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Exploring the reality of corporate sustainability strategy and sales performance in entrepreneurial SMEs: the mediating effect of innovation and sustainability performance

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Abstract

Incorporating sustainability into a company's strategy is crucial for long-term success. This involves considering environmental, social and economic factors when making strategic decisions. This study investigates how implementing a corporate sustainability strategy (CSS) affects the sales performance of small and medium-sized enterprises (SMEs). It focuses specifically on how innovation and sustainability performance individually and sequentially mediate this relationship. Furthermore, we analyse the moderating effect of ICT strategy on the relationship between CSS and innovation. We collected data from 1,113 surveys on managers of Spanish entrepreneurial SMEs and analysed them using partial least squares structural equation modelling (PLS-SEM). Our findings suggest that both innovation and sustainability performance mediate the positive relationship between CSS and sales performance. We confirm ICT strategy as a moderating variable, enhancing innovation to a greater degree in firms that are more concerned about sustainability.

Keywords Corporate sustainability strategy · Sustainability performance · Innovation · Sales performance · Entrepreneurial SMEs

Introduction

In the past, companies concerned about sustainability set sustainability goals independently of their business strategies. However, recent developments, such as the growing urgency of climate change or progress in improving working conditions, have required a shift in the business approach. Recent years have seen the emergence of new initiatives, such as the European Climate Act (2021), which defines the objec-

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tive of climate neutrality in the EU by 2050 and the reduction of net greenhouse gas emissions, the Paris Agreement on Climate Change (2015), the Sustainable Development Goals (SDGs) (2024) and the Resolution on Covid-19 response (International Labour Conference, 2021) as a Global Call to Action for inclusive, sustainable and resilient recovery, raising awareness of sustainability in society. Organisations are no strangers to this new reality increasingly demanded by stakeholders, and so integrate environmental and social concepts into their strategy and actively contribute to transforming the world's sustainability (Friede, 2019), creating a framework to achieve long-term success (United Nations, 2024). European public administrations' interest in corporate sustainability has been growing in recent years, an example being the adoption of the Corporate Sustainability Reporting Directive (CSRD) by the United Nations Global Compact (2023).

The origin of corporate sustainability lies in the concept of sustainable development (Engert & Baumgartner, 2016), which is an evolving concept dependent on environmental changes (Lloret, 2016). Today, companies undeniably play a key role in sustainable development (Bansal, 2005; Dahlsrud, 2008; Eweje, 2011). Sustainability has become a corporate concern and its presence in both research and practice has increased over the last decade (Jan et al., 2023a).

Sustainable development is not only a benefit to society, but the concept itself has become a source of success, innovation and profitability for companies, and therefore stands out for its internal benefits (Baumgartner, 2014). However, it is worth noting that it is not an immediate process of delivering business performance, but involves constant work (Wasieleski et al., 2021). To manage the complexity of sustainable development, companies have at their disposal various approaches, instruments and tools to support business practice in corporate sustainability management, while some authors continue to underline the lack of a more holistic view of corporate sustainability management (Baumgartner, 2014).

The new challenges that sustainable development poses for companies, such as the circular economy, the responsible use of artificial intelligence, the sustainable value chain and adaptation to climate change (Forética, 2024; The Global Compact, 2004), are leading to a shift in the business paradigm, with a strategy of purely economic performance being abandoned in favour of a more balanced set of social and environmental values (Linnenluecke & Griffiths, 2010).

Consequently, when companies consider sustainability as a corporate strategy, concern for environmental and social issues becomes a top priority (Bansal, 2002; Zollo et al., 2013). However, advancing corporate sustainability (CS) management means that companies not only focus on environmental compliance (Aragón-Correa & Rubio-López, 2007, Bhupendra & Sangle, 2015, Phan & Baird, 2015), but also adopt more proactive approaches that comprehensively address socio-environmental challenges, in both the present and the future, as a means to create sustainable value (Hart & Milstein, 2003). The development of corporate sustainability strategies, understood as the integration of environmental and social needs into an organisation's vision and purpose (Saunila et al., 2019), is no longer a controversial issue for corporate managers (Epstein & Roy, 2001). However, difficulties in effectively implementing such strategies continue to pose problems, namely, how to translate sustainability principles from long-term goals to short-term operational consider-

ations (Roche & Baumgartner, 2024) in an environment characterised by complexity and multiple interdependencies (Engert & Baumgartner, 2016).

Therefore, the proper integration of CS into strategic management is necessary for companies to move towards an increasingly sustainable model (Engert et al., 2016). This affects business decisions at the corporate level, in line with the SDGs and the commitment to more sustainable actions, such as reducing carbon emissions, circular economy and recycling, employee well-being, commitment to local communities and innovation towards sustainable products (Ahmad et al., 2024), with actions being evaluated through ESG criteria (The Global Compact, 2004). Authors such as Manninen and Huiskonen (2022) point out that the problem arises when companies, despite recognising the significance of sustainability, separate their business sustainability strategies from the corporate strategy, thus failing to combine business success and the advancement of sustainable development.

In this respect, although the business case approach has sparked widespread interest in sustainability among companies, there are still companies yet to review their unsustainable practices or address the environmental challenges, such as climate change, that threaten the planet (Busch et al., 2024). Consequently, the process of business transformation towards corporate sustainability requires repositioning strategies and developing new innovative capabilities to address stakeholder needs and make products or provide services in line with sustainable principles (Hart & Dowell, 2011; Melville, 2010). This in turn serves to build and maintain stakeholder trust through transparency and authenticity in their sustainability efforts, a concept known as green trusting. This involves avoiding greenwashing practices (Santos et al., 2024), which are motivated by exaggerated or misleading external communications about their environmental actions (Kim et al., 2017), by recognising that their corporate image, reputation and legitimacy are on the line in the eyes of these stakeholders, who are increasingly demanding sustainable products (Braga et al., 2019). For example, according to the NielsenIQ report (2024), 70% of consumers are willing to buy products that are resource-efficient or energy-sustainable.

Despite progress, research on the importance of adopting a sustainable strategy is limited (Hristov et al., 2022) and there are even fewer studies on strategic implementation (Roche & Baumgartner, 2024), due to the very evolution of sustainable development and multidimensional interactions (Nguyen & Kanbach, 2024). Moreover, most of the scant research on sustainability strategies is qualitative and conceptual (Arjaliès & Mundy, 2013; Kerr et al., 2015). In particular, empirical work on corporate environmental aspects is very limited, with a lack of studies exploring the sustainability business model in SMEs (Saunila et al., 2019), which represents a solid research opportunity (Jan et al., 2023b; Epstein & Wisner, 2005; Perego & Hartmann, 2009). Therefore, the first issue addressed in the present study is to increase the knowledge of corporate sustainability strategy as applied to SMEs, companies that are of key importance in all economies (Rubio-Andrés et al., 2024a).

A key concern for managers today is understanding how integrating sustainability principles into corporate strategies affects business performance. This concern reflects the growing importance of sustainability within the corporate sphere, where it is perceived not only as a social responsibility or a response to stakeholder pressure, but as a strategic factor that can directly influence the competitiveness and economic

performance of organisations (Qazi & al-Mhdawi, 2024). According to the Sustainable Development Report (Sachs et al., 2024), integrating sustainable development into business not only brings benefits in terms of social and personal well-being, but also direct economic benefits and long-term competitive advantages in terms of financial and market performance (Roche & Baumgartner, 2024).

However, the results of empirical studies on the relationship between CSS and sales performance remain inconclusive and often contradictory (Grewatsch & Kleindienst, 2017; Margolis & Walsh, 2003; Orlitzky et al., 2003; Zhao & Murrell, 2016). Some applied studies suggest a positive relationship (Flammer, 2015), while others suggest it is neutral (McWilliams & Siegel, 2000, 2001), curvilinear (Barnett & Salomon, 2012; Lankoski, 2008), or even negative (Wright & Ferris, 1997). Therefore, given the ambiguous empirical findings, the second question addressed in this study is to analyse the relationship between firms' sustainability strategies and performance. This adds to the recent literature calling for more quantitative research on whether CSS actually improves firms' economic performance (Orlitzky et al., 2003).

Previous studies are partly inconclusive due to not considering how other variables influence them (Al-Shaikh & Hanaysha, 2023) and the lack of focus on moderating conditions and mediating mechanisms in the relationship between CSS and performance (Park, 2023). Moreover, there is surprisingly little research on the role of corporate strategy and internal contingent factors in linking sustainable corporate strategy to economic performance (Maletič et al., 2018) and how they affect the firm's future sales (Lisi, 2015). Previous research points to the need for more studies on the impact of sustainability performance and firm performance, incorporating new mediating and moderating variables that do not measure only financial performance (Goyal et al., 2013). Our study addresses this issue and establishes a relationship model that links corporate sustainability strategy as an independent variable with sales performance as a final variable, mediated by innovation and sustainable performance and moderated by ICT strategy.

Accordingly, our paper aims to fill this research gap by attempting to answer the following research questions:

RQ1 What is the impact of corporate sustainability strategy in SMEs and how does it influence sales performance?

RQ2 What is the role of innovation, ICT strategy and sustainable performance in the relationship between CSS and sales performance?

Our findings highlight the need for SMEs to integrate sustainability into their corporate strategy and contribute to theoretical advances in corporate sustainability strategy by contextualising several key theories. The first is the triple bottom line theory (Elkington & Rowlands, 1999), which shows that SMEs can achieve a balance between economic, social and environmental performance by integrating sustainability. We also provide empirical evidence relevant to resource and capability theory (Barney, 1991) by positioning sustainable practices as valuable, rare, inimitable and essential strategic resources for sustainable competitive advantage, even under resource constraints. The findings validate incremental innovation theory (Bessant & Tidd, 2007) by demonstrating that SMEs can implement incremental and effective sustainable

improvements by aligning with the practical capabilities of these firms. Finally, the theory of shared value (Porter & Kramer, 2011) is also considered, integrating sustainability into SMEs and achieving benefits for the firm and society, highlighting their ability to generate positive local impact.

Based on a survey of 1,113 CEOs of small and medium-sized Spanish companies in the main sectors (industry, construction, commerce and services), this paper aims to fill these gaps and address the lack of empirical studies on how the implementation of corporate sustainability strategies in entrepreneurial SMEs improves sales performance and the variables mediating the relationship. This would help entrepreneurial SMEs to strike a balance between meeting environmental and social needs and achieving good business performance. In a novel way, our study incorporates the mediating variables, innovation and sustainability performance, and the moderating variable, ICT strategy, creating a number of interesting relationships within an original model.

Following this introduction, the rest of the article is organised as follows. Section 2 reviews the literature and develops the hypotheses. Section 3 explains the method, sample, measurement of variables and statistical analysis. Section 4 presents the empirical results. Finally, Sect. 5 discusses the results and explains the theoretical and practical conclusions aimed at SME managers, concluding with limitations and future lines of research.

Theoretical background

General concepts

Concern for social and environmental well-being has become essential for companies that have incorporated sustainable development into their strategy, going beyond the exclusive pursuit of economic value (Porter & Kramer, 2011; Bansal, 2002).

Corporate sustainability is defined as a company's approach to achieving business competitiveness through sustainable strategies, thus incorporating the social, environmental and economic needs of both the company and society (Epstein & Roy, 2001; Engert & Baumgartner, 2016). This enables companies in general, and entrepreneurial SMEs in particular, to address global sustainability challenges and move towards sustainable development (Meuer et al., 2020). However, the process is not straightforward and unexpected challenges may arise during implementation (Hart & Dowell, 2011).

Corporate sustainability is supported by several theories, such as the resource dependence, stakeholder, institutional and legitimacy theories (Lee et al., 2017), which find differences between SMEs and large firms. These theories suggest that investing in sustainability yields economic benefits due to better stakeholder relations and improved public image (Küçükbay & Sürücü, 2019). Resource dependence theory emphasises that firms adopt sustainable strategies to manage uncertainty and secure access to critical resources in their environment; in entrepreneurial SMEs, this dependence is higher due to their limited resources, leading them to pursue strategic alliances more actively than large firms (Pfeffer & Salancik, 2015). Accord-

ing to stakeholder theory, SMEs tend to have more direct and personal relationships with stakeholders such as employees and local communities, which influences their approach to sustainability, while large firms adopt more standardised strategies to meet the demands of a larger number of stakeholders (Freeman, 2010; Clarkson, 1995). Institutional theory suggests that firms must take into account stakeholder interests and government pressures that seek to influence business practices (Gao et al., 2019; Yawar & Kauppi, 2018). However, large firms face greater regulatory pressures due to their higher visibility, while entrepreneurial SMEs tend to be more responsive to specific local and cultural pressures (DiMaggio & Powell, 2000; Scott, 1995; Starik & Kanashiro, 2013).In addition to taking measures to ensure their continuity in the market, they are obliged to devise appropriate strategies to respond to institutional and environmental challenges and comply with various rules and regulations to maintain their existence and competitiveness (Al-Shaikh & Hanaysha, 2023). Sustainability is not only a question of compliance with existing regulations, but also of proactively incorporating sustainability initiatives into strategic decisions to address issues related to sustainable development (De Massi et al., 2021).

Thus, firms are required to devise appropriate strategies to respond to institutional and environmental challenges and comply with various rules and regulations to maintain their existence and competitiveness (Al-Shaikh & Hanaysha, 2023). Finally, legitimacy theory suggests that large firms adopt sustainable practices to maintain their social licence in a global environment, while entrepreneurial SMEs do so mainly to strengthen their legitimacy in local markets (Suchman, 1995).

These theories suggest that investing in sustainability generates economic benefits due to improved stakeholder relations and public image (Küçükbay & Sürücü, 2019). Therefore, sustainability is not only a matter of complying with existing regulations, but also of proactively incorporating sustainability initiatives into strategic decisions to address sustainable development issues (De Massi et al., 2021).

One of the difficulties of sustainable strategic management lies in the company having to achieve all three dimensions simultaneously. For this reason, authors such as Baumgartner and Rauter (2017) describe corporate sustainability as paradoxical in nature (Luo et al., 2020). Given the visionary and holistic approach of sustainable strategy, sustainability is embedded in all business activities (Baumgartner, 2010), such that strategic decisions to launch new products or expand into new markets are based on sustainability principles as part of the corporate dimension of the firm.

Current research is not comprehensive and focuses on sustainability and SME growth. Very few integrated studies have examined the role of innovation and ICT strategies in generating sales profitability from the implementation of a corporate sustainability strategy in SMEs.

Corporate sustainability is not just a response to regulation, but also a strategic framework that balances economic, social and environmental objectives (Bansal, 2005; Schaltegger et al., 2016). By adopting sustainable strategies, companies integrate initiatives that not only reduce risks, but also promote sustainable development and create long-term value (De Massi et al., 2021). Innovation plays a crucial role in this process, as it translates sustainability strategies into practical and effective solutions. By applying new ideas and methods, companies not only improve their processes, but also find creative ways to address the tensions inherent in sustainability

(Van der Byl & Slawinski, 2015). This innovative capacity enables them to develop more efficient products, optimise resources and better meet consumer demands, thereby strengthening their market position (Baumgartner, 2014).

As a mediator, sustainable performance acts as an indicator of the social, environmental and economic impact of corporate strategy (Takala & Pallab, 2000). Companies that implement sustainable practices often see tangible benefits, such as reduced operating costs, improved brand perception and increased attractiveness to investors. However, the outcomes can vary depending on the context and the metrics used (Wijethilake, 2017).

Sales performance is the ultimate measure of the commercial success of a sustainable strategy. Companies that align their values with consumers' sustainability expectations succeed not only in increasing market share, but also in building customer loyalty (Engert & Baumgartner, 2016). This improved performance reflects the positive impact of sustainable and innovative strategies on business success, consolidating sustainability as a key factor in long-term competitiveness (Ortiz de Mandojana & Bansal, 2016).

Corporate sustainability strategy and sales performance

Social and environmental well-being concerns have become essential for companies that have incorporated sustainable development into their strategy, going beyond the exclusive pursuit of economic value (Porter & Kramer, 2011; Bansal, 2002). Corporate sustainability simultaneously pursues economic, social, and environmental objectives (Bansal, 2005; Schaltegger et al., 2016) to achieve social and environmental well-being (Schwartz & Carroll, 2008).

Companies should integrate sustainability to make strategically relevant contributions to the sustainable development of society through their business activities (Broman et al., 2017; Schaltegger et al., 2013).

One difficulty of sustainable strategic management is that the company must achieve all three dimensions (social, environmental and economic) simultaneously (Epstein & Roy, 2001; Engert & Baumgartner, 2016). For this reason, authors such as Baumgartner and Rauter (2017) describe corporate sustainability as paradoxical in nature (Luo et al., 2020). Considering the visionary and holistic approach of sustainable strategy, sustainability would be incorporated into all business activities (Baumgartner, 2010), such that, being part of the corporate dimension of the company, strategic decisions to launch new products or expand into new markets would be based on the principles of sustainability.

While companies strive to achieve profits by implementing sustainability actions as the core of corporate strategy (Chabowski et al., 2011; Barin et al., 2006; Goyal et al., 2013), the sustainability and performance literature has shown concern about this relationship. An important stream of research examines whether sustainable companies outperform or underperform those that have not incorporated sustainability criteria into their strategy. Most studies focus on the relationship between sustainable corporate strategy and business performance (Lourenço et al., 2012). However, various studies have found a positive relationship (Doh et al., 2015; Lo & Sheu, 2007; Consolandi et al., 2009; Robinson et al., 2011; Wagner, 2010), despite its being weak

in some cases (Margolis & Walsh, 2003; Orlitzky et al., 2003). (López et al., 2007) or no relationship at all (Curran & Moran, 2007; García-Castro et al., 2010; Surroca et al., 2010). One of the reasons for the variety of empirical findings on the relationship is the measurement of firm performance (Nikolaou et al., 2019). In our study, we use the variable of sales performance, referring to future sales expectations (Barling & Beattie, 1983; Djakasaputra et al., 2021), as a measure of long-term market performance, as it reflects the sales potential of companies (Hultman et al., 2009; Lee & Park, 2008). Therefore, due to the ambiguity evidenced in previous studies and the need to incorporate new variables that measure performance, we propose the following hypothesis:

Hypothesis 1. A positive relationship exists between corporate sustainability performance and sales performance in entrepreneurial SMEs.

Sustainable strategy and sales performance: mediating role of innovation

Given its importance, we incorporate innovation to develop a complete model that considers the mediating variables involved in the relationship between CSS and sales performance. Innovation is the application of new ideas or methods that add value to a company's products, processes and organisational and marketing systems (Weerawardena, 2003; Gutiérrez-Broncano et al., 2024). From a strategic perspective, innovation poses a challenge for entrepreneurial SMEs (Keizer et al., 2002) as it fosters the competitive advantage of SMEs (Jafari-Sadeghi et al., 2023) and creates value propositions that span environmental, social and economic aspects (Schaltegger & Wagner, 2011). This innovation can lead to value co-creation and impact complementarity and scalability (Gregori & Holzmann, 2020), thus playing diverse roles in business operations and developing new business models (Steininger, 2019). To establish the mediating role of innovation between sustainable strategy and sales performance, we first establish the mediation hypothesis, which requires a positive relationship between CSS and innovation.

Growing environmental uncertainty requires entrepreneurial SMEs to incorporate sustainability into their corporate strategy with the intention of consuming fewer material and energy resources (Huber 2000; Oertwig et al., 2017) and achieving efficiency and effectiveness in their business processes (Baumgartner, 2014). This implies focusing on achieving business innovations (Nidumolu et al., 2009; Sharma, 2017; Alt et al., 2015) that generate new products and processes. In this way, business model innovation can be an important lever for change in a company to be considered sustainable and to address emerging challenges in this context.

Authors such as Hahn et al. (2014) highlight the need to innovate in the very definition of CSS. This is due to the incorporation of sustainable principles into corporate strategy, such that simultaneously addressing economic, social and environmental objectives that may generate divergent goal results in tensions (Maon et al., 2019). In this context, acceptance of these difficulties can lead to innovative solutions, generating sustainable outcomes (Tracey et al., 2011; Jarzabkowski et al., 2013; Jay, 2013). Therefore, when entrepreneurial SMEs accept the tensions inherent in sustainability, they achieve innovative solutions and overcome clear contradictions, moving

towards sustainable and beneficial performance (Van der Byl & Slawinski, 2015; Ortiz-de-Mandojana & Bansal, 2016). Therefore, we find a relationship between CSS and entrepreneurial innovation.

Second, there must be a positive link between innovation and sales performance. In today's business environments, innovation emerges as the determining factor for survival, profitability, and sales growth (Brand et al., 2021), leading to competitive advantage (Roberts & Amit, 2003). The literature has extensively studied the impact of innovation on performance (Jaruzelski et al., 2011; Lin & Chen, 2007), finding a positive and significant influence on business growth (Hoang & Ngoc, 2019) and SME performance (Acquaah & Agyapong, 2015; Aksoy, 2017; Saunila, 2017). If innovation does not lead to a higher level of sales, it could indicate that an SME's limited resources have been exhausted and that they are uncompetitive (Farida & Setiawan, 2022). O'Cass and Weerawardena (2009) argued that future sales expectations are related to innovation intensity. Increased innovativeness enables firms to continuously create advances in their offerings (Kim & Mauborgne, 1997) and improve their sales. A recent study of 16,365 SMEs in the European Union found that innovation had a positive impact on the level of SMEs' turnover growth in the period 2016–2020 (Avelar et al., 2024). In addition, the endogenous intermediate variables of 'digitalisation' and 'sustainability' have a positive impact on a firm's performance in both cases.

Finally, the above argument provides the basis for proposing the mediating role of innovation between CSS and sales performance. Wagner (2010) highlights the role of innovation in the interaction between sustainability and economic performance. Companies use CSS with the intention of fostering innovation within the company. Authors such as Hull and Rothenberg (2008) claim that the association between CSS and economic performance depends on firms' innovative capacity due to the importance of differentiating their products. Therefore, innovation plays a mediating role between CSS and sales performance.

Considering these premises, we formulate the following hypothesis:

Hypothesis 2. Innovation mediates the relationship between CSS and sales performance in such a way that CSS has a positive indirect effect on sales performance through innovation.

Sustainability strategy and sales performance: mediating role of sustainability performance

In the mediation model, we assess the possible mediating role of sustainability performance. Supporting the hypothesis involves first arguing for a positive relationship between CSS and sustainability performance. To improve internal management and assess the implementation of sustainable corporate strategy, organisations need to measure and effectively and efficiently manage their sustainability performance (Neely et al., 2002; Shepherd & Günter, 2006). Sustainability performance focuses on the environmental, social and economic performance of sustainable development (Takala & Pallab, 2000). A growing line of research seeks to measure the success of corporate sustainability strategy in terms of performance (Goyal et al., 2013).

There are mixed findings on the link between sustainability strategy and sustainable performance. Some studies highlight positive impacts, while others point to negative or neutral ones (Wijethilake, 2017), or are inconclusive (e.g. González-Benito & González-Benito, 2005, Thornton et al., 2003, Wagner et al., 2002, Wagner & Schaltegger, 2004).

Second, we assess the direct relationship between sustainability performance and sales performance. A key reason for companies to position themselves in favour of sustainable strategies is the improvement in economic performance achieved simultaneously with the reduction of negative social and environmental effects produced by business activity (Baumgartner & Rauter, 2017), which has a positive impact on sales. Despite progress in studies linking corporate sustainability performance with firm performance, more research is still needed (Goyal et al., 2013) in different settings to arrive at more reliable and conclusive results. The limited previous literature finds evidence that both dimensions move in the same direction, i.e., if corporate sustainability performance increases or declines, firm performance moves similarly (Goyal et al., 2013).

However, a further problem is that the existing literature linking corporate sustainability performance and firm performance focuses primarily on the firm's financial performance. In this study, we advance in this direction and propose sales performance as a variable.

Finally, economic performance is related to the sustainable performance achieved by companies when incorporating sustainability into their strategy (Wijethilake, 2017). For example, Banerjee (2001) notes that sustainability performance, such as waste reduction and cost savings, or quality improvements in products and processes resulting from greater efficiency are therefore a consequence of a sustainable strategy. These sustainable results lead to better performance.

Therefore, we believe that sustainability performance could influence the relationship between corporate sustainability strategy and sales performance because of their leverage on this relationship. Hence, we posit the following:

Hypothesis 3. Sustainability performance mediates the relationship between CSS and sales performance in such a way that CSS has a positive indirect effect on sales performance through sustainability performance.

Innovation and sustainability performance as sequential mediators

Corporate sustainability strategies are oriented towards continuous improvement, enabling companies to anticipate future social and environmental demands of the market (Baumgartner & Ebner, 2010). Incorporating sustainability into the business vision of the future, based on sustainable values, means that SMEs can pioneer more sustainable products and processes compared to their competitors (Ortiz de Mandojana & Bansal, 2016), attracting more innovative customers and improving their sustainable performance. The increase in demand means that the company can gain a higher market share and in turn generate higher sales expectations than competitors (Engert & Baumgartner, 2016). Therefore, companies that incorporate sustainability criteria into their corporate strategy, due to the influence of innovation and sustain-

able performance, will achieve higher sales figures, helping them survive in the long term (Nwoba et al., 2021).

If Hypothesis 2 (mediation of innovation) is combined with Hypothesis 3 (mediation of sustainable performance), innovation and sustainable performance will sequentially mediate the positive effect on the relationship between CSS and sales performance. Therefore, we propose the following hypothesis:

Hypothesis 4. Innovation and sustainability performance mediate between CSS and sales performance in entrepreneurial SMEs.

Moderating role of ICT strategy

Integrating information and communication technologies (ICTs) into corporate sustainability strategies is fundamental, as the ICT strategy adopted by a company can significantly influence the implementation of sustainable and innovative practices (Dedrick, 2010). This is because ICTs contribute to operational efficiency by automating processes and optimising resource use (Ghobakhloo et al., 2023). For example, advanced energy monitoring systems can reduce energy consumption and carbon emissions, thereby improving environmental outcomes (Chen et al., 2008). Furthermore, tools such as the Internet of Things (IoT) and big data analytics facilitate the design of more sustainable supply chains by increasing transparency and reducing waste (Kamble et al., 2019). These technologies position ICTs as a key component in aligning business sustainability with innovation.

Various studies highlight that integrating ICTs into corporate sustainability strategies enhances innovation. Nambisan et al. (2017) suggest that companies that adopt ICTs are more likely to develop disruptive innovations that address environmental and social challenges. This is because ICTs facilitate experimentation, design and implementation of new sustainable business models, allowing firms to adapt quickly to regulatory and market changes (Carayannis et al., 2015). In addition, ICTs provide employees with tools that enhance their skills and capabilities for innovation processes (Gajdzik & Wolniak, 2022), a crucial aspect for generating and realising new ideas in a dynamic business environment (Lane et al., 2011; Sawyer & Henriksen, 2024).

In the case of entrepreneurial SMEs, ICTs offer unique opportunities to innovate in sustainable business models, thanks to the flexibility of these organisations in adapting to the changing needs of the market (Meuer et al., 2020). However, entrepreneurial SMEs face significant challenges, such as a lack of resources to adopt advanced technologies, which can limit their ability to implement effective sustainability strategies (Kaufmann & Tödtling, 2002). Technologies such as blockchain and digital platforms can counter these limitations by enabling more transparent and efficient tracking of materials throughout their lifecycle, optimising processes and promoting sustainability (Geissdoerfer et al., 2017). In this way, ICTs not only support business sustainability, but also drive it to higher levels of innovation and effectiveness.

However, the relationship between ICTs and sustainability is complex. On the one hand, ICTs can increase CO2 emissions through greater equipment use, energy consumption and the generation of e-waste, while an appropriate ICT strategy can

reduce these emissions through greater efficiency in its use (Higón et al., 2017). These opposing dynamics create an inverted U-shaped relationship between ICTs and carbon emissions, highlighting the importance of a conscious implementation of these technologies.

Previous research has addressed the relationship between ICTs and innovation (Wu et al., 2006; Reinartz et al., 2011), although works on entrepreneurial SMEs remain limited (Bouwman et al., 2019; Haug et al., 2023; Ardito et al., 2021). For some authors, ICTs are essential for developing innovative business processes (MahbubulHye et al., 2020). Similarly, Javaid et al. (2022) and de Medeiros et al. (2022) show that ICTs enable companies to develop more efficient and less environmentally damaging products and processes. By adopting digital technologies, SMEs can develop unique resources that can improve productivity and efficiency (Saleem et al., 2020). However, this digital transformation also involves acquiring new skills, competencies and knowledge, which can stimulate SMEs to introduce new products and processes, thus giving them a competitive advantage over their rivals (Radicic & Petković, 2023). Therefore, an appropriate ICT strategy can be a differentiating factor in strengthening the relationship between corporate sustainability and innovation, with positive impacts on both the economy and society.

Therefore, we propose the following hypothesis:

Hypothesis 5. ICT strategy moderates the relationship between CSS and innovation, such that CSS has a more positive effect on innovation when ICT strategy intensity increases.

This study builds on previous research to design a model of corporate sustainability (Lloret, 2016). The framework for the empirical analysis includes two models: one examines sustainability strategy and sales performance, and the other examines the role of innovation mediation and sustainable outcomes between sustainability strategy and sales performance, incorporating the moderating effect of ICT (Fig. 1).

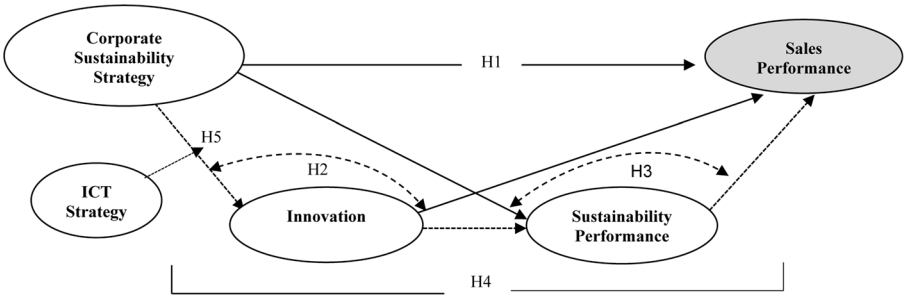

Fig. 1 Hypothesized model

Method

Sample and procedures

To test our hypotheses, we randomly selected entrepreneurial SMEs operating in Spain from the National Statistical Institute (INE) 2023 database. The selection framework used was the Iberian Balance Sheet Analysis System (SABI) database developed by FAEDPYME (2023), an SME foundation. FAEDPYME selects entrepreneurial SMEs from the INE database. The selection criterion is that they are involved in, or have carried out, an entrepreneurial project in the last 5 years.

According to the strategic framework of the SME 2030 policy of the Spanish Ministry of Economy, SMEs play a fundamental role in economic growth and the promotion of competitiveness at the European level. It is no coincidence that more than 99% of companies in the European Union are SMEs, employing 94 million people and generating more than half of the added value of the entire business fabric. Specifically, SMEs make up 99.8% of companies in Spain, representing just over 62% of the gross value added (GVA) and 66% of total business employment. Their significance means that any policy aimed at improving the positioning of the country in the global economic environment must prioritise SMEs. Spain is an important country in the European Union (it is the fourth-largest economy in the European Union in terms of GDP, ICEX, 2023), and given this importance, it is a suitable case for empirical study. Furthermore, according to the latest study of the UN Global Compact in its "Communicating Progress 2023. Renewing the Rules of Business Reporting", more than 68% of SMEs that are part of the UN initiative in Spain have publicly committed to working towards achieving the SDGs. Spanish entrepreneurial SMEs consider that their achievements in terms of customer satisfaction and product quality are more favourable if they orient their strategy towards sustainability. However, profitability, sales velocity and growth remain areas that require improvement in entrepreneurial SMEs. This raises the need to analyse how strategies towards sustainability have positive effects on value generation variables such as innovation and sales performance, which justifies our interest in studying Spanish entrepreneurial SMEs.

Sampling for this study was carried out by stratifying the population according to the interests of the researchers and the information available on the structure of the population. This allows the results to be representative of the general population (Spanish SMEs) according to the different segments by sector and size, improving the accuracy and validity of the results. The selection within each stratum was carried out by simple random sampling using 2000 questionnaires. Incomplete questionnaires were subsequently eliminated. A total of 1,113 completed surveys were retained and used for further analysis (response rate: 29.48%, sampling error: 3.1%, for a 95% confidence level and the least favourable situation for $p=q=0.5$).

In terms of the demographic characteristics of the sample, there is a distinction between size and sector. The largest group of participating companies comes from the service sector (32.35%), followed by industry (28.42%), retail (20.40%), and construction (18.42%). Furthermore, most companies are small, with fewer than 50 employees (59.12%), followed by micro-SMEs with between 6 and 9 employees (30.55%) and medium-sized companies with between 50 and 249 employees

(10.33%). In terms of organisational characteristics, a distinction is made regarding the ownership of the enterprise: 31.27% are non-family SMEs and 68.73% are family SMEs.

Because of the cross-sectional nature of the research design and the use of self-report measures, potential issues related to common method variance and social desirability bias were acknowledged. To mitigate these concerns, the recommended procedural remedies, as outlined by Podsakoff et al. (2003, 2012), were implemented. The results of the marker test, which was conducted in line with the methodology proposed by Khosravi et al. (2020), indicated that common method variance was not a significant issue. Specifically, a marker item, namely, the gender of the company CEO, exhibited no discernible association with any of the targeted constructs. The mean correlation between the marker item and each of the study variables was calculated to be 0.04, falling below the conventional threshold of 0.05, as suggested by Rönkkö and Ylitalo (2011). Furthermore, when examining a model in which the marker item was linked to the study variables, there were no substantive changes in the parameter estimates. Consequently, it was determined that common method variance was unlikely to be a confounding factor in our dataset.

Measures

Before testing our hypotheses, we first need to know the type of measure that a particular construct requires (Henseler et al., 2015). There are two types of measures: reflective and formative (Fornell, 1982). Reflective measures are used when the indicators of the construct are determined by the construct and are thus highly correlated (Chin, 1998; Götz et al., 2010; Haenlein & Kaplan, 2004). Meanwhile, formative measures are used for constructs that are caused or preceded by indicators or items that should not necessarily be correlated with each other (Chin, 1998; Götz et al., 2010; Haenlein & Kaplan, 2004). In our case, all the measures used are reflective in nature, that is, the items or indicators of the variables are reflective of those same variables.

We used scales previously validated in other studies, although, on some occasions, these scales were reduced or extended with new items and adapted for the present investigation. Following the relevant literature, the study questionnaire was designed by selecting variables and the links between them. In the first section, corporate sustainability strategy, sales, and sustainability performance were measured. The second section of the survey is related to measuring innovation in the dimensions of product, process and management of the firm. The third section refers to the moderating variable of the ICT strategy. Finally, the fourth section is based on a compilation of descriptive information about SMEs, such as company size (number of employees), sector (industry, commerce, construction and services) and type of company (family or non-family).

Sales performance was measured through two items validated in the study by Barling and Beattie (1983) and the work by Djakasaputra et al. (2021), which referred to sales expectations for the next few years. Responses for each item were evaluated using a 3-point Likert scale (1 = decrease, 2 = same, 3 = increase). Numerous studies have used future sales expectations to measure sales performance, highlighting

certain advantages over the traditional measurement by historical results (Barling & Beattie, 1983; Jaramillo & Mulki, 2008). Of the advantages, it is worth highlighting that measuring sales performance through expectations allows for the evaluation not only of current results, but also of the company's ability to build sustainable relationships with customers and to anticipate future trends. This option allows for market analysis and understanding of customer needs, which helps predict trends and anticipate changes in the competitive environment, elements that may be more closely aligned with the reality of sales performance (Churchill et al., 1997). Thus, while current sales reflect past performance, expectations serve as an indicator of future health and growth potential, allowing for a more balanced assessment of sales performance (Behrman & Perreault, 1982).

Innovation. The innovation variable was measured through two items for the product/service and process dimensions and three items for the management dimension (Weerawardena, 2003). Participants were asked to rate whether the company had made changes or improvements to existing products/services, production processes or organisation/management in the last two years. The indicators used in this construct have been validated by Burdon et al. (2015), Cegarra-Navarro et al. (2016), Harel et al. (2021), Lichtenthaler (2017), and Oke et al. (2007). The innovation variable was developed through a second-order construct of each of its dimensions (product/service, process and management). Responses for each of these items were evaluated using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). This way of assessing innovation as a second-order construct is common in the literature (Damanpour & Aravind, 2012; Jiménez-Jiménez & Sanz-Valle, 2011; Wang & Ahmed, 2004) and allows innovation to be understood as a construct that integrates multiple dimensions.

Corporate sustainability strategy was assessed through five items validated in the works byAdomako et al. (2021) and Wijethilake and Upadhaya (2020). This measured whether the company had used environmental criteria in the past year to select suppliers, design production/service processes and manage water, waste and energy. Items were scored on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). This method of assessing corporate sustainability strategy is commonly used in research (Micheli et al., 2020; Seuring & Müller, 2008; Youn et al., 2013).

Sustainability performance was measured through 4 items validated by Goyal et al. (2013) and Zimek and Baumgartner (2017), assessing the impact of sustainability in terms of generating competitive advantage, improving the company's image and reputation, profitability and customer satisfaction, aspects that previous studies have also used to assess sustainability performance (Anderson et al., 1997; Flores-Hernández et al., 2020). The items were evaluated using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

ICT strategy was measured through a simple dichotomous question asking whether the company has an internal manager for the implementation of a digitalisation strategy. Both dichotomous measures and Likert scales have been used in the literature to assess ICT strategy (Consoli, 2012; Rahman, 2007). The choice between the two depends on the purpose of the study. If the aim is to make a quick and clear assessment of the implementation of an ICT strategy, a dichotomous measure may be more appropriate. However, if the intention is to explore perceptions, levels of satisfaction

or areas for improvement, a Likert scale would be more appropriate (Rahman, 2007). In our case, we chose a dichotomous variable because our aim was to assess whether a company is engaged in ICT strategy or not, thereby reducing the ambiguity that a Likert scale may generate and accurately reflecting the state of affairs, while forgoing the more nuanced assessment that could be obtained through the use of a Likert scale. In the ICT strategy literature, several studies have used this same approach (Rahman, 2007), thus producing more categorical results, which may be beneficial in our study.

Control variables. We introduced three control variables: (1) the size of the company was measured by the number of employees, allowing us to distinguish between micro, small and medium-sized companies; (2) the sector in which the SME operates was accounted for, locating it in industry, retail, construction, or services; and (3) the type of company was considered using a dichotomous variable showing whether the SME is family or non-family.

A three-step methodology was employed to assess the need to incorporate control variables based on empirical findings. Initially, all the control variables were incorporated into the model. Subsequently, the analysis was conducted using only those control variables that exhibited significant correlations with the dependent variable. Finally, the analysis was repeated without including any control variables. The outcomes indicated no significant differences between the three models. Consequently, in accordance with the recommendation by Bernerth and Aguinis (2016), none of the control variables was included in the final model.

Statistical analysis

To test the hypotheses, we used structural equation modelling through partial least squares (PLS). PLS is a variance-based structural equation modelling method whose main objective is to predict the latent and manifest dependent variables of the model (Henseler et al., 2015; Roldán & Sánchez-Franco, 2012; Molina-López et al., 2021), using an iterative algorithm consisting of a series of ordinary least squares (OLS). This tool is mainly oriented to predictive causal analysis in situations of high complexity but with little theoretical knowledge, and is appropriate for theory development (Wold, 1979), as is case of the objective of this research. This form of modelling is known as flexible modelling (Wold, 1980) and is notably more flexible than other structural equation modelling techniques based on the covariance method, making no assumptions regarding the levels of measurement (nominal, ordinal, interval or ratio), data distributions and sample size. This makes PLS a powerful method of analysis (Chin et al., 2003) and an attractive one for research, with its mathematical and statistical procedures remaining rigorous and robust (Wold, 1979). Moreover, being a technique that employs structural equation models, its use is appropriate for testing mediation and moderation hypotheses (MacKinnon et al., 2012). Further advantages over other structural equation modelling techniques include the following: (1) absence of indeterminacy problems (Fornell & Bookstein, 1982); (2) absence of model identification problems (Chin & Newsted, 1999); (3) possibility of working with models of great complexity (Cepeda, 2006); (4) robustness against multicollinearity, model misspecification, and skewed distribution of variables (Cassel et al., 1999).

For the PLS model analysis, we used Smart PLS 4.0.9.9 (Ringle et al., 2022). The analysis and interpretation of the model was carried out in two phases: (1) evaluation of the validity and reliability of the measurement model, and (2) evaluation of the structural model. This ensures that the measures of the constructs are valid and reliable before drawing conclusions (Barclay et al., 1995).

A power analysis developed using G*Power 3 (Faul et al., 2007) for the regression with the highest number of independent variables in our model (i.e., 4) yielded power ranging from 97.7 to 99.99%. Therefore, the study sample is sufficient to test the predicted relationships because it allows for the detection of medium effect sizes (Cohen, 1988) without incurring Type II errors. Furthermore, it ensures that the R2 and significant path coefficients obtained from our regression analyses differ from zero. Finally, our PLS analysis used 5,000 subsamples to generate standard errors and bootstrap t statistics with n– 1 degrees of freedom to assess the statistical significance of the path coefficients (Hair et al., 2022).

Results

Measurement model assessment

Table 1 provides evidence of individual reliability, construct reliability and convergent and discriminant validity. Table 2 further shows the correlations between the study variables.

Our findings (see Table 1) reveal that the individual items of all variables showed high loadings, higher than the required threshold of 0.707, indicating good individual reliability (Hair et al., 2022). Cronbach's alpha and composite reliability (ρc) also showed good reliability for our reflective constructs (Table 1), greater than 0.80, a value required for advanced research (Hair et al., 2022). Additionally, discriminant validity was supported, with AVE exceeding the square correlations between the composites in all cases (Hair et al., 2022, Table 2). Moreover, the HTMT indices were below 0.85, as recommended (Henseler et al., 2015; Hair et al., 2018, see Table 2). Finally, the VIF values for the complete model range between 1.503 and 2.603, far below the 5.0 cut-off (Hair et al., 2022, see Table 1), and so the path coefficients present no multicollinearity problems.

Structural model assessment

Table 3 and Fig. 2 present findings related to our hypotheses. The effect (c) of corporate sustainability strategy on sales performance is positive ($c = 0.13$, $p < 0.01$; Fig. 2A), supporting H1. However, when the mediators (i.e. innovation performance and sustainability performance) were added, the direct effect (c') was reduced to non-significant (c' = 0.05, not significant; Fig. 2A vs. Figure 2B). This suggests a likely indirect effect (through innovation and sustainability performance), as previously predicted. Testing hypotheses H2, H3 and H4 helped confirm the existence of this indirect effect.

Table 1 Item loadings, variance inflation factor, construct reliability and convergent validity

Construct	Item/First order construct	Loading	VIF	Construct reliability			AVE
				Cronbach's Alpha	Dillon-Goldstein (ρc)	Dijkstra-Henseler (ρA)	
Corporate Sustainability Strategy (CSS)				0.863	0.881	0.898	0.599
	CSS1	0.764	1.889				
	CSS2	0.713	2.630				
	CSS3	0.854	2.357				
	CSS4	0.833	1.761				
	CSS5	0.839	1.503				
Innovation (IN)				0.868	0.818	0.869	0.559
	IN Product	0.779	1.671				
	IN Process	0.777	1.644				
	IN Management	0.753	1.969				
Sustainability Performance(SuP)				0.841	0.878	0.865	0.511
	SuP1	0.732	1.795				
	SuP2	0.813	1.665				
	SuP3	0.805	2.310				
	SuP4	0.769	2.424				
Sales Performance(SaP)				0.948	0.975	0.949	0.951
	SaP1P1	0.975	1.787				
	SaP2	0.976	1.617				
ICT Strategy				1	1	1	1
	ICT1	1	1				

Notes: VIF = variance inflation factor. AVE = Average Variance Extracted

Table 2 Descriptive statistics, correlation matrix and discriminant validity

Constructs	Mean	SD	1	2	3	4	5
1. Corporate Sustainability Strategy	2.64	1.07	**0.77**	*0.47 [0.28, 0.66]*	*0.28 [0.16, 0.40]*	*0.13 [0.07, 0.19]*	*0.10 [0.03, 0.17]*
2. Innovation	2.61	0.96	0.36**	**0.75**	*0.47 [0.20,0.74]*	*0.17 [0.09, 0.25]*	*0.20 [0.12, 0.28]*
3. Sustainability Performance	2.12	1.41	0.25**	0.42**	**0.71**	*0.16 [0.11,0.23]*	*0.13 [0.07, 0.18]*
4. Sales Performance	3.72	0.98	0.11*	0.15*	0.14*	**0.98**	*0.12 [0.03, 0.21]*
5. ICT Strategy	0.41	0.47	0.09	0.18*	0.11*	0.11*	**1**

Notes: *$p < 0.05$ **$p < 0.01$ or better (two-tailed test). SD=standard deviation. Bold values on the diagonal are the square roots of the AVE. Off-diagonal elements below the diagonal are correlations between the constructs. Off-diagonal elements in italics and above the diagonal are the HTMTs and their 95% confidence intervals (CI). As the HTMTs are below 0.85 and CIs do not include 1, there is discriminant validity (Hair et al., 2022)

Table 3 Corporate sustainability strategy and sales performance. Total, direct and indirect effects

	Coefficient	
Total effect (c) →	0.13**	
Direct effect (c') →	0.05^{ns}	
Indirect effects ↓	Point Estimate	95% bias corrected confidence intervalsconfidence interval
H2: CSS----- IN ----- SaP (a_1b_2)	0.063	(0.02: 0.12) sig
H3: CSS------SuP----- SaP (a_2b_3)	0.032	(0.01: 0.06) sig
H4: CSS-----IN-----SuP-----SaP ($a_1b_1b_3$)	0.012	(0.01: 0.04) sig

Notes. ** $p < 0.01$ (one-tailed test); ns: not significant; sig: significant CSS = Corporate Sustainability Strategy; IN = Innovation; SuP = Sustainability Performance; SaP = Sales Performance

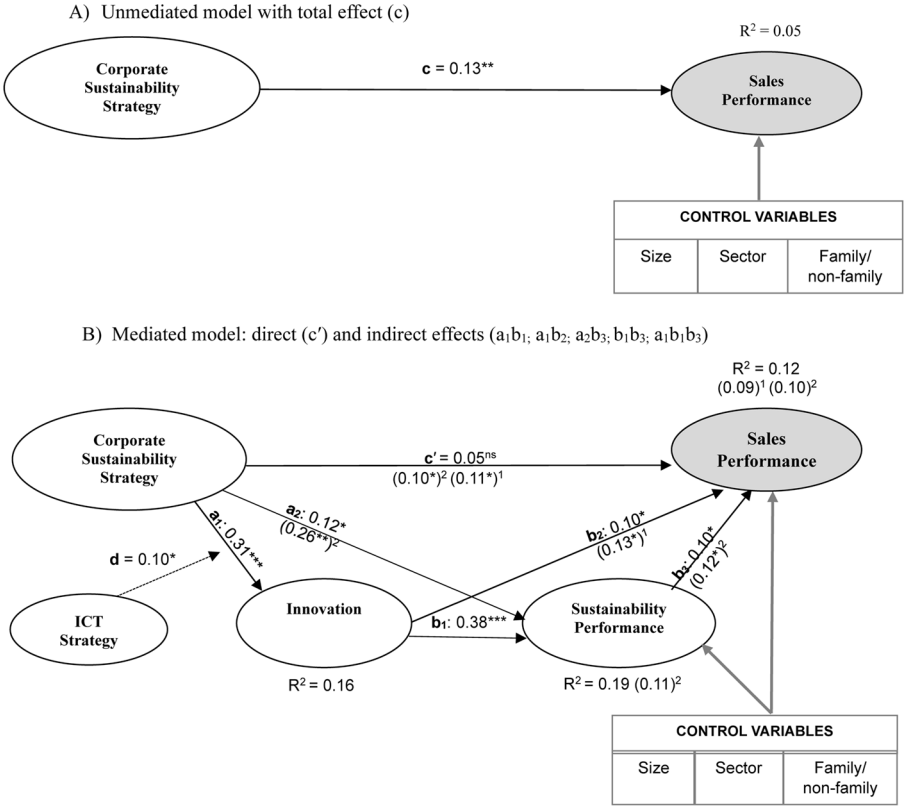

Fig. 2 Structural model Analysis of mediation hypotheses. Source: Elaborated by the authors. Notes: [1]This is thebeta coefficient/R^2 value when Sustainability Performance is excluded. H2= $a_1b_2 = 0.034$*. [2]This is the beta coefficient/R^2 value when Innovation in SMEs is excluded. H3 = $a_2b_3 = 0.012$*. *** $p < 0.001$;. ** $p < 0.01$, * $p < 0.05$, ns: not significant. Effect sizes of $R^2 \geq .01, \geq .09$, and $\geq .25$ are small, medium, and large, respectively (Cohen, 1988)

Thus, in support of H2, our results revealed a significant indirect effect of corporate sustainability strategy on sales performance through innovation, in a model where innovation is the sole mediator (a1b2 = 0.034, $p < 0.05$; Fig. 2B). Furthermore, our results showed that, in a model where sustainability performance is the exclusive mediator, the indirect effect is significant (a2b3 = 0.012, $p < 0.05$; Fig. 2B). Therefore, sustainability performance mediates between corporate sustainability strategy and sales performance, supporting H3. Finally, when both mediators are included, the indirect effect through innovation and serial sustainability performance is also significant (a1b1b3 = 0.012, $p < 0.05$; Table 3), thus supporting H4.

Overall, the relationship between corporate sustainability strategy and sales performance is sequentially mediated by innovation and sustainability performance. This mediation is total as the direct effect of corporate sustainability strategy remains non-significant (c' = 0.05, not significant; Fig. 2B). Thus, our work reveals an alternative way to account for sales performance. Moreover, the variance explained in sales performance is higher in the multiple mediated model than in the unmediated model (Δ at R2 = 0.07; Fig. 2B).

Finally, the results also provide support for H5 as ICT strategy had a positive moderating effect on the relationship between corporate sustainability strategy and innovation (d = 0.10; $p < 0.05$; Fig. 2B). Thus, the interaction between corporate sustainability strategy and ICT strategy exerted a positive and significant effect on innovation.

Discussion

SMEs are advised to evaluate how CSS impacts economic and sustainability performance (Küçükbay & Sürücü, 2019). First, we consider there should be a positive relationship between CSS and sales performance to ensure business continuity (Doh et al., 2015; Lo & Sheu, 2007; Consolandi et al., 2009; Wai Kong Cheung, 2011; Robinson et al., 2011; Wagner, 2010). In our study, we confirm this relationship, as small and medium businesses (SMEs) have the flexibility and capacity to design sustainable business strategies (Gubitta & Gianecchini, 2002). Therefore, this finding is in line with previous studies reporting superior performance by firms that incorporate sustainability into their strategy, indicating that sustainable business practices can become a source of competitive advantage (Lloret, 2016), achieving, in turn, business innovation and providing unique benefits to stakeholders. For example, corporate sustainability strategies in SMEs require a shift in the use of material and energy resources, which can only be achieved through innovation, leading to new production processes and products (Oertwig et al., 2017).

However, a more detailed analysis of the results shows that the relationship between these two variables is fully and sequentially mediated by innovation and sustainability performance when these two variables are included in the model. These results therefore help to unravel the mechanisms through which corporate sustainability strategy (CSS) enhances sales performance and show that CSS has an indirect rather than a direct effect on sales performance. By finding that this effect is not direct but occurs indirectly through two sequential mediation mechanisms (innovation-sus-

tainability performance), this study provides evidence of the internal mechanisms that lead to higher levels of sales performance.

The findings show that in SMEs pursuing a corporate sustainability strategy, this is reflected in the activation of the innovation machinery, which in turn encourages employees to work towards higher levels of sustainability performance. This complete internal process seems to underpin the positive effect of CSS on business success (sales performance). Thus, our research confirms that both innovation and sustainability performance are mediating variables between CSS and sales performance, implying that SMEs are not constrained by lower resource capacity compared to large firms (AlQershi et al., 2020). These results are in line with previous studies, such as that by Nwoba et al. (2021), which suggest the influence of intermediate variables in the relationship between CSS and improved sales figures. Ultimately, the consideration of the sequential mediation of innovation and sustainability is a novel contribution to the literature as it points the way forward for SMEs.

Finally, the results show that ICT strategy moderates the relationship between CSS and innovation, suggesting that the implementation of sustainable strategies must go hand in hand with investments in ICT and innovation (Marín-García et al., 2021). Financial and human resource constraints in SMEs affect the adoption of digital technologies and the introduction of new products and processes. However, when the SME has a well-defined ICT strategy, it creates an organisational culture that is more receptive to change and favours the implementation of innovative and more appropriate business models (Estensoro et al., 2022).

Conclusions

Sustainability is a strategic issue for SMEs in the current competitive environment (Goyal et al., 2013). Companies need to integrate sustainability in order to make a strategically important contribution to the sustainable development of society through their business activities (Broman et al., 2017; Schaltegger et al., 2013). However, it requires SMEs to adapt their business strategies (Oertwig et al., 2017), including criteria for sustainable development, i.e., environmental, social, and economic factors (Cunha et al., 2021).

This paper aims to reduce the gap identified in the literature review regarding the relationship between CSS and its impact on the performance of small and medium-sized enterprises (SMEs). The previous literature is more qualitative (Kerr et al., 2015) and focuses primarily on the firm's financial performance. In this study, we advance in this direction by proposing a quantitative study and using sales performance as the dependent variable.

As previous empirical work analysing CSS is scarce, this paper aimed to contribute to the body of knowledge related to innovation, sustainable performance, ICT strategy, and sales performance. We determine the way forward for sustainability-minded SMEs to achieve business success. Moreover, our study is unique in explaining 'when' as well as 'how' CSS enhances SME innovation; that is, the boundary conditions on which this relationship develops. While research on CSS reveals large benefits in terms of innovation performance (Ortiz-de-Mandojana & Bansal, 2016),

it has not examined the active role that dispositional aspects can play in enhancing or minimising the positive influence of CSS. Our analysis found that ICT strategy has a moderating effect on the relationship established between CSS and innovation. Therefore, we determine the way forward for sustainably-minded SMEs to achieve business success.

Theoretical implications

Given the new business challenges of sustainable development, our study helps to advance the understanding of corporate sustainability strategy, which is a consequence of combining environmental and social dimensions in the strategic management process (Saunila et al., 2019).

This study makes several contributions. First, it extends the current knowledge on how, in the era of sustainability, if SMEs adopt CSS, they can improve their sales performance. To do so, we developed a first model in which both variables are directly related. Taking into account the ambiguity of findings in previous studies (Doh & Guay, 2006; Doh et al., 2015; Curran & Moran, 2007), our study provides a better understanding of CSS applied to entrepreneurial SMEs, which have been the subject of less study than large companies (Rubio-Andrés et al., 2023).

In a second model, we examine the role of innovation mediation and sustainable performance between CSS and sales performance (individual and sequential) and the moderating effect of ICT. Studies incorporating variables are needed to further investigate the relationship between sustainability strategy and sales performance (Nwoba et al., 2021). In this study, we demonstrate how innovation and sustainable outcomes play a key role in translating sustainability strategy into business performance. We believe we have made a positive contribution to the theoretical debate on whether incorporating sustainability criteria in entrepreneurial SMEs improves performance (Goyal et al., 2013).

Practical implications

Beyond theory, our empirical findings have significant implications for both practice and business policy-making. The results of this study offer interesting insights for both managers and practitioners, especially SME managers. Corporate sustainability has become the most important reality for SME managers when defining their corporate strategy during the implementation period. Companies that achieve good business performance must define environmental, social and economic risks, which means translating opportunities into values and integrating sustainability strategies into their structure (Tuna & Beşler, 2015).

The implementation of CSS also requires ICT strategies that enhance innovation in entrepreneurial SMEs. Our results suggest that SME managers concerned with improving business performance should incorporate sustainability criteria into their corporate strategy (Wijethilake, 2017). The positive impact on innovation and the advancement of sustainable outcomes leads SMEs to achieve greater efficiency, higher quality and more sustainable products, resulting in higher business profits.

Managers can take a proactive stance in implementing corporate sustainability strategies by taking advantage of various sustainable opportunities. They can focus on environmental practices, such as R&D, technology leadership and innovation, by understanding the impact on sales profitability. This research provides SME practitioners with a tool to help improve their performance as well as their competitive positioning.

Furthermore, this research has implications for business schools. These contributions are significant because of the inadequate understanding of business school managers on how to properly impart knowledge on corporate sustainability strategies and thus more effectively transmit knowledge oriented to the business fabric of SMEs. Since many of their students will be potential future entrepreneurs, it is essential to make them aware of the importance of innovation, ICT strategy and sustainable performance in achieving profitable sales after implementing a corporate sustainability strategy. In this way, business schools could put greater emphasis on developing more holistic training programmes when it comes to managing sustainability-oriented firms and thus mitigate existing environmental problems.

As a final conclusion, we can say that sustainable purpose is aligned with business performance in today's society and SME managers and training programme managers should thus engage in SSC to achieve sustainable performance and improve sales.

Limitations and future research directions

Although our study has numerous implications for theory and practice, it is not without limitations, which offer possibilities for future research.

First, our study focused on entrepreneurial SMEs, and we suggest that future researchers use our framework to undertake a comparative study between SMEs and large companies to determine the differences in terms of the direct and indirect effects between CSS, innovation, sustainability performance and sales performance.

Second, the present study was only carried out in Spain, so it would be interesting to extend the sample to other geographical areas, such as Europe and Latin America, where SMEs are prominent in the business fabric. Furthermore, although the sample is significant, our study also has a sampling error, which should be taken into consideration as a limitation.

Third is the use of a questionnaire to obtain empirical information by surveying SME entrepreneurs. Although commonly used in social research (Rubio-Andrés et al., 2024b), this method has limitations arising from its use of self-diagnosis and personal opinion (Rubio-Andrés et al., 2022).

Fourth, the ICT strategy variable was measured as a dichotomous variable, and the results may thus be conditioned. The choice of this measure allowed us to assess categorically whether or not a firm has engaged in its ICT strategy, thereby reducing the ambiguity that a Likert scale may reflect, while sacrificing the more nuanced information that a rating scale might have provided (Rahman, 2007). The use of categorical information has shown how the use of an ICT strategy in SMEs enhances the positive impact of CSS on innovation.

Despite the aforementioned limitations, the results of this study provide several vital insights for theory, researchers and organisations on hybrid strategies, innovation and firm performance in the context of entrepreneurial SMEs.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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