

Corporate Sustainability and Service Innovation; Moderating role of absorptive capacity



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Purpose: The study's goal is to examine the effect of corporate sustainability dimensions on service innovation. It further investigates the moderating role of the absorptive capability of the firm.

Design/methodology/approach: Using purposive sampling, data are collected from individuals in service firms across diverse industrial sectors in Ghana. A total of 628 questionnaires were dispersed to diverse service enterprises within the period from March 2021 to June 2021. After the data collection, the response rate achieved was 82% translating into over 500 answered questionnaires. A total of 514 answered questionnaires are used for empirical analysis.

Findings/results: The outcome of the study indicates environmental sustainability practices, economic sustainability practices and social sustainability practices had an impact on the service innovation process and outcome. In addition, absorptive capabilities of service enterprises are found to positively moderate the link amid the scopes of corporate sustainability practices and service innovation.

Practical implications: Managers and firms need to implement their internal innovation capabilities in order to derive significant and positive effects on corporate sustainability practices. The integration of corporate sustainability and service innovation in small and medium enterprises (SMEs) is imperative.

Originality/value: The outcome of the research contributes to the increasing body of literature on the liaison between corporate sustainability and service innovation by offering insights into environmental, social and economic sustainability practices. This shapes the sustainability direction and procedures towards the transmittal of value-added services.

Keywords: environmental sustainability; economic sustainability; social sustainability; service innovation; absorptive capacity; SMEs; Ghana.

Introduction

Firms in the past decade have instituted measures and mechanisms to make sustainability practices a core facet of their activities. Organisations are encouraged to incorporate economic prosperity, social well-being, and environmental promotion/concerns in their products or service delivery processes. The concept of sustainable development is increasingly becoming an indispensable aspect of businesses (Štreimikienė & Ahmed, 2021; Galpin et al., 2015). Aside from incentivising organisations to adopt sustainability practices, pressures and demands from stakeholders such as customers have influenced the sustainability practices of firms to acquire and retain customers and new market organisations adopt strategies to boost green product and service delivery. Offering green products and services has provided organisations the leverage to compete in the emerging green economy (Masocha, 2018; Thiel, 2015). The emergence of the green economy has offered organisations a common playfield to achieve sustainability objectives regardless of size and organisational age. Achieving a high degree of sustainability requires continuous innovation in terms of both process and product development. Organisations should constantly scan and realign organisational resources and competencies to enrich their green innovation processes.

As elaborated in management and innovation literature, superior innovation is critical to the performance and success of the organisation and especially so in the era of green evolution (Asadi et al., 2020; Singh et al., 2020; Zhang et al., 2019). However, most of the studies examining sustainability and innovation performance place significant emphasis on product innovation in the green era. Green product innovation has been the focal point for most studies in the sustainability

literature (Melander, 2017; Xie et al., 2019). These studies emphasise that corporate sustainability practices have an impact on the green innovation performance of firms. In most cases, organisations can reconfigure and realign resources to ensure the smooth development and commercialisation of green products. Non-arguably, the effect of corporate sustainability on organisational performance cannot be underestimated (Chang, 2016; Dangelico, 2016; Khan et al., 2021). Despite the literature on sustainability keeps growing, a survey of the body of knowledge would reveal that much attention is placed on product innovation as compared with service innovation (Khan et al., 2021). There is extant literature discussing sustainability practices and green-oriented service innovation. Summarily the effect of sustainability on service innovation is under-investigated in the literature (Calabrese et al., 2018). Therefore, it limits understanding of how corporate sustainability practices impact the service innovation of firms' especially small and medium enterprises (SMEs) in developing economies. The findings of the study contribute to the growing discourse on corporate sustainability by elaborating on the interrelation between social, economic and environmental sustainability on service innovation. The inputs required to enrich green product innovation is distinct from service innovation requirement. The rationale for examining this phenomenon in SMEs is rooted in the fact that these enterprises contribute significantly to the productivity and growth of the national economy. Small and medium enterprises make up the majority of enterprises in the targeted location. In addition, they operate across the diverse industrial sector, therefore it is prudent to ensure that these enterprises adhere to economic, social and environmental sustainability practices.

The impact of corporate sustainability on SMEs service innovation is investigated in this research. This study adds to the body of literature by offering empirical insight into the liaison between corporate sustainability and service innovation in an emerging economy. Although corporate sustainability can impact the service innovation performance of firms, innovation requires a balance between internal competence and external capabilities. Firms can derive significant benefits from corporate sustainability practices if it has superior absorptive capabilities. Absorptive capabilities are termed as firm's ability and capabilities to acquire, assimilate and convert new novel knowledge into new improved products or services (Makhloufi et al., 2022). The absorptive capability of the firm enhances the sustainable orientation, realignment of resources and human capital towards building green competencies and capabilities (Aboelimged & Hashem, 2019; Albort-Morant et al., 2018).

In addition, the absorptive capabilities of a firm aids in the translation of slack resources into innovation processes to improve the efficiency and effectiveness of an organisation. This study conceptualised that enterprise that possess the requisite knowledge and human capital can enrich their corporate sustainability practices, which have a ripple effect on the service innovation of firms. The study's main goal is to

look at the impact of corporate sustainability on small- and medium-sized businesses' service innovation. In addition, the study examines the moderating role of the absorptive capacity of firms on the effect of corporate sustainability on service innovation. The rest of the article is outlined as follows: section Literature review brings out the literature review and hypotheses development, section Hypothesis development demonstrates the research methodology, section Methodology focuses on the empirical analysis, result, and discussion, and lastly section Discussion and conclusions discusses the outcome and resolution for further research.

Literature review

Service innovation in the era of sustainability

Numerous researches on innovation and its effect on business performance litter the management and organisational literature (Thornhill, 2006; Tuan et al., 2016). The key to survival in a competitive business climate is to recognise the importance of innovation. Innovative businesses create and sustain a competitive advantage that enables them to expand into new markets, opportunities and customers. The innovation process entails the application of knowledge, human capital and resources (both internal and external) to create and market new products and services. Commercialisation of these unique products and services is projected to result in economic rewards for the focal firm (Lusch & Nambisan, 2015). The outcome of a firm's innovation activities is categorised as product innovation (Fleith de Medeiros et al., 2022), process innovation (Awan et al., 2021) and service innovation (Giannopoulou et al., 2014; Kuo et al., 2014). According to Breunig et al. (2014), service innovation entails developing a new service experience or solution that incorporates a new improved model of customer engagement; new value systems for stakeholders; an enhanced revenue model; or a new technology service delivery system.

Furthermore, Tidd and Hull (2003) defined service innovation as the utilisation of new improved methods to enrich the service delivery process by offering customers' value-added services. The underlying premise of service innovation is to find a new mode of enriching the service delivery process through the offering of radically new value-added services or incremental improvement of existing services (Hameed et al., 2021). Service innovations are distinct from manufacturing innovations, and are gaining traction as a sort of social technology that divides labour and coordinates via flexible routines. In addition, the critical role of customers in co-creating experiences distinguishes service innovations from those in other industries (Ioannides, 2010; Nelson & Sampat, 2001). These co-created activities can contribute to sustainability by involving service recipients and relevant stakeholders. The involvement of necessary stakeholders is resolved in the formation of actor – actor service network (Warren & Coghlan, 2016). Actors within this service network offer firms the appropriate resources and knowledge to co-develop new services that meet the

expectation of customers. Also, co-creation between firms and customers is of critical relevance especially in this era of sustainability (Zhang et al., 2021).

Service organisations can be classified according to their innovativeness, which represents their tacit understanding of co-creating with clients through the use of their practical, observational and acculturated awareness. For example, innovative businesses understand their consumer base and understand how to influence customer behaviour as well. Service firm innovations are classified by Salter and Tether, 2013 into three categories: traditional services firms with a low skill level of employees and risk-averse owners – for example, rural SMEs system firms, which apply true innovations encompassing division of labour, technology and organisation and professional services firms. Service innovation is acknowledged to affect the performance of service enterprises, the quest to achieve a sustainable business environment and organisation performance has altered the service innovation process. Service innovation in the past decades has taken a sustainability dimension – advocating for the development and usage of social technologies (Calabrese et al., 2021).

The adoption of sustainability-oriented service innovation is a deliberately high-level strategy by organisations to become more sustainable by deliberately improving the function of services by linking sustainability objectives/goals and business practices (Adams et al., 2016; Klewitz & Hansen, 2014). However, it is worth knowing that sustainability-oriented service innovation does not rest on the usage of technology alone but further includes constant engagement with necessary stakeholders in the firm's internal and external environment. Continuous interaction between the firm and relevant stakeholders would ensure continuous learning and further shape the sustainability orientation and capabilities of the firm. The sustainability orientation of a firm is crucial to firm service innovation performance (Klewitz & Hansen, 2014; Mitchell & Bruckner Coles, 2004).

Corporate sustainability

Business sustainability has been widely employed in the last decade by the corporate sector, environmental organisations and consulting firms to justify sustainability policies within enterprises. The pursuit of sustainable organisations has gained momentum across a variety of industrial sectors (Schaltegger et al., 2022). Corporate sustainability practices have attracted both academics and practitioners' attention because of their potential to ensure responsible innovation and consumption. While sustainability practices in organisations initially focused on environmental management, they have expanded to include social and economic components in recent years. Corporate sustainability is a practice that aims to improve a corporation's triple bottom line (Yu & Zhao, 2015). While no commonly accepted definition exists of corporate sustainability, a synthesis of possible definitions demonstrates that sustainability strategies prioritise economic viability,

social responsibility and environmental stewardship. To attain a high degree of sustainability, businesses must strive to meet the requirements for all three dimensions (Dyllick & Hockerts, 2002; Herbohn et al., 2014). Corporations' commitment to long-term sustainability can be defined as the application of a broad concept of sustainable development to the corporate environment. The fundamental tenet of sustainability practices is to ensure that an organisation's operations do not harm society or the environment (Baumgartner & Ebner, 2010; Schaltegger & Burritt, 2005).

Fundamentally, the organisation initiates strategies to implement sustainability practices as a mode of adhering to compliance requirements. Companies employ sustainable strategies and practices to comply with legal requirements, gain access to new markets and customers, and boost shareholder value, among other things. Every business depends on its customers to survive and this is especially true for environmentally conscious enterprises. According to Singh et al. (2012), firms that are perceived to be ethical towards stakeholders and customers have a higher likelihood of gaining and maintaining new and existing customers than those that are not. The performance of a company's sustainability strategy takes into account societal concerns as well. Businesses must establish strategies to increase both social and environmental sustainability performance to increase corporate sustainability performance, rather than focusing solely on environmental sustainability.

Missimer et al. (2010) argued that social issues must be treated on an equal footing with environmental and economic concerns and that a move towards social sustainability is required (Missimer et al., 2017). Most businesses, depending on their industry, are only now beginning to consider social issues, according to recent trends. In the past, the social dimension has usually been disregarded; similarly, social sustainability has received the least amount of attention in academic literature (Gmelin & Seuring, 2014; Missimer et al., 2017). Increased social sustainability performance is made possible by the new definition of socially sustainable development proposed by Missimer et al., 2017, which states that 'in a socially sustainable society, people are not subject to structural barriers to health, influence, competence, impartiality and meaning-making'. Corporate sustainability policies must be developed to remove these roadblocks, both for employees on an individual level, (e.g. salary assessment and flexible work hours) and for society as a whole (e.g. environmental compliance) on perceptive and perceptual levels (e.g. sustainable and safe product development and working conditions of partner companies within supply chain). The systemic ramifications and effects of a corporation's sustainability initiatives must be considered while developing a business sustainability strategy.

Absorptive capability

According to Cohen and Levinthal (1990), research and development efforts not only generate new information and

innovation but also improve a firm's ability to recognise, assimilate and exploit the knowledge that is located outside the firm's internal boundaries. This capacity was called absorptive capacity by the researchers. The absorptive capability is defined as a firm's ability to perceive the value of fresh, external knowledge, digest it and administer it to commercial objectives (Marrucci et al., 2022). In their opinion, a firm's prior related knowledge, which influences its innovative capabilities, accounts for the majority of the determination of this competency. Therefore, the breadth and differentiation of categories, as well as their interconnections, have an impact on how new knowledge is perceived.

The ability of a company to perceive the value of new and external information, digest it, use it economically and collaborate across institutional and jurisdictional boundaries is critical to the organisation's ability to innovate effectively (Cohen & Levinthal, 1990; Vines, Jones, & McCarthy, 2015). As a result, understanding the success of innovation, which is defined by its reliance on external information, requires an understanding of the concept of absorptive capacity (Spithoven, Clarysse, & Knockaert, 2011). The role of absorptive capacity on the innovation performance of firms cannot be underestimated (Qi et al., 2021). For instance, absorptive capacity such as research and development competence and entrepreneurship of firms and leaders is acknowledged to affect the innovation performance of a firm.

A firm's absorptive capacity is a dynamic capability that may be classified into two dimensions: potential absorptive capacity and actual absorptive capacity. Both dimensions are defined by four fundamental capabilities: acquisition, assimilation, transformation and exploitation (Zahra & George, 2002). However, it is prudent for firms to recognise the value of external knowledge to reinforce their internal innovation capabilities. And this is essential and relevant in the design and commercialisation of sustainability products and services. Through the recognition of external resources and knowledge, firms with relevant stakeholders can co-create to ensure that product and service meets customer and community expectations (Marrucci et al., 2022). The absorptive capacity of firms in a sustainable environment contributes significantly to the utilisation of new knowledge and resources to offer new enriched services.

Organisations that possess superior capacity can easily translate and reconfigure internal processes to utilise acquired knowledge and slack resources in the external environment to design and commercialise newly improved services (Marrucci et al., 2022; Song et al., 2020). The absorptive capability of firms is rooted in the intensity of eco-friendly research and development activities (Liao et al., 2007; Yun, Zhao, & Hahm, 2018). Specifically, according to the research of Dzhengiz and Niesten (2020) managers' ability to perceive and acquire external information helps the development of internal environmental competence and further enhances the assimilation capacity of the company.

Furthermore, it also illustrated as to how companies can develop long-term capabilities through the use of information and knowledge. The dynamic and cyclical relationship between sustainability competencies and capabilities also has an impact on an organisation's ability to absorb resources sustainably. Firms' ability to absorb new information is essential to their overall performance in terms of innovation.

Hypotheses development

Corporate sustainability and service innovation

Corporate sustainability as elaborated in the sustainability literature is an organisational strategy to ensure that organisations meet economic sustainability, environmental sustainability and social sustainability requirements (Gunarathne & Lee, 2021). Corporate sustainability has evolved from environmental management to encompass the social and economic dimensions. This is to satisfy the triple bottom line of organisations (Herbohn et al., 2014; Yu & Zhao, 2015). Corporate sustainability is acknowledged to impact the green innovation performance of the organisation, especially product innovation in the manufacturing sector (Chen, 2008; Cheng, 2020). However, the current body of literature offers scanty insight into how corporate sustainability practices impact the service innovation of firms.

From the service-dominant logic, services are distinct from products, and hence necessitate the development of distinct innovation methodologies (Font et al., 2021). Because of the intangibility of services and its negative impact on customer happiness businesses are continually looking for new ways to improve the service delivery process while also reducing customer pain points along with the service buying experience (Wilden et al., 2017). The primary assumption of the service-dominant logic is that it provides businesses with a framework for rethinking the role of service delivery and value generation in their business' operations (Peltier et al., 2020). As corporate sustainability stands to contribute to sustainability-oriented service innovation, there have been extant studies examining this relationship. In general, the liaison between corporate sustainability and service innovation is understudied in the literature (Calabrese et al., 2018). In cases where corporate sustainability and service innovation are studied, service innovation is considered an antecedent of corporate sustainability (Forcadell et al., 2019). Furthermore, studies have placed greater emphasis on economic and environmental sustainability neglecting social sustainability and its consequence on service innovation.

To improve an organisation's sustainability performance, deliberate efforts must be made to explore and offer eco-innovations and green value-added services to differentiate the organisation from competitors, particularly in a volatile, uncertain, complex and ambiguous (VUCA) business environment (Wiścicka-Fernando, Misiak-Kwit, & Fernando, 2019). Attempting to harness the necessary knowledge and skills to enhance service innovation capabilities, it is critical to ensure that enterprises flourish in a green business environment. Companies can co-create with important

stakeholders only if they have the proper framework in place. Improved service capabilities provide a competitive advantage to the main firm while also raising the bar for new entrants into the marketplace. Environmental sustainability practices are documented to affect the green product innovation of firms, especially in the manufacturing sector. Studies in the environmental management perspective equate sustainability practices to environmental management and contend that firms should place much attention on mitigating the environmental consequence of activities to attain significant feat in corporate sustainability (Keskin et al., 2013). These eco-conscious practices enable firms to boost their green innovation capacity. Notwithstanding the effect of environmental sustainability practices on green product innovation, its consequence on service innovation is fuzzy.

Service enterprise requires a different set of capabilities to derive benefits from their sustainability practices. The request for green services by customers can be achieved when the organisation builds robust green service competencies. The service innovation capabilities of firms are related to its green service innovation outcome (Gandhi et al., 2019) and through co-design and co-creation organisations can move beyond just adhering to sustainability compliance requirements to better address stakeholder environmental challenges in a broader perspective. Through conscious efforts, service providers can reduce waste in their whole service offering lifecycle (Evans et al., 2007). Social sustainability requires organisations to offer a safe and healthy workplace for employees. In addition, firms are expected to drive socially driven services to ensure the well-being of internal and external stakeholders.

By ensuring that societal needs and well-being are met, organisations stand the chance to give insights into the pertinent societal issues affecting communities (Enquist et al., 2015). Having insights into challenges to these challenges offer organisations the leverage to design and implement social service innovation programmes. The integration and deliberate partnership between firm and community can enrich the co-creation and co-innovation process of firms. In addition, their interactions provide legitimate grounds for the acceptance of a firm's services (Cocca & Ganz, 2015). Offering green services can provide some form of economic gains to organisations (Cocca & Ganz, 2015); however, to offer green services businesses should have initiated sustainability practices over a period. The practice of corporate sustainability opens up organisations to new markets and opportunities. The birth of sustainability practices has opened entirely new green markets. Exploring these markets promises significant economic returns to firms – offering green services enables firms to attract and retain a new distinct group of customers. The practice of economic sustainability practice ultimately would affect the service innovation outcome of businesses (Lin & Chen, 2018). Summarily, the dimensions of corporate sustainability when practiced holistically have the potential to impact the service innovation outcome and performance of service enterprises.

Environmental sustainability practices, social sustainability practices and economic sustainability practices are argued to influence the service innovation of service firms as a whole and in their various dimensions. Based on the given theory, hypotheses 1–3 are formulated:

H₁: Environmental sustainability practices have a positive impact on the service innovation of firms.

H₂: Social sustainability practices have a positive impact on the service innovation of firms.

H₃: Economic sustainability practices have a positive influence on the service innovation of firms.

Moderating effect of absorptive capabilities

Innovation performance of firms rests on the firm's ability to create new products and services through the utilisation of new knowledge that can be either acquired internally or externally. From an open innovation perspective, no single organisation possesses all the requisite skills and knowledge to support innovation processes, therefore the firm in some cases seeks for external resources to boost internal innovation competence and capability (Lopes et al., 2017; Rauter et al., 2019) and this is especially so in the quest to offer eco-innovative services. Comparatively, not every enterprise has the ability to utilise slack resources and knowledge acquired in the external environment through exchanges with relevant stakeholders. Studies in the domain of innovation management and organisational learning have documented that organisations with superior absorptive capabilities can acquire, assimilate and utilise slack resources and knowledge to deliver value-added services (Chen et al., 2009; Tsai, 2006).

Although these findings are mostly conducted in product innovation, achieving a superior feat in service innovation will require firms to possess robust internal learning and knowledge diffusion systems to ensure rapid utilisation and experimentation of new services. The acquisition, assimilation and transformation of knowledge into new improved service is the bane for successful service innovation outcomes in a sustainable era (Gluch et al., 2009). Service enterprises can derive superior benefits from corporate sustainability practice if they institute deliberate mechanisms to boost internal organisational learning. Through this approach, organisations can convert the knowledge and resources acquired into improved value-added services to boost organisational performance. Firms' absorptive capability in a sustainable environment greatly contributes to the exploitation of new knowledge and resources to offer new enriched services. Organisations with superior capacity can readily translate and reconfigure internal processes to use gained knowledge and slack resources in the external environment to build and commercialise new enhanced value-added services that fulfil the triple bottom line (Song et al., 2020; Zhang et al., 2020).

This study conceptualises that organisation with superior absorptive capacity stand the chance to boost their service innovation outcome through the practice of corporate

sustainability. The absorptive capacity of firms would impact the ability of the business to translate knowledge and resources into eco-innovative services that serve societal needs and further improve the economic gains of enterprises. This study hypothesises that the absorptive capacity of a firm can moderate the liaison between corporate sustainability and service innovation. The organisation that possesses a high standard of absorptive capabilities has the propensity to improve its service innovation performance and vice versa. Based on the given assertion, hypotheses 4–6 are formulated:

H₄: Absorptive capability of the firm can positively moderate the relationship between environmental sustainability practices and service innovation.

H₅: Absorptive capability of the firm can positively moderate the relationship between social sustainability practices and service innovation.

H₆: Absorptive capability of the firm can positively moderate the relationship between economic sustainability practices and service innovation.

Methodology

Method and data

To address the hypotheses for the study, data are acquired from SMEs in the services industry of Ghana. The service sector is considered because it contributes significantly towards the economic development of the country. In addition, the service sector employs a majority of individuals in the private sector of the economy. The success and process of the service sector have a direct effect on the economic well-being of the nation. In addition, information from Ghana Statistical Service (GSS) indicates that service enterprises comparatively are relatively larger than the manufacturing sector in the SME space.

Again, the survey approach is consistent with earlier management and organisational studies research (Peltier et al., 2020; Tsai, 2006). In addition, the usage of primary data is appropriate because of non-availability of secondary data (Pahos & Galanaki, 2019). There is also a scarcity of easily accessible secondary data on service innovation, which is particularly acute in developing economies such as Ghana.

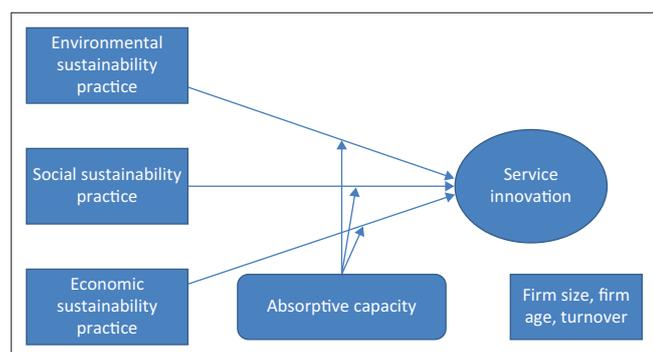


FIGURE 1: Conceptual model of the study.

Measurement instrument development

In management literature, the selection of data collection tool such as the questionnaires is a well-established and well-documented process. The questionnaire used in this study was developed following Shelley and Horner (2021) and Parfitt (2005) recommendations. The questionnaire employed in this study is mostly composed of items to which respondents are asked to reply with their level of agreement or disagreement. The questionnaire's items are graded on a seven-point Likert scale. Each theoretical construct is quantified using a number of measurement items. To ensure the validity of the questionnaire, measuring items were selected by synthesising measures from extant literature on the subject matter. Using Harman's (1967) single-factor test, the extent of common method bias is examined. Measurement items for independent and dependent variables are grouped into sections of the questionnaire, which are then separated into subsections (Krishnan et al., 2006). The questionnaire's reliability and validity are also assessed by a series of pilot tests and expert evaluations, which are conducted in parallel. Important information was uncovered by the authors during these pre-test sections, which resulted in adjustments to the final survey instrument. Additional evidence from the key informant's pre-test discussion suggests that social desirability bias may have an impact on the validity of the results.

Measures

The measures used to examine the relationship between corporate sustainability, absorptive capacity and service innovation of firms are adopted from literature in the area of corporate sustainability, green or sustainability-oriented service innovation and absorptive capabilities. These variables are selected by synthesis constructs in the literature on the subject.

Environmental corporate sustainability practises

The environmental business sustainability practises measures included five items adapted from a study by Adebambo et al. (2015) and utilised in a study by Frempong et al. (2021). Examples include the following: (1) my organisation recognises environmental sustainability practises as critical to success in the green economy; (2) our organisation deliberately implements measures to promote the offering of environmental products and services; and (3) our firm prefers to work with partners and organisations that have environmental certification. The reliability of ESP items in this research is 0.768.

Social corporate sustainability practises

The social corporate sustainability practises (SCSPs) measure includes five questions from research conducted by Crowther and Seifi (2016) and Liang et al. (2020) to assess business entities' workplace safety and wellness policies and processes. Examples of items are as follows: (1) I believe our business's promotion plan and procedure are fair; (2)

diversity is at the heart of organisational culture; and (3) our organisation pays the expense of employee safety. Social Sustainability Practices measurement item reliability score was 0.874.

Economic corporate sustainability practises

The economic corporate sustainability practises (ECSPs) measure incorporates six questions from Wagner (2005) and Montiel (2008) strategies for achieving a strong financial bottom line for a particular organisation. Examples include (1) my organisation has witnessed an increase in eco-products sales; (2) revenue from green practices have a positive impact on firm financial performance; and (3) the level of waste in organisational processes and practises has reduced significantly with the adoption of sustainable practises. The measurement item reliability score for ECSP was 0.834.

Absorptive capacity

The measures used to investigate absorptive capacity (AC) is adopted from studies conducted by Zacharia et al. (2011) and used in study by (Aboelmaged & Hashem, 2019). The items comprises seven questions – for example, (1) my firm recognises valuable novel knowledge; (2) my firm absorbs useful green knowledge; and (3) my firm uses novel ideas to enhance innovation and firm performance. The measurement item reliability score for AC was 0.852.

Service innovation

Green oriented service innovation (SI) is measured using adapted scale developed by Chen et al., 2011. The measurement of green SI consists of five items. For example, (1) the firm repackages existing services based on its environmental concerns; (2) the firm proposes new practices in the promotion of new services to improve environmental reputation and (3) the firm offers new customer service based on social and environmental concern of stakeholders. The reliability score for SI is 0.885.

Sample and data collection

Employee of SME enterprises in Ghana were the target group for the study. A purposive sampling approach is used to acquire data from the management of SME enterprises – these individuals are broadly selected from the hospitality industry, financial and professional service firms and logistics sector of the economy. In addition, targeted firms are selected from the Greater Accra and Tema Metropolis. The rationale for selecting this location is based on the assertion that majority of enterprises are located in these vicinities.

Using purposive sampling, data are collected from individuals in management position across diverse organisational departments and units. These informants are selected because of their involvement in organisation sustainability activities, new service development processes and organisational learning programmes. Furthermore, these respondents are considered to have superior knowledge about firms' corporate sustainability practices and its outcomes on various service

offering. As a result of the scope and number of firms' understudy, the services of competence enumerators are engaged to facilitate data collection.

Summarily, a total of 628 questionnaires were distributed to diverse service enterprises during the period March 2021 to June 2021. After the data collection period, the response rate achieved was 82% translating into over 500 answered questionnaires. A total of 514 answered questionnaires are used for empirical analysis.

Analysis and result

Profile of respondents

The study utilised a sample of 514 respondents selected from diverse organisations. These informants are knowledgeable and have enough experience in the practice of business sustainability and organisational innovation processes across different industries. Respondent demonstrated an appreciable amount of knowledge on the subject. These respondents are selected from industrial sectors such as banking and finance (48% resulting in 246 respondents); insurance (14% translating into 72 respondents); Professional service firms (32% translating into 164 respondents); healthcare (6% translating into 32 respondents). The profile information of respondents is presented in Table 1.

Descriptive statistics

Table 2 displays the distribution and characteristics of the data collected over a period of several years. It focuses on the mean, standard deviation and excess kurtosis of a distribution. In addition, the skewness of the data, as well as the minimum and maximum data points are not included in the analysis. The findings imply that the data are normally distributed and that there are no significant outliers that could compromise the validity of the conclusion.

TABLE 1: Profile of respondents.

Factor	Frequency
Gender	
Male	190
Female	324
Respondent's age (in years)	
18–25	7
26–30	75
31–35	217
36–40	98
41–45	83
46–50	28
> 50	6
Educational background	
Doctorate degree	18
Master's degree	349
Bachelor's degree	147
Work experience (in years)	
< 5	16
6–10	398
11–15	58
16–20	28
> 20	14

TABLE 2: Descriptive statistics.

Variables	Mean	Min	Max	Standard deviation	Excess kurtosis	Skewness
Absorptive capacity (AC)						
AC1	5.342	1.000	7.000	1.023	0.783	0.134
AC2	5.128	1.000	7.000	1.189	0.231	0.341
AC3	5.032	1.000	7.000	1.432	0.321	0.987
AC4	5.132	1.000	7.000	1.671	0.675	0.231
AC6	4.452	1.000	6.000	1.432	0.342	0.453
AC7	5.783	1.000	7.000	1.782	0.442	-0.321
Environmental sustainability practices (ESP)						
ESP1	5.842	1.000	7.000	1.089	0.345	-0.321
ESP2	4.984	1.000	6.000	1.182	0.345	-0.127
ESP3	5.327	1.000	7.000	1.094	1.182	-0.157
ESP4	5.893	1.000	7.000	1.432	0.430	-0.659
ESP5	5.321	1.000	7.000	1.081	1.870	-0.703
Social sustainability practices (SSP)						
SSP1	5.342	1.000	7.000	1.981	1.342	-1.453
SSP2	5.586	1.000	7.000	1.042	3.738	-1.437
SSP3	5.321	1.000	7.000	1.345	1.687	-1.066
SSP4	5.199	1.000	7.000	1.897	1.453	-0.256
SSP5	4.783	1.000	6.000	1.429	1.897	-0.893
Economic sustainability practices (ECP)						
ECP1	5.897	1.000	7.000	1.084	1.021	-0.345
ECP2	5.460	1.000	7.000	1.063	0.937	-0.693
ECP3	4.897	2.000	7.000	1.879	0.897	0.231
ECP4	5.099	1.000	7.000	1.090	0.429	-0.678
ECP5	5.876	1.000	7.000	1.184	0.289	-0.581
Service innovation (SI)						
SI1	5.332	1.000	7.000	1.067	1.032	0.186
SI2	5.762	1.000	7.000	1.435	1.210	0.438
SI3	5.237	1.000	7.000	1.283	1.230	0.986
SI4	5.897	1.000	7.000	1.321	1.638	-0.937
SI5	4.789	2.000	7.000	1.895	0.974	-0.321

Exploratory factor analysis

Exploratory factor analysis is a time-honoured method for assessing both observable and latent variables. It enables the examination of structural equivalence between observable and latent variables (Aluja et al., 2017). Exploratory factor analyses are used to determine structural validity. The principal component approach with varimax rotation was used to explicitly extract factors ($N = 514$). These variables explained 52.38% of the variance. In addition, the Kaiser–Meyer Olkin (KMO) initial sample adequacy test and the Bartlett test of sphericity is performed. The results indicate that the structural model passes the Bartlett test of sphericity (about Chi-Square: 901.432, df: 514, sig.: 00) and the KMO test (value of 0.857). The measurement items met the established standard for factor loading (Haenlein & Kaplan, 2004; Hair et al., 2014).

Furthermore, the Cronbach's alpha and average variance extraction methodologies are used to determine the reliability and validity of measurement items. Each of the constructs under investigation had an adequate alpha value and an extracted value for the average variance. The results of these tests establish a foundation for conducting additional analysis to discover the link between various latent variables. The factor loadings, alpha value and average variance extracted values are listed in Table 3.

TABLE 3: Exploratory factor analysis.

Variables	Factor loading	Alpha value	Average variance extracted
Absorptive capacity (AC)			
AC1	0.645	0.852	0.897
AC2	0.878		
AC3	0.828		
AC4	0.756		
AC6	0.832		
AC7	0.629		
Environmental sustainability practices (ESP)			
ESP1	0.818	0.768	0.867
ESP2	0.748		
ESP3	0.794		
ESP4	0.715		
ESP5	0.692		
Social sustainability practices (SSP)			
SSP1	0.764	0.874	0.798
SSP2	0.832		
SSP3	0.822		
SSP4	0.781		
SSP5	0.618		
Economic sustainability practices (ECP)			
ECP1	0.901	0.654	0.752
ECP2	0.868		
ECP3	0.692		
ECP4	0.598		
ECP5	0.738		
Service innovation (SI)			
SI1	0.698	0.885	0.835
SI2	0.742		
SI3	0.651		
SI4	0.871		
SI5	0.756		

Correlation analysis

Table 4 presents the outcome of correlation and regression analysis conducted to test the effect of corporate sustainability on the service innovation of firms. Furthermore, it reports the moderating effect of absorptive capacity on the liaison between corporate sustainability scopes and service innovation. The outcome of the correlation test indicates that multicollinearity is not present within the data, therefore providing some degree of credibility for the findings of the study. In addition, correlation tests provide basic insights into the relationship between discussed variables. From the correlation analysis, it can be deduced that all constructs understudy had some form of relationship with service innovation. Although correlation is not an equal causality, environmental and ECSP had a significant relationship with service innovation.

To examine the effect of corporate sustainability on service innovation and subsequently moderating role of absorptive capacity, hierarchical regression is conducted. The results of the regression analysis indicated an overall R^2 value of 0.256 and 0.682 for model 1 and model 2, respectively. Model 3 examines the moderating effect with an R^2 value of 0.753, indicating a change in R^2 of 0.071. Inasmuch as environmental and economic sustainability had significant regression coefficient social sustainability

TABLE 4: Correlation outcome.

Variables	1	2	3	4	5	6	7	8
1. Firm size	-	-	-	-	-	-	-	-
2. Firm age	0.118	-	-	-	-	-	-	-
3. Turnover	0.278	0.142	-	-	-	-	-	-
4. Service innovation	0.384*	0.183*	0.487	-	-	-	-	-
5. Absorptive capacity	0.539*	0.467	0.616*	0.213	-	-	-	-
6. Environmental sustainability practice	0.387*	0.098	0.538**	0.271*	0.561*	-	-	-
7. Social sustainability practice	0.438	0.587**	0.182*	0.178	0.547	0.631*	-	-
8. Economic sustainability practice	0.045	0.376*	0.600	0.529	0.328*	0.262	0.493*	-

*, Denotes $p < 0.10$.

**, Denotes $p < 0.05$.

TABLE 5: Regression outcome.

Variables	Model 1	Model II	Model III
Constant			
Firm size	0.373 (2.768)***	0.432 (2.732)**	0.513 (5.638)*
Firm age	0.482 (3.541)***	0.513 (4.491)**	0.082 (0.952)
Turnover	0.229 (1.763)	0.234 (2.283)*	0.197 (0.525)
Environmental sustainability practices	-	0.546 (8.976)**	0.437 (6.567)
Social sustainability practices	-	0.489 (11.472)***	0.527 (7.067)**
Economic sustainability practices	-	0.483 (4.178)***	0.389 (12.456)**
Interactive terms			
Environmental sustainability practice × absorptive capability	-	-	0.463 (9.467)**
Social sustainability practice × absorptive capability	-	-	0.436 (5.256)
Economic sustainability practice × absorptive capability	-	-	0.579 (13.874)***
R^2	0.256	0.682	0.753
R^2	-	0.426	0.071

practice is acknowledging the impact of service innovation outcome of service firms.

Absorptive capacity is found to moderate positively the relationship between environmental sustainability, economic sustainability and social sustainability practices. The hypotheses are tested using the t -statistics value. An acceptable benchmark of 1.96 is used to assess the validity of hypotheses. The outcome of the t -test supports the hypotheses formulated for the purpose of the study. The regression outcome is illustrated in Table 5.

Discussion and conclusions

This study's main goal is to delve into the effect of corporate sustainability on service innovation. It further explores the moderating role of the absorptive capability of the firm. Drawing a sample from service firms across diverse industrial sectors in Ghana, the study empirically tests the effect of corporate sustainability dimensions on service innovation. The outcome of this study indicates environmental sustainability practices, economic sustainability practices and social sustainability practices had an impact on the service innovation process and outcome. The outcome of the research adds to the increasing body of literature on the liaison between corporate sustainability and service innovation by offering insights

into how environmental sustainability practices. The outcome of the research adds to the increasing body of literature on the liaison between corporate sustainability and service innovation by offering insights into how environmental sustainability practices affects service innovation, and this study provides evidence to support its relevance in design and deploying eco-innovative services that help customers minimise pain points in the green service acquisition journey.

Social sustainability contributes to service innovation by orienting the human capital of service firms towards sustainability practices. When individual well-being is catered for in organisations, they turn to show significant commitment towards organisational goals, in this case, business sustainability goals. Social sustainability practices in the green product literature have been indicated not to contribute significantly towards green product innovation, however, the case is different when considered in the service innovation context. Therefore, organisations should endeavour to provide talents with a requisite work environment that is safe and healthy. By doing so, organisation would gain not only commitment towards organisational objective but also further development of its internal organisational structure responsible for organisational learning. The finding further contributes to the body of knowledge that examines the effect of social sustainability practice (Frempong et al., 2021) on sustainability-oriented service innovation by offering a perspective on how social sustainability influences community engagement translating into value co-creation and green service co-development.

Economic sustainability practices are found to contribute to service innovation as seen in the case of green product innovation. The fundamental principle of organisations is to maximise profit and most but also enterprises not only in the manufacturing sector see the sustainability landscape as an avenue to explore new business opportunities and markets. Aside from adhering to sustainability compliance requirements, the business deliberately adopts sustainability practices as a medium to exploit the new market to boost revenue streams and profitability. The findings of the study are consistent with Font et al. (2021) that emphasise the importance of economic sustainability to firm green service innovation and value creation.

Notwithstanding the positive effect of the dimensions of corporate sustainability practices on the service innovation of firms, the absorptive capability of firms plays a critical role if the enterprise would improve its value addition process. The study's findings indicate that absorptive capabilities of firms contribute to its ability to translate customer demand, stakeholder pressures and regulatory compliance requirement into the design and commercialisation of new service that offers a significant value of all stakeholders. Therefore, organisations should take critical steps to boost their internal learning mechanism to ensure superior service delivery. Service enterprises can derive superior benefits from corporate sustainability practice if they institute deliberate mechanisms to boost internal organisational learning. In a sustainable environment, firms' absorptive aptitude considerably contributes to the exploitation of new knowledge and resources for the aim of supplying new enriched services. Superior capacity organisations can easily translate and reconfigure internal processes to employ gained knowledge and slack resources in the external environment to construct and sell new enhanced value-added services that meet the triple bottom line.

The findings from this study indicate that environmental sustainability practices and economic sustainability practices had a significant effect on service innovation. Consequently, the absorptive capabilities of firms are found to contribute to improvement in sustainability-oriented service innovation.

Practical implications

The SME administrators and managers, as well as the companies, can utilise the outcomes of this study to develop policy guidelines and frameworks to improve their sustainability practices and service innovations to enhance their economic and social advantage to sustain their companies in the long run. Managers/firms also need to implement their internal innovation capabilities in order to derive significant and positive effects on corporate sustainability practices. The integration of corporate sustainability and service innovation in SMEs is imperative. Managers should endeavour to provide talents with a requisite work environment that is safe and healthy. By doing so, the organisation would gain not only commitment towards organisational objective but further development of its internal organisational structure responsible for organisational learning and growth. This shapes the sustainability direction and procedures towards the transmittal of value-added services.

The study's findings indicate that absorptive capabilities of firms contribute to its ability to translate customer demand, stakeholder pressures and regulatory compliance requirement into the design and commercialisation of new service that offers a significant value to all stakeholders. Therefore, organisations should take critical steps to boost their internal learning mechanism to ensure superior service delivery. Managers' ability to perceive and acquire external information helps the development of internal environmental competence and further enhances the assimilation capacity of the company.

Limitations and scopes of further research

This study has few limitations such as: (1) the findings cannot be generalised as they are based on a study conducted on only one country, (2) even the sample size is not large enough to generalise the findings for the whole nations, (3) the result may vary if SMEs are considered separately. Therefore, there are few scopes available for future research on this issue. As this study is based on SMEs in Ghana only, to generalise the findings, it also needs to be conducted on other countries. This study makes some interesting contributions to the body of knowledge on corporate sustainability and service innovation, but future studies should consider the subject from diverse perspectives to provide enough insight into the relationship. Future studies can consider the indirect effect of sustainable orientation and sustainable collaboration on service innovation in a green context. Additional research is needed to ascertain the effect of time on the performance of these constructs. Lastly, a comparative study would reveal how these factors influence service innovation in developing and transition economies.

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Competing interests

The authors have declared that no competing interest exists.

Authors' contributions

S.S.A.-Y. was responsible for writing and formal analysis. Y.J. was responsible for supervision and contributed to shaping the article to ensure that the ideas are properly presented. M.F.F. was responsible for conceptualisation, revision and editing the manuscripts. M.A.H. and R.A. were responsible for data collection and methodology.

Ethical considerations

This article does not contain any studies involving human participants performed by any of the authors.

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Data availability

The data that support the findings in this study are available from the corresponding author, S.S.A.-Y., upon reasonable request.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors, and the publisher.

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