). Model 4 incorporated interaction effect variables, specifically (1) social innovation X SDG commitment. Following recent mediation estimation procedures (e.g., Adomako et al., 2022; Zahoor & Al-Tabbaa, 2021), we estimated Model 5, the full structural model, utilizing a single model estimation procedure where both social innovation and entrepreneurial performance served as dependent

	Value	SE	z	p
Sobel	0.05	0.03	2.07	.05
Bootstrap results for the indirect effect	Effect	SE	LL 95% CI	UL 95% CI
	0.02	0.05	0.02	.11

Note: N = 220. Bootstrap sample size = 10,000.

* $p < .05$. ** $p < .01$.

TABLE 5 Indirect effect and significance using the normal distribution.

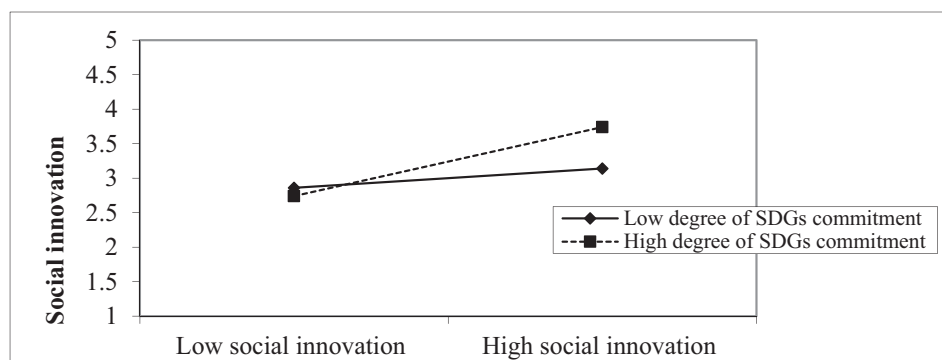


FIGURE 2 The interaction effect of social innovation and degree of SDGs commitment on entrepreneurial performance.

variables. Throughout each model estimation, we reported model fit indices and, where applicable, variations in squared multiple correlations (R^2).

4.4 | Hypothesis testing

The descriptive statistics and corrections are presented in Table 3. Hypothesis H1 proposed that responsible entrepreneurship would be positively related to social innovation. The results of model estimation, presented in Table 4, support Hypothesis H3 ($\beta = .28$; $t = 3.79$; $p < .01$). In Hypothesis H2, we stated that social innovation mediates the relationship between responsible entrepreneurship and entrepreneurial performance. Results in Table 4 show that responsible entrepreneurship positively relates to entrepreneurial performance ($\beta = .22$; $t = 3.19$; $p < .01$) and social innovation ($\beta = .28$; $t = 3.79$; $p < .01$). Additionally, there is a positive relationship between social innovation and entrepreneurial performance ($\beta = .14$; $t = 2.43$; $p < .05$). These results provide support for Hypothesis H2, suggesting that social innovation mediates the relationship between responsible entrepreneurship and entrepreneurial performance.

To confirm Hypothesis H2, we employed Hayes and Preacher's (2010) process macro to assess the significance of the indirect effects, utilizing both the Sobel test and bootstrapping techniques. The Sobel test, providing a formal two-tailed significance test under the assumption of a normal distribution, indicated that the indirect effect was statistically significant (Sobel $z = -2.07$, $p = .05$). Bootstrapping, involving the estimation of a 95% bias-corrected confidence interval (CI) for the indirect effect across 10,000 samples, supported the Sobel test. Following the recommendation of Shrout and Bolger (2002), the

absence of zero in the CI instills confidence that the indirect effect is significantly different from zero. In our study, the CI ranges from 0.02 to 0.11, excluding zero (Table 5). This finding suggests that the indirect effect is statistically significant within our model. Therefore, Hypothesis H2 is substantiated by the results of the Sobel test and bootstrapping analysis.

The subsequent part of the analysis explores the moderating effects of the degree of SDGs commitment on the relationship between social innovation and entrepreneurial performance. This involves testing Hypothesis H3, which predicted that the relationship between social innovation and entrepreneurial performance is moderated by the degree of SDGs commitment. As shown in Table 4, we found that the effect of social innovation on entrepreneurial performance is enhanced by the degree of SDGs commitment ($\beta = .36$; $t = 4.79$; $p < .01$). This confirms Hypothesis H3.

To highlight the direction of the interaction effects, we followed standard procedures to generate simple slopes (Figure 2) at one standard deviation above and below the mean of the moderators. By our expectations, the results revealed a robust slope in the association between social innovation and entrepreneurial performance among those with a high degree of SDGs commitment (simple slope = 0.30, $t = 3.75$, $p < .01$).

5 | DISCUSSION AND CONCLUSION

This study uses insights from the responsible entrepreneurship literature and investigates the effects of responsible entrepreneurship on entrepreneurial performance through social innovation. We also examine the moderating role of the degree of SDGs commitment on

the relationship between social innovation and entrepreneurial performance. Our investigation reveals that responsible entrepreneurship exerts a positive influence on social innovation, shedding light on the hitherto neglected role of responsible entrepreneurship in the social innovation endeavors of firms. Drawing on recent research emphasizing responsible entrepreneurship (Adomako & Tran, 2023; Azmat & Samaratunge, 2009; Xie & Wu, 2022), this study contends that a firm's degree of responsible entrepreneurship significantly shapes a firm's social innovation activities.

Furthermore, our research demonstrates that social innovation acts as a mediating mechanism between responsible entrepreneurship and entrepreneurial performance. This novel finding underscores that firms' engagement in responsible entrepreneurship can enhance entrepreneurial success through their social innovation initiatives. Finally, our study reveals that the impact of social innovation on entrepreneurial performance is contingent upon a firm's degree of SDGs commitment. This emphasizes the nuanced interplay between a firm's commitment to SDGs and its social innovation activities, contributing to improved performance. These results offer profound implications for both theoretical understanding and practical applications in the realms of responsible entrepreneurship, social innovation, and entrepreneurship development.

5.1 | Implications for theory

Our study makes noteworthy theoretical contributions to responsible entrepreneurship (Adomako & Tran, 2023; Xie & Wu, 2022) and social innovation literature (Oeij et al., 2019; Phillips et al., 2015; Shrout & Bolger, 2002). First, we establish a link between responsible entrepreneurship and social innovation, demonstrating that responsible entrepreneurship influences social innovation. This connection enriches the responsible entrepreneurship literature by integrating insights from the social innovation literature. This contribution highlights the role of responsible entrepreneurship in developing social innovation activities within firms.

Second, our study contributes to the social innovation literature (Benneworth & Cunha, 2015) by revealing the role of social innovation as a mechanism in the relationship between responsible entrepreneurship and entrepreneurial performance. While existing research has predominantly focused on the impact of social innovation on overall firm performance (Hermundsdottir & Aspelund, 2022; Phillips et al., 2015), our findings underscore the importance of social innovation in shaping the connection between responsible entrepreneurship and entrepreneurial performance. This highlights the enduring impact of social innovation on organizations, extending beyond immediate performance outcomes.

Moreover, our research advances our understanding of the boundary conditions influencing the effects of social innovation. Despite the extensive investigations into the effects of social innovation (Oeij et al., 2019; Shrout & Bolger, 2002), a lack of consensus persists in the literature. Our study addresses this gap by empirically examining one such boundary condition—degree of SDGs

commitment. Our results indicate that a firm degree of SDGs commitment plays a crucial role as a boundary condition for social innovation. Specifically, a higher degree of SDGs commitment within a firm enhances the impact of social innovation on entrepreneurial performance. Therefore, a firm's level of SDGs commitment amplifies the effects of social innovation on entrepreneurial performance. This finding contributes to the entrepreneurial literature (Apostolopoulos et al., 2018; Dhahri et al., 2021) by highlighting the degree of SDGs commitment as a boundary condition for the effect of social innovation on entrepreneurial performance.

5.2 | Implications for practice

Our study holds practical implications that can guide entrepreneurs and new ventures towards fostering responsible entrepreneurship. Notably, the research underscores the value of high responsible entrepreneurship in yielding improved performance. However, this relationship is mediated by social innovation. Crucially, the findings highlight the moderating effect of a firm's degree of SDGs commitment on the relationship between social innovation and entrepreneurial performance. These insights offer valuable guidance for real-life scenarios. First, entrepreneurs are encouraged to prioritize responsible entrepreneurship, as it serves as a potential avenue for unlocking growth opportunities. Second, entrepreneurs should actively pursue social innovation activities, as it serves as a channel through which responsible entrepreneurship could spur performance. Our results emphasize that social innovation is a mediator between responsible entrepreneurship and entrepreneurial performance. Third, the paper's insights have significant implications for new ventures in developing countries, using Ghana as a case study. The understanding of responsible entrepreneurship's consequences in such environments can provide strategic guidance for new ventures operating under similar conditions. This holds particular relevance for the developmental context of transforming economies. In conclusion, the research's theoretical significance and contextual relevance suggest its potential to contribute to both theoretical understanding and managerial practices, especially in the dynamic landscape of responsible entrepreneurship across developing and emerging markets.

6 | LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

While this study provides valuable insights, certain limitations pave the way for future research endeavors. First, the study's findings draw from a sample in Ghana, limiting the generalizability of the role of the findings to other contexts. Ghana's strong collectivistic culture, emphasizing assertiveness and independence (Adomako & Tran, 2023), in responsible entrepreneurship, implies that interpretations should be context-specific, considering the centrality of families and communities in social behavior. Future studies could enhance the external validity by adopting a multi-country approach, encompassing

diverse regions like Europe, Latin America, and Africa, to account for distinct contextual nuances influencing how responsible entrepreneurship shapes firm behavior and performance. Second, the measurement of entrepreneurial performance relied on self-reported data, susceptible to social desirability bias (Chung & Monroe, 2003; Nederhof, 1985). To address this limitation, future research may benefit from employing triangulated methods, such as incorporating objective indicators or assessing relevant objective performance such as return on assets, profitability, and employment growth within each firm.

Third, the cross-sectional nature of our sample restricts the ability to make causal claims (Antonakis et al., 2010). Despite formulating hypotheses grounded in existing literature, a longitudinal design, with data collected at different points in time, would be more conducive to establishing causal relationships. Furthermore, our reliance on surviving firms introduces a potential limitation related to survivorship bias (Brown et al., 1992). While we believe this bias does not significantly impact our results due to substantial variation between the dependent and independent variables, we encourage future researchers to address and account for survivorship bias in their analyses. This consideration will contribute to a more comprehensive and nuanced understanding of the dynamics under investigation.

Notwithstanding these limitations, our results underscore the positive influence of high levels of responsible entrepreneurship on entrepreneurial performance through social innovation. Additionally, the findings reveal that the degree of SDGs commitment acts as a moderator in the relationship between social innovation and entrepreneurial performance. In essence, this study contributes to the responsible entrepreneurship literature by broadening our understanding of these dynamics.

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