The role of innovation and social media in explaining corporate social responsibility–business sustainability nexus in entrepreneurial SMEs

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Abstract
Purpose – The purpose of this study is to investigate the influence of Corporate Social Responsibility (CSR) on the sustainability of Central European SMEs by emphasizing the role of innovation as a mediator and social media as a moderator.

Design/methodology/approach – A questionnaire is developed, and primary data is collected from four Central European countries. Partial Least Squares Structural Equation Modelling is used to analyse data from over 1,500 SMEs operating in Visegrad countries.

Findings – Our findings reveal a significant and positive association between CSR and business sustainability. Furthermore, it is identified that innovation serves as a mediator in the CSR–business sustainability link in two of the examined countries. Additionally, the moderating effect of social media is observed in Hungary, indicating that the impact of CSR and innovation on business sustainability varies by country context.

Research limitations/implications – While offering valuable insights, the study’s generalizability to other regions necessitates further exploration. Additionally, the research focuses on specific mediating and moderating factors, leaving room for the investigation of other potential influences.

Practical implications – This study emphasises the need to integrate CSR practices and promoting innovation to improve business sustainability for SMEs in Central Europe. Recognising social media’s moderating influence may help firms adjust their CSR strategies to reflect the preferences and behaviours of their target consumers.

Social implications – Promoting CSR in SMEs can encourage social well-being, including community development and environmental sustainability.

Originality/value – This research contributes fresh insights into the interplay of CSR, innovation and social media within Central European SMEs. It underscores the importance of considering regional nuances when analysing these dynamics.

Keywords Innovation, Social media, CSR, Business sustainability, Entrepreneurial, SME, Central Europe

Paper type Research paper

1. Introduction
In the recent years, corporate responsibility, including all its aspect such as social, ethical and environmental, has been under the scholars’ focus (Ghasemi and Nejati, 2013; Kraus et al., 2021; Rey-Martí et al., 2016). In the course of the last two decades, corporate social responsibility (CSR) has gained scholars’ attention, and this can be seen from the vast range of studies covering CSR that have been published. Such publications include the CSR practices’ implementation (Coppa and Sriramesh, 2013), the role of CSR on business performance, the association of CSR with innovation and competitiveness (Bocquet et al., 2017; González-Serrano et al., 2020; Maduerio et al., 2016; Martinez-Conesa et al., 2017; Militaru
and Ionescu, 2006; Orlitzky et al., 2011), entrepreneurship (dos Santos et al., 2021; Ramos-González et al., 2021) and more recently, interactions of CSR with technology advancement and social media (Cheng et al., 2021; Khanal et al., 2021), and lastly, CSR during the pandemic (Carroll, 2021). Nonetheless, CSR in the small and medium enterprises (SMEs) context has not gained the appropriate attention from scholars (Bansal and Hoffman, 2012; Johnson, 2015). Thus, the implementation of CSR practices is recognized as new elements by entrepreneurial SMEs.

CSR is seen as an intersection of society, institution and economy (Coppa and Sriramesh, 2013). Hence, CSR is not just something that organizations should care about. This does not refer only to large firms but entrepreneurial SMEs as well. As a matter of fact, SMEs compose a large share of the European economy and are responsible of two-thirds of pollution across Europe (Parker et al., 2009; Saura et al., 2021; Sorian and Castrogiovanni, 2012). Given this fact, a sound way to address this issue could be an approach that put in place CSR practices among SMEs as well. Official statistics (European Commission, 2019) inform that above 50% of the total value added in European Union is as the result of SMEs activity. In addition, SMEs employ two-thirds of the work force in the European Union. Having said that it is a clear disproportional attention from scholars to CSR at SMEs context, which represents a motivation to examine CSR practices for all enterprises, despite their size.

Implementation of the CSR practices leads to business performance (Lins et al., 2017; Martinez-Conesa et al., 2017; Nelling and Webb, 2009; Rodriguez-Fernandez, 2016; Surroca et al., 2010). With the aim to enrich the literature, this paper aims to examine whether or not business sustainability can be positively affected by CSR practices. All means that ensure business sustainability or avoid businesses failure (Cabinová et al., 2021; Tari et al., 2020) are encouraged to be implemented, in particular, when such practices deal with CSR for entrepreneurial SMEs. In addition, in this paper it is examined the role of innovation and social media in the linkage between CSR and business sustainability, motivated by prior research (Boyd et al., 2016; Carayannis and Grigoroudis, 2014; Lounsbury et al., 2019; Martinez-Conesa et al., 2017). According to the technology–organization–environment framework (Baker, 2012), technology, organization and environment are the three sets of factors that influence an organization adopting innovations. The technological aspects of an organization, in general, explain innovation and social commerce adoption by entrepreneurial SMEs (Abed, 2020; Cera and Khan, 2024). On the other hand, the innovation diffusion theory (Rogers, 1995) sees diffusion of innovations as a communication process in which information on innovations is shared within social groups across time. Hence, innovation and social media may exhibit some interconnections (Kwon et al., 2021), since they are seen as part of technological characteristics of an organisation. However, at the current state there is scant research on the interactions of CSR, innovation, social media and performance (Hanaysha et al., 2021) or from a consumer perspective (Rautela et al., 2021). In this line, there are scholars who call for more research on the interaction of innovation and social media from a capability view (Cera et al., 2024; Muninger et al., 2019; Tortora et al., 2021; Zhang and Zhu, 2021). To fill this gap, the current study contributes to the literature by exploring the role of innovation and social media in the linkage between CSR and firm sustainability, in particular in the context of entrepreneurial SMEs. In this paper, innovation is seen as a factor that mediates the effect of CSR on business sustainability, whereas the social media’s role is hypothesized as a moderator of the influence of CSR on business sustainability. From a managerial perspective, it is of particular concern and interest to investigate the influence of CSR on business sustainability or avoidance of business failure and the role of innovation and social media in this relationship (Dayanandan et al., 2018).

The rest of the paper has five parts/sections. The following section focuses on the hypothesis development and the proposed research model (conceptual framework). Then, the nature of the data, the way data is collected, the measurement of the variables and the applied
methods are described. The obtained results are summarized in a section titled “Results”. Findings are discussed in a separate section, followed by the conclusion section, which represents the final part of the paper.

2. Literature review

In the recent years there’s been a considerate growth of interest on CSR (Palacios-Marqués et al., 2019; Palacios-Marqués and Devece-Carañana, 2013). Due to a sudden upsurge in environmentally sensitive consumers, many companies have become more active in engaging CSR to some extent in their daily practices (Saeidi et al., 2015). Many organizations are adopting “green” initiatives or trying to come off as socially responsible in order to meet public demand and to draw positive market attention and results (Williams et al., 2014). Suddenly a concept which not too long ago was foreign to organizations and the overall society has now turned into a key factor influencing the public when interacting with businesses, leading to many studies being done by scholars wishing to study a topic which has suddenly become so very important. Even though there does exist a variety of literature regarding CSR, scholars, businesses and society overall are still greatly confused about the clear definition of CSR and the impact it has on all the components it involves.

What is CSR? According to Carroll (1979), CSR could be defined as the social responsibility of a business which includes the economic, legal, ethical and discretionary expectations that society has of organizations at a given point in time. To the department of Trade and Industry of the UK CSR represents the integrity with which a company governs itself, fulfils its mission, lives by its value, engages with its stakeholders, measures its impact and reports on its activities. To Rexhepi et al. (2013) CSR is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large. CSR is also seen in different ways, according to an economic, social and legal view from CSR being considered as a practice that sacrifices profits to a tool to market and gain reputation to an international private business self-regulation (Sheehy, 2015). Definitions of CSR have been evolving for many years. Along the years the definitions have been altered, improved, completely changed or many others have been introduced by scholars as CSR studies have added new details and information with time, shedding light to some aspects of CSR while confusing the public on others (Carroll, 1999). Undoubtedly CSR is rather complex and diverse. The ecology, society and the economic system are highly complex dynamics systems and CSR is involved in each. Furthermore the issues addressed by CSR are fairly important such as corporate profitability, economic stability, organization and work safety and lastly the preservation of the ecology (Sheehy, 2015). It is no wonder there exist many ways to define such a vast concept as CSR.

While involving such complex factors, it is of wonder knowing that CSR has not been given the attention it deserves up until now by either society or the corporations and the governments. A study done by Öberseder et al. (2011) proved that when purchasing products, customers were not influenced by a company’s CSR practices and price was the key factor influencing their decisions. Furthermore, while the customers did want to support socially responsible businesses, they did not do so due to the prices being significantly higher. Consequently, companies have not bothered to incorporate CSR into their daily practices due to the indifference dominating our society till now. Businesses refuse to engage in CSR practices due to other various reasons from the lack of information to what CSR is leading to managers being unable to properly incorporate CSR into their daily business strategies (Sheehy, 2015) to the costs associated with being socially responsible, the last one being true especially for entrepreneurial SMEs (Ahmad et al., 2022; Hadi and Udin, 2021; Lepoutre and Heene, 2006; Munro and Munro, 2020; Zarnadze et al., 2022). It is also worth mentioning that companies have
a legal obligation to be profitable, the only concern they can have, is to concentrate wealth in the hands of their shareholders and while companies are required to provide an annual report disclosing their financial position to the parties concerning the company (shareholders, authorities, possible investors). Ethical and moral behaviour on the other hand is a long term commitment which does not form part of a corporation’s legally required reporting (Pavitt, 2012), contributing to the lack of information when it comes to how a company is influencing the environment and society. It is exactly this lack of information which has made it easy for companies to survive without any backlash from society when engaging in harmful practices to the society. To support this claim, Öberseder et al. (2011) show us that environmentally sensitive customers would stop supporting a company if they knew it was not socially responsible however they admitted that finding information on whether the company engaged on CSR or not was not an easy task. All of what we discussed up until now leads us to questioning why companies are not engaging in CSR the way they should?

The thing is most companies who do engage in CSR do so either because they’re being concerned about their image or are forced by law (Mendibil et al., 2007). These companies are not voluntarily taking the first step to being more socially responsible and instead are being forced by the society to do so and even then, they’re constantly hesitating, avoiding, not properly engaging CSR into their business or even going as far as pretending to be socially responsible (greenwashing). All of which leads us to conclude that corporations either do not see CSR as beneficial to their business and instead see it as a practice which sacrifices profits still or they lack information about the benefits of engaging in CSR and how to use CSR successfully to generate profits.

In this paper we will go through how CSR affects a business’ longevity/sustainability by having an influence on innovation, reputation, customer loyalty and purchase and stakeholders’ relationship with the business in both cases when social media is and is not involved. We will study how adding social media to the mix will affect the way CSR influences key factors supporting a business’ sustainability/longevity and how businesses can use it efficiently to make CSR work for them.

CSR has a positive effect on firm performance consequently to having a positive effect on competitive advantage, reputation and customer satisfaction (Ahmad et al., 2024; Saeidi et al., 2015). CSR image influences the affective response of customers and it leads to customer recommendation and repurchase behaviour (Pérez and del Bosque, 2015). Likewise it is argued that CSR should be integrated into business management models since it allows the company to generate valuable, intangible strategic assets in order to achieve competitive advantage and a high level of financial performance resulting in the company being more sustainable (Martinez-Conesa et al., 2017). In the research it is shown that CSR could positively affect sustainability as a result of enhancing the performance, gaining loyalty among customers which leads to repurchase behaviour. Their paper also introduced CSR as a mean to build social capital among primary stakeholder which can help the company survive over time. Moreover Mendibil et al. (2007) stated that the implementation of appropriate CSR practices can produce a positive impact on the performance of an organization affecting its sustainability. Rodriguez-Fernandez (2016) too studied the relationship between CSR and financial performance and vice-versa. Results showed that there was a positive relationship between CSR and financial performance and vise-versa. Companies which had financially benefited from CSR also were more sustainable (socially/environmentally). To add to these studies Choi and Yu (2014) uniquely studied how CSR positively affects employees’ attitudes, behaviour and commitment to their company thus leading to a better financial performance. Taking in consideration all the literature mentioned till now, we therefore propose the following hypothesis:

\[ H1. \] CSR positively affects business sustainability.
Nowadays, CSR and innovation are the foundation of business competencies. Innovation is a key factor for the company to be competitively advantageous and to keep up with customers’ demands. There are many studies done to determine whether there’s a link between CSR and innovation. Martinez-Conesa et al. (2017) states that CSR is an important driver mechanism for companies to be more innovative, efficient and effective and their study resulted in CSR leading to innovation and strong social benefits. Adoption of social and environmental practices may increase funds dedicated for research and development and thus generate process and product innovation (McWilliams and Siegel, 2000). Furthermore, scholars showed that CSR has a positive impact on the innovations of SMEs. Their findings can also be supported by studies conducted by Bocquet et al. (2019, 2011) proving that CSR in entrepreneurial SMEs positively affects technological innovation. Also Mendibil et al. (2007) argues that CSR initiatives can lead to innovation through the use of social, environmental or sustainability drivers to create new ways of working, new products, services, processes and new market space.

There are scholars who have tried to identify the type of CSR strategy that best promotes innovation of the firms (Bocquet et al., 2017; Cera et al., 2023; Ferauge, 2012). Nevertheless, additional research is needed in this aspect. Two decades ago, McWilliams and Siegel (2000) showed that the adoption of practices on society and environment can raise R&D-related funds, which may lead to product and process innovations. MacGregor and Fontrodona (2011) studied CSR–innovation linkage for firms operating in Spain, Italy and the UK, and concluded that CSR-driven innovation is focused on products and services that are related to social purpose, whereas innovation-driven CSR is a function of value as it is associated with creating social activities. Wagner (2010) went beyond by conceptualizing the CSR as a multi-dimensional appraisal of the firm’s responsible performance. He stated that this approach fosters the innovation of the firm. On the other hand, Gallego-Alvarez et al. (2011), while studying the bi-directions of the CSR–innovation relationship, demonstrated that sustainable activities are not always followed by the creation of value and innovation. Considering the above divergences, it is of interest to study the role of innovation in the CSR–sustainability relationship. Thus, it is hypothesized that:

\[ H2a. \text{ CSR positively affects innovation.} \]

\[ H2b. \text{ Business sustainability is positively influenced by innovation.} \]

\[ H2c. \text{ Innovation mediates the effect of CSR on business sustainability.} \]

Social media are Internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others (Carr and Hayes, 2015; Saura et al., 2021). Social media enables people to be increasingly involved in (transnational) communities that (co-)create, modify and share, information and it enables politically motivated individuals and organizations to create and respond to messages in new ways. It has now become a tool to promote social awareness amongst the public and it has made it easier for people driven by the same values and believes to come together and influence others through sharing eWOM and shared information amongst internet’s vast communities (Katona et al., 2011). It is also fairly easy for activists and non-profit organizations protecting the environment to share information and influence a large audience (Taylor et al., 2001). A study conducted by Boyd et al. (2016) also concluded that social media may be an efficient tool for empowering social activism as it can be inefficient which could also be the case when it comes to companies marketing their CSR, a topic to which we will go in further detail as we go on. More importantly, ordinary citizens can not only be able to access information regarding CSR practices of a business but also expose businesses which engage in harmful ones (Pavitt, 2012). Unlike before when businesses had
the chance to escape without a scratch when not being socially responsible, nowadays thanks to the Internet, companies have nowhere to hide and are being forced to engage CSR in their strategy (Whelan et al., 2013). While social media may as well be blamed for keeping companies on their toes when it comes to how they’re view by a now environmental sensitive audience, offering the said audience the tools to influence public opinion of the company on a golden plate, social media can also be used by companies to market their socially responsible practices and gain the trust of the customers, good reputation and thus repurchase intention and all the financial benefits all these factors lead to, all of this done efficiently, in a short amount of time and with low costs (Anim et al., 2023; Cheng et al., 2021; Lee and Oh, 2013; Tuan and Moretti, 2017).

Most of the literature referenced in this paper emphasizes how society’s social awareness has increased and how CSR is becoming more and more important both for the society and the corporations itself. We discussed a world where society did not pay attention to CSR leading to companies doing the same; we discussed how social media is efficiently being used by people and communities driven by the same values to influence others and the companies to be more socially responsible. And we mentioned how companies could also efficiently use social media to appeal to the mass public. Has the situation changed now that CSR has become so important?

Reasonably, CSR should by now be incorporated into the daily practices of businesses. Companies must appeal to the mass public and satisfy the needs of their now new “socially responsible” customers who no longer base their purchase decisions only on prices. CSR also offers various benefits from customer’s trust, competitive advantage, a good reputation, customer loyalty and satisfaction, repurchase intention and so on (Saedi et al., 2015). Engaging CSR into their business practices especially in a point of time where CSR holds this much importance and where tools such as social medias can be utilized to easily market these practices would be the proper smart choice.

Unfortunately, companies do not seem to find CSR as attractive as society does and even now the rate of adoption of CSR practices has been rather slow especially within entrepreneurial SMEs. The reasons for this slower adoption can range from the daily pressures to succeed in the marketplace to the limited amount of resources that SMEs have to SMEs often not really understanding the benefits of adopting these new practices (Mendibil et al., 2007). As for the companies who do engage in CSR in some way, their attempts to be socially responsible are rather disappointing and lacking. A study done by Pedersen (2010) explored the way managers in big companies do incorporate CSR into their daily practices and the results showed that them being socially responsible consisted of them taking care of their workers and making the products and services that the customers want in an environment-friendly way. The managers did not believe that their responsibilities towards society covered anything other than that. Pedersen (2010) concluded that the “heads” of these big companies tend have a view of CSR that focuses on risk avoidance (“do no harm”) rather than generating positive social and environmental impacts (“doing good”). Visser (2010) supports the previous statement while considering the current sustainability and corporate responsibility programs as failures due to them being less bad rather than good. However, Visser also stated that eventually social media’s influence could lead to companies incorporating CSR into their daily practices right. Based on the above discussion, the following hypotheses can be framed:

\[ H3a. \text{ Social media positively influences business sustainability.} \]

\[ H3b. \text{ Social media moderates the effect of CSR on business sustainability.} \]

Figure 1 graphically illustrates the relationship outlined in this section of the paper and the shows the position of each hypothesis within this conceptual framework.
3. Methods and procedures

3.1 Data
For this research primary data was collected. For this reason, a questionnaire was developed and translated into four local languages, corresponding to the languages spoken in Visegrad countries, following a translation and back-translation procedure (van de Vijver and Leung, 2021). An online form of the questionnaire was created and delivered to firms. The questions in the form were assigned randomly. To avoid any possibility of having forms filled in automatically by a computer, a controlled question was introduced in the questionnaire. The questionnaire was filled in by the owner/manager of the business. The filtered question was formulated as “you are: (1) owner of the business; (2) owner and manager; (3) manager; (4) other”. Only those records who selected options 1 or 2 are analysed in this paper, leading to entrepreneurial SMEs.

The data was collected from SMEs operating in Central European countries, which are Czech Republic, Slovakia, Poland and Hungary. These countries form a unique group known as Visegrad countries. Random selection was used to select among 8,250 SMEs in Czech Republic, 10,100 SMEs in Slovakia, 7,680 SMEs in Poland and 8,750 SMEs in Hungary. To enable the random selection approach, information about SMEs was gathered from the CRIBIS database for firms operating in Czech Republic and Slovakia, Central Statistical Office of Poland and the database of Chambers of Commerce and Industry in Budapest (Hungary). Random selection technique was ensured by following a set of steps: defining the sample frame (firms with less than 250 employees); listing all firms in a spreadsheet and assigning a unique number per each firm by using a “Randbetween” function in Microsoft Excel; sorting the dataset by this unique number; sending an e-mail to the selected firms with a request to fill in an outline questionnaire. In a second stage, firms were contacted by phone to follow up with the completion of the questionnaire. Overall, 1,585 valid questionnaires are collected. Table 1 illustrates the sample profile of the respondents disaggregated by counties.

3.2 Variables
The dependent variable of this study is sustainability, which is measured using three statements formulated in a Likert 5-pint scale: 1 stands for “strongly agree” and 5 stands for “strongly disagree”. The three statements are: “The bankruptcy of the company brings valuable experience for further business”, “A bankruptcy does not mean an entrepreneur’s failure”, “Bankruptcy does not reduce the self-confidence of the entrepreneur”. CSR, innovation and social media are all measured with respective statements formulated in a

Figure 1. Research model
Regarding the measurement of CSR, there is no solid consensus of conceptualizing and measuring it among scholars (Galbreath and Shum, 2012; Montiel, 2008). In the current research four statements are used to capture CSR following and influenced by prior studies (Ali et al., 2020; Maignan and Ferrell, 2000), which are: I know the concept of CSR and assert it in the business; implementation of CSR enables our company to gain a competitive advantage in the market and higher customer loyalty; CSR enables our company to attract satisfied, loyal and motivated employees. The following statements were used to measure innovation: Our company uses innovative ways to win new markets and retain existing customers; We place great emphasis on the innovation of our products and services, and it is positively reflected in the stability and performance of the company. Social media is measured by using four statements, which are: Thanks to social media, our business can respond more flexibly to market developments; social media helps our business quickly share information with customers and partners; our business has a clear strategy on how to use social media; social media supports the growth of our company performance.

The other variables business age (years of operation) and firm size are included in the analysis to control for variance at the dependent variable. Business age is an ordinal variable with four categories which are: Less than or equal to 3 years; more than 3 and less than or equal to 5 years; more than 5 and less than or equal to 10 years and more than 10 years. The question of this variable in the questionnaire was “How long have you been doing business?” Likely, firm size is another ordinal variable with three categories as follow: Micro enterprise (less than or equal to ten employees and turnover less than or equal to 2 million euro); small enterprise (between 10 and 49 employees and turnover less than or equal to ten million euro); medium enterprise (between 50 and 249 employees and turnover less than or equal to ten million euro).
3.3 Methods
The proposed relationships in this study are examined using partial least squares structural equation modelling (PLS-SEM) (Hair et al., 2017). The reason why PLS-SEM was used is because, firstly, this research requires latent variable scores to follow-up analyses and, secondly, latent variables (constructs) are not normally distributed (Hair et al., 2019). The normality test was performed in SPSS version 23 by running Kolmogorov–Smirnov and Shapiro–Wilk tests, which both suggest that latent variables were not normally distributed. The latent variables in this study are results of reflective indicators. PLS-SEM was executed through SmartPLS 3.0 (Ringle et al., 2022), including the bootstrap procedure with 5,000 iterations of resampling. To have a better understanding of the role of innovation and social media in the CSR–business sustainability relationship, there is a need to investigate their direct, moderating and mediating effects in such research model. A moderator variable, in this case social media, affects the level, direction or presence of a relationship between variables (CSR–business sustainability), while a mediating variable, in this study innovation, transmits the effect of an independent variable (CSR) on a dependent variable (business sustainability).

Common method variance is a critical issue when dealing with primary data collected using surveys. In this study, common method variance was examined using Harman’s single factor test (Chang et al., 2010). This test informs for the presence of common method variance when a single factor emerges or the first capture the most of the variance (50% or above) (Podsakoff et al., 2003). Specifically, all variables (items) were entered into a factor analysis. Four major factors emerged with eigenvalues greater than 1 explaining 71.4% of the total explained variance, while the first factor explains one-third of the variance (32.7%). Since there was no single factor and none of the factors explains the majority of the overall variance, it can be concluded that common method variance is not a concern in this study.

4. Results
To obtain the results of the tested relationships, the analyses are done in two steps: Firstly, measurement model is done to check some of the PLS-SEM’s assumptions by running factor analysis within PLS-SEM, secondly, path analysis is performed.

Table 2 informs about item loadings and composite reliability of latent variables for complete and sub-samples. The lowest composite reliability value was found 0.735

<table>
<thead>
<tr>
<th></th>
<th>Complete</th>
<th>CZ</th>
<th>SR</th>
<th>PL</th>
<th>HU</th>
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<tr>
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<td>0.834</td>
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<td>Social media</td>
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<td>socmed4</td>
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Note(s): *Composite reliability; CZ, Czech Republic; SR, Slovak Republic; PL, Poland; HU, Hungary
Source(s): Created by author
Discriminant analysis is another assumption of PLS-SEM method. Table 3 reports the discriminant analysis and correlation matrix of the latent variables for complete and sub-samples. Analysis demonstrates that all Heterotrait-Monotrait coefficients (Henseler et al., 2015) were below the conservative threshold of 0.85 for complete and sub-samples, indicating that all latent variables were distinct one from another. Therefore, it was concluded that the discriminant validity is established for this research.

From the methodological perspective, there are two dependent variables within the proposed research model. The first dependent variable is innovation with CSR as independent variable and the second variable is business sustainability with all other variables as independent ones. Given this fact, two $R^2$-squares can be assessed within the model, one for innovation and another one for business sustainability. $R^2$-square informs about the good-fit of the model. In Table 4 are reported the $R^2$-squares and adjusted $R^2$-square of the above dependent variables for complete and sub-samples.

Ensuring no violation of the PLS-SEM's assumptions offers the chance of testing the proposed relationships. The examination of the linkages is done through path analysis in PLS-SEM. The results of the analysis are shown in Table 5 for complete and sub-samples grouped by direct, moderating and mediating paths.

### Table 3. Discriminant analysis and correlation matrix

<table>
<thead>
<tr>
<th>Sample</th>
<th>CSR</th>
<th>Innovation</th>
<th>Social media</th>
<th>Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete</td>
<td>CSR</td>
<td>0.332</td>
<td>0.340</td>
<td>0.135</td>
</tr>
<tr>
<td></td>
<td>Innovation</td>
<td>0.463</td>
<td>0.309</td>
<td>0.144</td>
</tr>
<tr>
<td></td>
<td>Social media</td>
<td>0.393</td>
<td>0.401</td>
<td>0.087</td>
</tr>
<tr>
<td></td>
<td>Sustainability</td>
<td>0.178</td>
<td>0.216</td>
<td>0.105</td>
</tr>
<tr>
<td>CZ</td>
<td>CSR</td>
<td>0.264</td>
<td>0.268</td>
<td>0.236</td>
</tr>
<tr>
<td></td>
<td>Innovation</td>
<td>0.395</td>
<td>0.234</td>
<td>0.225</td>
</tr>
<tr>
<td></td>
<td>Social media</td>
<td>0.303</td>
<td>0.373</td>
<td>0.161</td>
</tr>
<tr>
<td></td>
<td>Sustainability</td>
<td>0.288</td>
<td>0.359</td>
<td>0.195</td>
</tr>
<tr>
<td>SR</td>
<td>CSR</td>
<td>0.358</td>
<td>0.250</td>
<td>0.162</td>
</tr>
<tr>
<td></td>
<td>Innovation</td>
<td>0.523</td>
<td>0.235</td>
<td>0.207</td>
</tr>
<tr>
<td></td>
<td>Social media</td>
<td>0.257</td>
<td>0.267</td>
<td>0.054</td>
</tr>
<tr>
<td></td>
<td>Sustainability</td>
<td>0.227</td>
<td>0.330</td>
<td>0.063</td>
</tr>
<tr>
<td>PL</td>
<td>CSR</td>
<td>0.427</td>
<td>0.382</td>
<td>0.163</td>
</tr>
<tr>
<td></td>
<td>Innovation</td>
<td>0.530</td>
<td>0.381</td>
<td>0.149</td>
</tr>
<tr>
<td></td>
<td>Social media</td>
<td>0.428</td>
<td>0.466</td>
<td>0.111</td>
</tr>
<tr>
<td></td>
<td>Sustainability</td>
<td>0.204</td>
<td>0.195</td>
<td>0.133</td>
</tr>
<tr>
<td>HU</td>
<td>CSR</td>
<td>0.380</td>
<td>0.398</td>
<td>0.127</td>
</tr>
<tr>
<td></td>
<td>Innovation</td>
<td>0.533</td>
<td>0.388</td>
<td>-0.024</td>
</tr>
<tr>
<td></td>
<td>Social media</td>
<td>0.486</td>
<td>0.536</td>
<td>0.147</td>
</tr>
<tr>
<td></td>
<td>Sustainability</td>
<td>0.163</td>
<td>0.059</td>
<td>0.187</td>
</tr>
</tbody>
</table>

**Note(s):** HTMT coefficients are below the diagonal, while correlation coefficients are above that; CZ, Czech Republic; SR, Slovak Republic; PL, Poland; HU, Hungary

**Source(s):** Created by author

### Table 4. $R^2$-squares per model

<table>
<thead>
<tr>
<th>Sample</th>
<th>Innovation</th>
<th>Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete</td>
<td>0.110$^a$</td>
<td>0.128$^a$</td>
</tr>
<tr>
<td>CZ</td>
<td>0.070$^b$</td>
<td>0.126$^b$</td>
</tr>
<tr>
<td>SR</td>
<td>0.068$^b$</td>
<td>0.182$^a$</td>
</tr>
<tr>
<td>PL</td>
<td>0.063$^a$</td>
<td>0.047$^b$</td>
</tr>
<tr>
<td>HU</td>
<td>0.090$^a$</td>
<td>0.070$^b$</td>
</tr>
</tbody>
</table>

**Note(s):** $^a$ $R^2$ square; $^b$ $R^2$ Square Adjusted; CZ, Czech Republic; SR, Slovak Republic; PL, Poland; HU, Hungary

**Source(s):** Created by author
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Path</th>
<th>Complete</th>
<th>CR</th>
<th>SR</th>
<th>PL</th>
<th>HU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct paths</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1</td>
<td>CSR → Sust</td>
<td>0.093 (2.985)***</td>
<td>0.177 (3.492)***</td>
<td>0.095 (1.197)</td>
<td>0.127 (1.999)***</td>
<td>0.140 (2.036)***</td>
</tr>
<tr>
<td>H2a</td>
<td>CSR → Inn</td>
<td>0.331 (14.19)***</td>
<td>0.264 (5.784)***</td>
<td>0.358 (7.101)***</td>
<td>0.426 (9.036)***</td>
<td>0.380 (7.168)***</td>
</tr>
<tr>
<td>H2b</td>
<td>Inn → Sust</td>
<td>0.110 (3.629)***</td>
<td>0.160 (3.241)***</td>
<td>0.150 (2.335)***</td>
<td>0.076 (1.146)</td>
<td>−0.113 (1.575)</td>
</tr>
<tr>
<td>H3a</td>
<td>SocMed → Sust</td>
<td>0.008 (0.300)</td>
<td>0.060 (1.186)</td>
<td>−0.013 (0.150)</td>
<td>0.028 (0.485)</td>
<td>0.152 (2.778)***</td>
</tr>
<tr>
<td>− Firm Age → Sust</td>
<td>0.071 (2.721)***</td>
<td>0.042 (0.808)</td>
<td>0.094 (1.615)</td>
<td>0.165 (3.009)***</td>
<td>0.074 (1.188)</td>
<td></td>
</tr>
<tr>
<td>− Firm Size → Sust</td>
<td>0.044 (1.674)*</td>
<td>0.018 (0.390)</td>
<td>−0.008 (0.164)</td>
<td>0.011 (0.188)</td>
<td>0.110 (1.901)*</td>
<td></td>
</tr>
<tr>
<td><strong>Mediating path</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H2c</td>
<td>CSR → Inn → Sust</td>
<td>0.036 (3.515)***</td>
<td>0.042 (2.944)***</td>
<td>0.053 (2.252)**</td>
<td>0.032 (1.091)</td>
<td>−0.043 (1.482)</td>
</tr>
<tr>
<td><strong>Moderating path</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H3b</td>
<td>CSR × SocMed → Sust</td>
<td>−0.014 (0.536)</td>
<td>−8.045 (0.001)</td>
<td>−0.057 (0.755)</td>
<td>−0.066 (1.330)</td>
<td>−0.117 (2.224)**</td>
</tr>
</tbody>
</table>

**Note(s):** ***, **, * stands for 99%, 95% and 90% level of confidence; t-student in brackets; CSR, Corporate Social Responsibility; Inn, Innovation; Sust, Sustainability; SocMed, Social Media; CZ, Czech Republic; SR, Slovak Republic; PL, Poland; HU, Hungary

**Source(s):** Created by author
Results of the analysis demonstrate that CSR positively influences business sustainability. In case of complete sample, the positive effect of CSR on business sustainability is supported by the data ($\beta = 0.093, p < 0.01$), which lead to the support of H1. Similarly, it can be said for the Czech, Polish and Hungarian samples. Nevertheless, such relationship is not found in case of Slovak sub-sample ($\beta = 0.095, p > 0.10$), meaning that the data rejects H1 for businesses operating in Slovakia.

Regarding the role of innovation in the relationship between CSR and business sustainability, the results are shown based on the direct effect mediating effects. Hence, here are analysed the direct effect CSR on innovation (H2a) and innovation on sustainability (H2b) and then the mediation role of innovation in CSR–sustainability relationship (H2c). Evidence shows that CSR positively influences innovation for complete and all sub-samples. This is a solid finding since the statistical significance of this linkage is above 99% level of confidence for all cases presented in this research model. The above result leads to the support of H2a. Regarding the influence of innovation on business sustainability, excluding the Polish and Hungarian sub-samples, the data demonstrates that business sustainability is positively affected by innovation with at least 95% level of confidence (see Table 5). Thus, there is evidence that supports H2b in case of the complete, Czech and Slovak sub-samples. As for the mediation role of innovation in the CSR–business sustainability relationship, mixed results are found across the sub-samples. Partial mediation of the above relationship is evident for complete sample ($\beta = 0.036, p < 0.01$). Similar results are found in cases of the Czech ($\beta = 0.042, p < 0.01$) and Slovak ($\beta = 0.053, p < 0.05$) sub-samples. Neither complete, nor partial mediation of the CSR–business sustainability by innovation was identified in Polish and Hungarian samples. According to Zhao et al. (2010), this situation is called complementary mediation, as mediated and direct effects both exist and point at the same direction. Therefore, the data supports the mediation role of innovation in the mentioned relationship for the complete, Czech and Slovak samples, meaning that H2c is not rejected, whereas for the Hungarian and Polish cases this role is not supported. Given the above results, one can say that the role of innovation in the effect of CSR on business sustainability varies across the region, meaning that country context matters in this regard.

The results of the role of social media within the research model are shown in Table 5, which correspond to hypotheses H3a and H3b. Firstly, the direct effect of social media on business sustainability is examined. The data reveals a positive influence of social media on business sustainability only in case of the Hungarian sample, meaning that H3a cannot be rejected ($\beta = 0.152, p < 0.01$). However, the other cases, including the complete sample, fail to support the direct effect of social media on business sustainability. Secondly, the social media’s moderating role in the influence of CSR on business sustainability is tested. Evidence shows that social media moderates the effect of CSR on business sustainability only in case of Hungary ($\beta = -0.117, p < 0.05$). The three lines shown in Figure 2 represent the relationship between CSR and business sustainability in case of complete and Hungarian samples. The middle line represents the relationship for an average level of social media. The other two lines represent the relationship between CSR and business sustainability for higher (i.e. mean value of social media plus one standard deviation unit) and lower (i.e. mean value of social media minus one standard deviation unit) levels of the moderator variable social media. As we can see, in the Hungarian case, the relationship between CSR and business sustainability is positive for all three lines as indicated by their positive slope. Hence, higher levels of CSR go hand in hand with higher levels of business sustainability. The upper line, which represents a high level of the moderator construct social media, has a flatter slope while the lower line, which represents a low level of the moderator construct social media, has a steeper slope. This makes sense since the interaction effect is negative. However, the above interpretation cannot be done for the complete sample (see Figure 2). A clarification is needed to be given here. Low scores in the social media’s indicators represent agreement with a statement, whereas high
scores mean disagreement with the statement. Having this said, a good situation for businesses is when there are low scores in the indicators of CSR, business sustainability and social media, which corresponds with agreement with the statements (see sub-section dedicated to variables). Given the above results (only one country showed significant moderating effect), one can say that the role of social media in the effect of CSR on business sustainability vary across the region, meaning that country context matters in this regard.

5. Discussion
The results of this study showed interesting insights regarding innovation and social media’s role in the relationship of CSR with business sustainability. Below are discussed direct, mediating and moderating effects following the proposed research model in this paper.

Firstly, the direct effects on business sustainability originate from CSR, innovation and social media. This research’s finding regarding the positive influence of CSR on business sustainability is in the same line with prior studies’ findings (Galbreath and Shum, 2012; McWilliams and Siegel, 2000; Saeidi et al., 2015; Stojanovic et al., 2020). Hence, CSR can contribute to avoiding business failure or ensuring business sustainability. In addition, this paper has demonstrated that business sustainability is positively affected by innovation. This finding means that businesses engaged in innovative processes strengthen their sustainability. Previous research has shown similar results with the current study (Bacinello et al., 2020; Hameed et al., 2021; Mendes et al., 2021). Moreover, this paper has shown that social media is not an important factor in impacting business sustainability, since from four countries’ samples in Central Europe only one of them has reported significant results. Although prior studies have revealed the effect of social media in other types of business activity including business sustainability (Khanal et al., 2021; Kozłowski and Kuchciak, 2021), the current research has failed to support that for all samples under study.

Secondly, the mediating effect of innovation in CSR–business sustainability linkage shed light on the role of innovation in the proposed research model in this study. Our findings show mixed results across samples. Hence, the mediation role is supported in case of Czech and Slovak samples and rejected for Polish and Hungarian samples. To better understand this role, the CSR–innovation relationship is examined. Analysis of the current research demonstrated that this linkage is a positive one following prior studies’ findings as well (Bocquet et al., 2017; Gaborova, 2020; MacGregor and Fontrodona, 2011; Santos-Jaen et al., 2021). Furthermore, such relationship is tested by Gaborova (2020) for firms operating in Austria, Czech Republic and Slovakia and concluding by finding positive associations. Almost same mediating effect is examined in Bahta’s et al. (2021) study for 402 Eritrean firms, where it was found a partial mediation effect of innovation capability on the association
between CSR and firm performance. The above findings lead to the conclusion that innovation’s role in the relationship between CSR and business sustainability in this study is a partial mediation. Further research is encouraged in this direction to identify reasons why mixed results are present in Central Europe.

Thirdly, the moderating role of social media in the association between CSR and business sustainability is examined in this research. Although social media is in its “best days” nowadays (Boyd et al., 2016; Cheng et al., 2021; Khanal et al., 2021; Kozłowski and Kuchciak, 2021; Lee and Oh, 2013), it seems that it does not influence on business sustainability. To be more specific, findings demonstrated that social media influence business sustainability and moderates the effect of CSR on business sustainability only in case of firms operating in Hungary. This insight cannot be said in case of firms operating in Czech Republic, Slovakia and Poland. Regarding the comparison of CSR and social media between developing and developed countries, Stanislavská et al. (2020) identified a difference in the area of sustainability, which is an important part of communication in developed countries, and the area of education, which is an important part of communication in developing countries. Yet again, this does not inform enough on reasoning the differences across this study’s coverage (Czech Republic, Slovakia, Poland and Hungary), since these countries are almost in the same stage of development. Authors have failed to justify such results with Hofstede’s culture (2011) and World Values Survey (WVS, 2021). While our study finds evidence of moderating effect of social media on the influence of CSR on sustainability in the Hungarian sample, there are other scholars who investigated the role of media coverage by looking into two different aspects: negative and positive CSR awareness (Rhou et al., 2016). Consequently, using the approach suggested by Rhou et al. (2016) to examine the influence of social media within the context of CSR may prove to be more beneficial. In addition, by doing so, it can lead to the support of the presence of moderating role of social media even in the other samples. In general, social media should have its importance in communicating CSR activities and may contribute to the overall business performance (Alatawi et al., 2023; Kucukusta et al., 2019).

6. Conclusion
The aim of this study was to examine the role of innovation and social media in the relationship between CSR and business sustainability for businesses operating in four counties in Central Europe. This research demonstrates the positive influence of CSR on business sustainability (seen as avoidance of business failure) and offers interesting insights regarding the roles of innovation and social media in the CSR–sustainability linkage. To the best of the authors’ knowledge, there is no prior research focused on the above relationships. Therefore, the originality of this paper lies in shedding light on such relationships and bridging CSR, innovation, social media and business sustainability.

CSR has become a burning topic for scholars and not only, linking it to innovation, business performance, competitive advantage (Marakova et al., 2021; Mendes et al., 2021; Santos-Jaén et al., 2021; Shim et al., 2021). More recently, CSR is studied along with communications and social media usage with the aim to leverage their benefits for corporate image and business continuance (Cheng et al., 2021; Khanal et al., 2021; Kozłowski and Kuchciak, 2021). This paper offers insights related to the implementation of CSR practices for entrepreneurial SME (Franceschelli et al., 2018). Hence, it theoretically contributes to the literature by expanding the CSR concept beyond the standard borders of applying CSR practices only by large companies, but introduction that to entrepreneurial SME as well. Additionally, this paper enriches the literature by offering a conceptual model which links CSR, innovation, social media and business sustainability.

From the managerial perspective, there is a need to identify whether CSR contributes to business sustainability or not. In addition, this paper aims to explore whether such
contributions are catalyzed by innovation and social media. Given such importance, this study demonstrates that business sustainability can be achieved by implementing CSR practices. Moreover, findings of our study show that the positive influence of CSR on business sustainability can be leveraged by innovation and social media. Nevertheless, such findings are not uniform across the covered countries in the research, leading to the role of country context.

An additional implication of this research is related to public authorities. Even though the implementation rate of CSR practices is low for entrepreneurial SMEs, public authorities and business associations can raise awareness by designing and put in place soft policies (Johnson, 2015). Hence, these institutions can foresee such activities that point to information of businesses about the benefits of CSR through different means including educational activities and delivering remotely relevant information. Business associations may play a crucial role in this regard. Aligning the activities of these institutions might increase the awareness among SMEs on leveraging from such activities of CSR.

There are at least two future avenues for research that this study failed to answer. Firstly, testing the proposed research model to other contexts, which would strengthen the overall conceptual framework outlined in this paper. Secondly, it is of interest to investigate the variation of the role of innovation and social media in the CSR–business sustainability relationship for SMEs operating in the Visegrad countries.

References


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