



# Business model innovation and its impact on corporate sustainability

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## ABSTRACT

This paper aims to examine the impact of Business Model Innovation on Corporate Sustainability in companies in the Western Balkan countries, particularly in Kosovo, Albania, and North Macedonia. The variables used for the purpose of this study include: Business Model Innovation (BMI), Managerial Capabilities (MC), Employee Empowerment and Decentralization (EED), Employee Training (ET), and Government Policies (GP) as independent variables and Government Policies (GP) as a dependent variable. This study has followed the quantitative methodology approach, using Partial Least Square - Structural Equation Modeling to test the research hypotheses and derive credible results. The questions of the questionnaire were borrowed from previous studies belonging to the same field and a total of 168 answers were collected through online distribution of questionnaires from mainly large corporations in three countries: Kosovo, Albania, and Macedonia.

The results have shown that there is a positive significant impact of Business Model Innovation on Corporate Sustainability. Findings support the main hypothesis of the research, that the high levels of Business Model Innovation impact high levels of Corporate Sustainability. Despite this, the findings indicated a positive relationship between employee training, employee empowerment and decentralization, government policies, and corporate sustainability. Besides these, the results also verified the other hypotheses of this research. Meanwhile, managerial skills negatively affected corporate sustainability, thus rejecting the next research hypothesis.

Due to the positive impact of Business Model Innovation on Corporate Sustainability, this paper suggests businesses in Kosovo, Albania and Macedonia should switch to digitalization of business operations. Throughout this paper, the benefits and advantages of Business Model to business sustainability will be further explored.

## 1. Introduction

Life in a world with scarce resources influenced the way of managing better life and work at the same time, and not only for humans, but also businesses have chosen the most innovative way of doing business, to save these resources for the same use by future generations. This situation has affected business activities and operations to change over the years. Previously, businesses performed their functions through the traditional way of operating. Compared to nowadays, the incorporation of information technology changed the concept of the business model from a traditional concept to the digital or innovative one. Innovation is considered to be one of the main preservers of social well-being, economic and environmental factors. Also, it encourages sustainable development, by reducing resource usage and increasing productivity.

The effort to survive and preserve a living environment for generations to come requires a permanent commitment from all participants in society.

The concept of sustainability, in general, is a new term that has recently started to be used and practiced with a special emphasis by many companies to create a competitive advantage in the market (Tsalis et al., 2020). Contemporary investigations in regard to sustainability, green economy, and ecosystem have been conducted to analyze the impact on organizational outcomes. Therefore, this study aims to highlight the role of Business Model Innovation on Corporate Sustainability across three Western Balkan countries in Kosovo, Albania, and North Macedonia.

Kosovo, Albania, and North Macedonia as neighboring countries arise a research interest in this field since all three countries have been

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signatories of the UN document for the achievement of 17 sustainable development objectives by 2030. The economic and political situation, contemporary changes, inflation, and changes in political agendas, have made these countries stagnate from time to time concerning sustainable development in general, but also the enterprises, most of them, refuse to make drastic changes in the way of how they have offered products and services so far (Gega, 2022). The focus of this research will be on finding the role of Business Model Innovation, how each element of Business Canvas affects corporate sustainability, across companies in Kosovo, Albania, and North Macedonia, with a special emphasis to contribute and stimulate the businesses to transform their actual Business Model into a Sustainable Business Model. This investigation will provide a comprehensive overview of the Business Model Innovation, Business Canvas elements, and Corporate Sustainability, and will provide answers to important concerns, such as:

- How do Kosovo, Albania, and North Macedonia businesses perceive sustainability?
- Are they oriented toward a Business Model Innovation?
- Do companies offer regular training for employees, to work more sustainably, taking into account first the economic, social, and environmental factors?
- Are specific government policies designed to ensure corporate sustainability?

Similar studies that were developed in this field, incorporated the variables, such as: Business Model Innovation, Corporate Sustainability, Corporate Social Responsibility, Green Technology Innovation, Sustainable Business Model Innovation, Sustainable Corporate Performance, and others, for instance, (Zhou et al., 2023; Oliveira-Dias et al., 2022; Chen, 2022; Ferlito and Faraci, 2022; Hall et al., 2022 and others). There exist studies that address the BMI using elements of Business Canvas. Therefore, this study, as mentioned above, focuses on the role played by business model innovation, respectively the elements of the business canvas, such as: (value proposition, customer segments, customer relationships, key activities, key resources, key partners, channels, cost structure, and revenue stream) in corporate sustainability.

A very recent investigation, which discusses the interactivity that Sustainable Business Model Innovation and Green Technology Innovation have in influencing Sustainable Corporate Performance, by Zhou et al., (2023), based on the panel data of 1468 Chinese manufacturing firms, from 2010 to 2020, concluded that the relationship between Business Model Innovation and Green Technology Innovation has a significant positive effect on Corporate Sustainable Performance. Sustainable Business Model has been identified as an explanatory variable in the model used in this study. However, it is not divided into other defining sub-variables, only items that respond as a whole to this Business Model have been used. Oliveira-Dias et al., (2022) followed a qualitative study, which analyzed dynamic capabilities, business model innovation, sustainable development of Brazilian startups in the logistic sector, in this case they came to the conclusion that dynamic capabilities, which include sensing, seizing and transforming are an internal driver of a company that influences Sustainable Business Model Innovation.

The independent variable of Business Model Innovation is also used in this research to achieve the main aim, but contrary to the previously mentioned studies, it defines this variable through the nine elements of the Business Canvas. It also uses independent variables such as: employee training, employee empowerment and decentralization, skills management, and government policies to explain their effect on the dependent variable, which in this study is Corporate Sustainability.

A review of research to compare the effect of Business Model Innovation on circular economy and sustainability has been followed by Pieroni et al., (2019), where 92 studies have been deliberate in-depth, including the conceptual models, tools, and methods used in this

research. Most of them are published in the Journal of Cleaner Production. Considering that it is a field of recent years, specifically less than 15 years, there is a lack of research of this nature, especially research with an empirical approach. These 92 studies that were reviewed in the study by Pieroni et al., (2019) were categorized into three divisions: sensing, which means identifying new opportunities to generate ideas for BM; seizing, which means continuous testing of new Business Model concepts; as well as transformation, which determines the transformation of the Traditional Business Model into an Innovative Business Model, respectively the suitability of organizations for the incorporation of new BMI ideas and concepts. Sustainability is a new and not sufficiently studied field, as it has been emphasized by many authors, where there is still a need for new studies, especially by empirically analyzing the data. This suggestion is also recommended by Carayannis et al., (2014), who have critically analyzed the literature concerning this area.

The contribution of this research will be threefold. First, a considerable number of studies have followed the qualitative approach, by using semi-structured interviews or critically analyzing the literature (Oliveira-Dias et al., 2022; Ferlito and Faraci, 2022; Jolink and Niesten, 2015; Geissdoerfer et al. 2018; Bakoğlu and Yildırım, 2016 and others), which were criticized for the immeasurability of the results, whereby the data, apart from not showing empirical results, cannot be generalized. For this reason, we employed the quantitative approach of data analysis, namely the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique, to address the problem of measurability. Second, in recent studies, for instance, (Zhou et al., 2023; Oliveira-Dias et al., 2022; Chen, 2022; Ferlito and Faraci, 2022; Hall et al., 2022) and other scientists, who have analyzed the link between Business Model Innovation and Corporate Sustainability have included only a few variables such as, Corporate Sustainability, Circular Economy, Sustainable Business, Sustainable Corporate Performance or Sustainable Development as a dependent variable, and Business Model Innovation, Organizational values, firm performance, dynamic capabilities, open innovation, green technology innovation as independent variables. We differ from them because we included nine elements of Business Canvas to define the Business Model Innovation, also, other independent variables, employee training, employee empowerment and decentralization, managerial capabilities, and government policies. Third, the lack of similar research is also evident in Albania, Kosovo, and North Macedonia. Research of this nature, with special emphasis on an innovative business model and corporate sustainability, has never been followed in these three countries. Thus, this research will be an added value by providing a significant practical contribution to the way businesses operate, digitalization of businesses, and it will fill a considerable gap in the regional literature and accordingly, will generally contribute to the global literature of this field.

This research is organized into four sections, first, the literature review will be deliberated, then an analysis of methodology, followed by findings, and discussions, and finally, conclusions and areas for further research.

## 2. Literature review

In this section, we have elaborated more on the meaning of Corporate Sustainability, Business Model Innovation, the elements of Business Canvas, managerial capabilities, employee training, employee empowerment and decentralization, and government policies. Also, the research hypotheses are highlighted based on the literature review.

### 2.1. Corporate sustainability

In a general understanding of Corporate Sustainability, Dyllick and Hockerts, (2002) describe it as a business process that aims to meet the needs of stakeholders such as, shareholders, employees, clients, etc. but at the same time, conserving the firm's resources to serve future

stakeholders in the same way. So, the main goal of the firm is to maintain and increase social, economic, and environmental capital, or in another sense, to maintain sustainability. Furthermore, [Schaltegger et al. \(2016\)](#) and recently, [\(Ferlito and Faraci, 2022\)](#) stated that businesses that aim to create sustainable development must create value that meets the requirements of all stakeholders and the natural environment.

Regarding Sustainable Business Model Innovation, a more advanced term that pertains to the present tense, [Boons and Lüdeke-Freund, \(2013\)](#) define it as the meaning of business and its environment, respectively the attitude of business activities and processes to adapt to the changes of the environment. To complete the preliminary definition is considered a notion defined by [Roome and Louche, \(2016\)](#) who determined that the Sustainable Business Model is a continuous development of the Business Model. In this way, in coordination with the development of business processes, Sustainable Development will be taken into consideration, defined in three pillars: economic, social, and environmental. However, other researchers (i.e. [Shakeel et al., 2020](#); [Nosratabadi et al., 2019](#) and others) also tried to fulfill in their way the meaning of the Sustainable Business Model, where everyone somehow reached the same definition, that the continuous development of the business should be built in coordination with Sustainable Development.

Improving business sustainability means applying changes to either the organizational structure or the current business model, incorporating innovation, and adapting business activities to new demands to achieve competitive advantages in the market ([Evans et al., 2017](#)). The lack of case studies of companies that have implemented corporate sustainability and changed the traditional business model to an innovative business model has resulted in many challenges for enterprises, in terms of following the steps of the sustainability implementation process. Among other things, when it comes to a sustainable business model has turned out to be of high complexity in terms of measuring the impacts of innovative sustainability and understanding the effects on all business activities.

## 2.2. Business model and business model innovation

The business model is a structure that shows up the company's operation procedure ([Clinton and Whisnant, 2019](#)). It is often considered to be also an organizational scheme to create and distribute value ([Teece, 2010](#)). However, as mentioned above there is no adequate and strict concept that is always used to define a Business Model. According to [Magretta, \(2002\)](#) determined that the Business Model concept is not the same as the strategy, this definition describes how different elements of the business fit together to create value and competitive advantage in the market. There are major changes that have happened in the business model during the last 10 years ([Zhou et al., 2023](#)). The main purpose, according to [Li et al., \(2018\)](#) stands beside the main emphasis on the service sector. According to [Ojasalo and Ojasalo \(2018\)](#), the business model crossed the boundary towards four main elements, such as value proposition, key processes, key resources, and profit formula. [Pieroni et al, \(2019\)](#) stated that those models suffer a lack of profundity, therefore, there was an extensive increase in the business model criteria to 9 main elements. Thus, [Ibarra et al., \(2019\)](#) specified that modern society has impacted this expansion, and the need for it was because the business concept has not remained the same, which has included the usage of more advanced technology. Those elements include consumer segmentation, distribution, value proposition, partners, consumer relationships, and key activities based on the study by [Sparviero, \(2019\)](#) which have not been considered in the past. All of those elements' aim is to bring value.

The advancement of technology and the incorporation in the Business Model, or more exactly in the business operations, influenced the concept of the Business Model to be converted into a Business Model Innovation. The digitalization of Business Canvas elements will have an impact in the concept of the Business Model. The transformation, acquisition and diversification into new business models is defined as

Business Model Innovation ([Geissdoerfer, 2018](#)). Additionally, [Chesbrough, \(2007\)](#) defined Business Model Innovation as a business transformation process, moving from the basic concept of doing business to an advanced concept. Business Model Innovation could also be presented as: Start-up, Business Model Innovation, Business Model Diversification, and Business model acquisition.

Yet, in another dimension of the interconnectedness and importance of Business Model Innovation in several business activities, whether in the organizational structure and culture, decentralization and delegation of tasks to subordinates, or more specifically in corporate sustainability, numerous topics have been settled in this aspect. [Geissdoerfer et al., \(2017\)](#) in their study analyzed the link between Business Model Innovation and Corporate Sustainability, concluding that the interconnection of these two variables has resulted in the transformation of the Business Model Innovation concept into a new concept: Sustainable Business Model Innovation. A study by [Chen \(2022\)](#) has been conducted from a similar perspective, as 218 respondents working in SMEs in Taiwan were interviewed through a quantitative approach methodology. The findings indicated that SMEs have an important role in corporate sustainability. In conclusion, relying on the previous studies as mentioned in the introduction chapter, for instance ([Zhou et al., 2023](#); [Oliveira-Dias et al., 2022](#); [Chen, 2022](#); [Ferlito and Faraci, 2022](#); [Hall et al., 2022](#) and others) who have conducted similar studies concluded that the causal link between BMI and CS is in a positive proportion. This results in deriving the first hypothesis of the paper:

- **H<sub>1</sub>:** Businesses indicate high levels of business model innovation they also indicate high levels of corporate sustainability.

## 2.3. Business Model Canvas

Numerous authors tried to define the term Business Model, however, [Osterwalder et al., \(2011\)](#) presented this concept in a 9-element conceptual figure. ([Fig. 1.](#)). Canvas reflects a conceptual representation of business operations and how these elements fit together. Since the introduction of this tool, many companies have used it to describe their operation strategy, for instance, P&G, Nestle, etc. Canvas helped these companies change their aspirations, from product thinking to Business Model thinking, to increase their profits.

[Osterwalder et al., \(2011\)](#) among others, have examined the elements of the Business Model Canvas in terms of sustainability. These 9 elements, according to the above picture, are key partnerships, key resources, key activities, value proposition, customer relationships, channels, customer segments, cost structure, and revenue stream.

### 2.3.1. Value proposition

The value proposition is understood as the provision of products and services by companies, in order to meet the needs of customers ([Osterwalder et al., 2011](#)). They have examined the elements of the Business Model Canvas in terms of sustainability. These 9 elements, presented in the above picture, are key partnerships, key resources, key activities, value proposition, customer relationships, channels, customer segments, cost structure, and revenue stream.

Recent emphasis has been placed on the sustainable value proposition, which is the primary and most important part of the sustainable business model ([Bocken et al., 2014](#)). A sustainable value proposition is the core of sustainable business model innovation because it aims to create shared value for all stakeholders, including shareholders, employees, customers, etc. In conclusion, the innovative value proposition of companies, which aims to create and distribute value in the most innovative way with contemporary techniques, is shown to have a positive effect on corporate sustainability. A similar opinion and determination are also revealed by ([Ferlito and Faraci, 2022](#); [Tyl et al., 2015](#); [Keskin et al., 2013](#)).

Key Partners (Who are our key partners/suppliers?)	Key Activities (What key activities do our value propositions require?)	Value Propositions (What value do we deliver to the customer?)	Customer Relationships (What type of relationship does each of our customer segments expect us to establish and maintain with them?)	Customer Segments (For whom are we creating value?)
	Key Resources (What key resources do our value propositions require?)		Channels (Through which channels do our customer segments want to be reached?)	
	Cost Structure (What are the most important costs inherent in our business model?)		Revenue Streams (For what value are our customers really willing to pay?)	

Fig. 1. Business Model Canvas.

2.3.2. Customer segments

Customer Segments means the type of customers, the company intends to offer products or services to (Muhtaroglu et al., 2013). The segmentation and targeting of customers vary depending on the company’s field of operation. For instance, a company that is oriented towards the production of a specific product has the segmentation of customers from another company providing services. The incorporation of information technology in business activity impacts the way consumers are segmented for products and services of companies. At the same time, information technology according to Mostaghel et al., (2022) has also influenced the attractiveness of consumer segmentation, which has a positive effect on the aspect of corporate sustainability.

2.3.3. Channels

By channels we mean the connection between the company and the consumers, specifically the way in which companies distribute products or services to the final consumer. (Muhtaroglu et al., 2013). Information technology has played an important role in recent years in all parts of the business, including facilitating the distribution of products or services from companies to end consumers. Through social networks, the Internet, consumers see and choose the products and services they need. Thus, many contemporary companies have moved towards digitalization of offering products, but especially services have become easier virtually. The digitalization of distribution channels has also affected sustainability (Frick and Ali, 2013), because at the same time, in addition to saving time, natural resources have been preserved for more effective usability.

2.3.4. Customer relationships

The way a company builds relationships with customers and maintains them is defined as customer relationships, Muhtaroglu et al., (2013). This is often considered to be the most important part of a company because many companies or their massive part depend on consumers and their demand. The digitalization of services or products for consumers, as mentioned in the article by Wahab, (2010) has influenced the company to be closer to consumers, and consumers, on the other hand, to know more about the products or services they choose, because they receive feedback from previous customers. This way of automation and digitalization has impacted the less time-consuming, and at the same time, it has affected environmental aspects, being considered as a more sustainable and environmentally-friendly process.

2.3.5. Revenue stream

Revenue stream means the amount of money returned to the company through the provision of a value proposition (Muhtaroglu et al., 2013). Therefore, through the value that the company offers to consumers, it generates revenue. The way of generating income is different for different companies, as defined by Teece, (2010) as the case studies of how musician stars generate income, by indicating that the revenues are dependent on the marketplace, the competencies, talent, and

preferences of an artist, as well as by the market’s perceptions and expectations. An important aspect of revenue generation, as mentioned by Teece, (2010) is through the sales and deliveries of innovative products and services will positively impact in terms of corporate sustainability.

2.3.6. Key resources

Resources are essential inputs and elements that a company needs to propose value or to offer and sell its products and services (Muhtaroglu et al., 2013). Tangible and intangible resources as well as people and managerial capabilities are required for the value proposition. Human resources are the most valuable resources of the company, so that their experience, their ideas for the development of products and services, their creativity, influence companies to create competitive advantages in the market (Loučanová et al., 2022). The more innovative the resources used by the company, and the more effective they are, the more it is confirmed to have an impact in terms of business sustainability.

2.3.7. Key activities

Key activities are those actions that the company takes to distribute value to customers. According to Teece, (2010) it is deliberated that the more innovative activities (i.e. product or service production and delivery) of the company are, the more they will influence corporate sustainability and the better the company will have a reputation towards customers.

2.3.8. Key partnerships

Many companies may not be able to offer all services to consumers on their own. For this reason, they need collaborations with other companies to provide full value to customers, in order to reduce additional costs, generally meet the overall concept, and achieve the company’s goals (Amanullah et al., 2015).

2.3.9. Cost structure

Cost structure describes the costs that companies incur during the delivery of value to customers and at the same time during the establishment of relationships with strategic partners and marketing for the company’s products and services. The company is affected by two main types of costs: fixed costs, which are those costs that regardless of the level of production remain the same, such as, for example, the cost of rent, and the other type of costs are variable costs, which vary in relation to production volume.

Previous studies, particularly the study by (Burlea-Schiopoiu and Mihai, 2019) have shown a close link between cost minimization, and achieving economies of scale with corporate sustainability, showing how more sustainable the company is in value delivery, the fewer costs will occur.

2.4. Employee training and sustainability

“Training” alludes to a deliberate way to deal with learning and advancement to enhance individual, group, and corporate effectiveness

(Elsafy and Oraby, 2022). Less than 5% of all programs of training are evaluated regarding their benefits that cause advantages to the organization (Swanson, 2008). The picture changes among organizations in how they perceive the sense of operation regarding training.

The importance of training in a work environment is necessary, along with many studies, it is worth mentioning the studies by Rao (2010) and Nwibere, (2014) who studied with special emphasis the training for workers. The researchers have grouped trainings into three categories including Orientation, Skills and Refresher Training. Orientation training is offered on the occasion of new hires in the company, in order to explain a general view of the culture and operation of companies. The other type of training is Skills Training, which offers training on problem-solving, decision-making, technical skills improvement, time management, public speaking, team building, etc. These trainings contribute to the perfection of daily tasks about occasional challenges that appear to employees during the exercise of duty. Whereas, the last category of training classification is Refresher Training, which is offered in case of any drastic change in technology, change of business model, or important strategic changes that occur in the company, in order for employees to be informed in time with the new way of performing tasks, and in this way, not to encounter any resistant to change.

Furthermore, regarding the relationship between corporate sustainability and employee training, the role that training plays in achieving corporate sustainability has been researched by Nnabuife et al., (2015). Their study at Bayelsa State Broadcasting investigates the relationship between skills training and organizational sustainability, whereby the results reveal that the skills training of employees positively influences the organizational sustainability. Most importantly, these results were as well as supported by (Sumarsi, 2020; Srouf et al., 2020; Singh et al., 2020; Patil and Chettarjee, 2014; Afzal and Lim, 2013 and others) who investigated particularly eco training as a very important sustainability practice, concluded that the employees should be more educated related to sustainability because, in this way, they will contribute on high levels of organizations' environmentally friendly activities or on high levels of corporate sustainability performance.

The second hypothesis of the study, which determines the relationship between employee training and corporate sustainability, is formulated as follows:

- **H<sub>2</sub>**: Companies that regularly train employees determine high levels of corporate sustainability.

### 2.5. Managerial competencies and sustainability

An important and very challenging question that has circulated about how to do business is: How important is investing in intangible resources? How important is the investment in Human Capital, in their training and development in the way of doing things?

Recently, this concept has evolved and more attention has been paid to the concept of reconceptualization, where many companies in addition to investing in visible and tangible resources invest in their human resources, more precisely in attracting and recruiting compatible staff and experts in the field. In this context, managerial skills are inevitable for achieving organizational performance and at the same time, positively influence the aspect of corporate sustainability, as emphasized in the study by (Jiang et al., 2019). 482 SMEs in Pakistan have been chosen to be investigated, 384 owners/managers were interviewed and the data were analyzed through Structural Equation Modeling. Jing et al., (2019) concluded that Intellectual Capital significantly affects the Sustainability Performance of companies, respectively the more experienced the managers are, the more pronounced is corporate sustainability.

Dynamic managerial capabilities, which are characterized as an important source of competitive advantages in the market, are also the main drivers of improving the performance sustainability (economic, social, and environmental objectives) of SMEs, according to a study by Eikelenboom and de Jong, (2019). There have been collected 1458

questionnaires including 333 Dutch-owned SME participants and only 297 usable observations. This study has sparked debates about the viability of SMEs and their relationship with dynamic managerial capabilities. In this case, different hypotheses were addressed, and as the final result was that the external dynamic capabilities have an important direct relationship with the three pillars of sustainable development of small and medium enterprises, respectively the social, economic, and environmental aspects.

According to Peterkova and Franek, (2018), there was a pilot test conducted in 2017 which included questionnaires for SMEs in order to observe the readiness and the support from the top management toward innovation. Top management, according to Arzubagi et al (2019), has a direct impact on business innovation improvement and enhancement. Thus, there is a need to incorporate organizational learning activities with innovative flexibilities. Innovation also has brought attention to Transformational leadership, which according to Steele (2018), is one of the factors that influence innovation. Thus, it is important for companies to become aware of the cognitive work processes which can improve organizational learning. From systematic perception, Rajapathirana and Huj (2019) distinguish the fact that there is a need for a relationship between organizational external knowledge and implied activities. Therefore, many leaders divide the activities into teams and individuals to embrace the balance between the learning dynamics. Also, in these studies, it is concluded that the high levels of managerial capabilities indicated high levels of corporate sustainability performance.

Thus, a connection between managerial capabilities and corporate sustainability is the third hypothesis of this paper:

- **H<sub>3</sub>**: Companies that prove high levels of managerial capabilities also prove high levels of corporate sustainability.

### 2.6. Employee empowerment and decentralization and the relationship with sustainability

The concept that is treated in terms of sustainability, in the modern era of literature is: "Green Employee Empowerment". Concerning this issue and addressing this topic, Tariq et al., (2016) suggested that employees should be empowered, decentralized, and delegated the decision-making process, including them in different tasks. There is evidence that companies that pay attention to employee engagement proved higher levels of corporate sustainability. The literature also supports the fact that employees should be encouraged and empowered to pursue green functions (Ali and Ahmad, 2009).

A very important research in this field by Jamal et al., (2021) examines the impact of Green Human Resources Management practices on Corporate Sustainability. In the framework of GHRM practices, the following were examined: green recruitment and selection, green pay and rewards, green employee involvement, and green employee training. The sample size was 200, where the data were collected from the companies of the largest industrial sectors in Pakistan. Through the use of Partial Least Squares - Structural Equation Modeling, the results proved a positive impact that GRHM had on Corporate Sustainability. Through this evidence, the impact of green employee involvement was examined with particular emphasis, which in a way included employee empowerment and decentralization, it was determined that the more the employees are involved and empowered in terms of making decisions within the framework of the company, the more they will feel responsible for building corporate sustainability.

Relying on the literature discussed above, an overall conclusion has been drawn on this issue, thus linking employee empowerment and decentralization with corporate sustainability, it is concluded that they have a close relationship between them, given that the more employees are decentralized, empowered, encouraged, and committed, the more positive impact they will have on sustainability, whereby is derived the following research hypothesis:

- **H<sub>4</sub>**: Companies that prove high levels of employee empowerment and decentralization also prove high levels of corporate sustainability.

2.7. The impact of government policies on corporate sustainability

A study by [Vieira Nunhes et al., \(2021\)](#), where the main goal was to identify and analyze the influence of the Scientific-Technical Scenario on Corporate Sustainability, whereby linking different Universities, Governments, and Organizations towards achieving the transformation of the way of their operation, returning to a stable environment. According to the study of these authors, it is pointed out that the significant influence that the governments of different countries have in order to create supportive policies of sustainability is necessary. Thus, the preservation of resources requires government support. [Song et al., \(2022\)](#) researched the effect of Government Subsidies to create Sustainable Innovation of University-Industry collaboration. Through this study, they explained that government subsidy policies positively affect sustainability efforts, both for companies and for universities and research institutes. These subsidies enable companies to offer more innovative products, which in turn create corporate sustainability. On the other hand, Universities and research institutes through government subsidies improve R&D related to sustainability.

Government subsidies, among others, play a key role in the transformation of the economy towards a more digitized, circulating and contemporary economy ([Kazancoglu et al., 2021](#)). The suggestion that has emerged from this study is to be drafting government policies to preserve resources for the same use by future generations (i.e. using or producing sustainable products, saving electricity, reducing paperwork, etc.), which lead to achieving sustainability. These policies and regulations should be disseminated across companies so that they adjust their business activities in accordance with these policies' framework for achieving sustainability.

Accordingly, relying on the literature discussed in this regard, the last hypothesis of this research is as follows:

- **H<sub>5</sub>**: Government policies impact the improvement of corporate sustainability.

3. Research methodology and data

In this section, we develop an empirical model to test the research hypotheses provided in the previous section, more importantly, to achieve the main aim of the study by identifying the role of Business Model Innovation on Corporate Sustainability.

The dependent and independent variables used in this study were: *Business Model Innovation (BMI)* (which was measured by nine elements of Business Canvas: *value proposition (VP)*, *customer segments (CS)*, *key resources (KR)*, *key activities (KA)*, *key partnerships (KP)*, *customer relationships (CR)*, *channels (CH)*, *cost structure (COST)*, and *revenue stream (REVENUE)*), *employee training (ET)*, *employee empowerment and decentralization (EED)*, *managerial capabilities (MC)*, and *government policies (GP)* as Independent Variables and *Corporate Sustainability (CS)* as a Dependent Variable.

Contrary to previous studies, this research used the Partial Least Square – Structural Equation Modelling (PLS-SEM) approach, which has been used mainly in the field of psychology, sociology, marketing, and education, but has not been applied much in the field of economics, therefore there is still lack of suitability in this field [Saarani and Shahadan, \(2012\)](#). [Lei and Wu \(2007\)](#) and later, [Williams et al., \(2009\)](#) defined Structural Equation Modeling as a multivariate analysis technique applied to evaluate the consistency of hypothesized models and collected samples. [Astrachan et al., \(2014\)](#) stated that this model, Structural Equation Modeling, consists of two techniques Covariance-based equation modeling (CB-SEM) and Partial Least Squares Structural Equation Modeling (PLS-SEM). Comparing these two techniques, it

turns out that PLS-SEM is more efficient, flexible, and useful for testing the relationship between variables because this technique is applied to any sample size and it allows the definition of hypotheses even when there are complex variables to be tested in the model.

3.1. Instrument

The questionnaire consisted of 32 items. The first six questions were descriptive questions, nominal data, and the remaining questions were designed using the 5-point of "Likert" scale, where 1 - represents "Strongly disagree", 2 - represents "Disagree", 3 - "Neutral", 4 represents "Agree" and 5 - represents "Strongly agree".

Business Model Innovation (BMI) was measured using a 10-item scale from [Pederson et al., \(2016\)](#). The scale covers the nine elements of Business Canvas: value proposition, customer segments, key resources, key activities, key partnerships, customer relationships, channels, cost structure, and revenue stream. Also, the items related to Corporate Sustainability were borrowed by [Pederson et al., \(2016\)](#) and [Fernando and Wah, \(2017\)](#). Whereas, the items used to measure the Managerial Competencies we adapted by [Eikelenboom and Jong, \(2019\)](#).

To measure the variables of employee training, employee empowerment and decentralization, and government policies the questions related to this study are adapted.

3.2. Data collection and sampling

The data are collected by distributing the virtual questionnaires to different companies (with a special emphasis on the large companies) across three Western Balkan countries, such as Kosovo, Albania, and North Macedonia. The sample size was 168 respondents.

[Table 1](#) shows the variables included in the research, whereas Corporate Sustainability is measured as a dependent variable and Business Model Innovation, consisting of nine elements of Business Canvas is measured as an independent variable. The other independent variables are Employee training, Employee empowerment and decentralization, Managerial Capabilities, and Government policies.

By using the random sampling technique 168 questionnaires are virtually distributed through google forms to different companies in Kosovo, Albania, and North Macedonia.

[Table 2](#) below represents descriptive statistics or socio-demographic factors of the investigation. The frequencies of females and males are 109 females or in percentage 64.9%, while the frequencies of males are 59 or in percentage 35.1%. The job positions of survey participants are 102 Employees (60.7%), 33 Managers (19.6%), and 33 Directors (19.6%). Participants in terms of the company size where they work 27 of them or 16.1% belonged to Microenterprises (0–10 employees), 49, or 29.2% answered that they work in Small enterprises (10–49 employees), 31 or 18.5% of them were workers of Medium enterprise (50–249 employees) and the remaining 61 or 36.3% of participants indicated that they work in Large enterprise (more than 250 employees).

Concerning the Business type, 48 or 28.6% of participants answered that the company where they work is a family business and 120, or 71.4% of them indicated that they work in a non-family business. 124 or

**Table 1**  
Variables included in the investigation.

Variables	Number of Items
<b>Dependent Variable</b>	
Corporate Sustainability (CS)	4
<b>Independent Variables</b>	
Business Model Innovation (BMI)	10
Employee training (ET)	3
Employee empowerment and decentralization (EED)	4
Managerial capabilities (MC)	3
Government policies (GP)	2

**Table 2**  
Socio-Demographic Factors of study (N = 168).

Socio-Demographic Factors	Frequency	Proportion
<b>Gender</b>		
Female	109	64.9%
Male	59	35.1%
<b>Job position in the company</b>		
Director	33	19.6%
Manager	33	19.6%
Employee	102	60.7%
<b>Company size</b>		
Microenterprise (0–10 employees)	27	16.1%
Small enterprise (10–49 employees)	49	29.2%
Medium enterprise (50–249 employees)	31	18.5%
Large enterprise (more than 250 employees)	61	36.3%
<b>Business type</b>		
Family business	48	28.6%
Non-family business	120	71.4%
<b>Country</b>		
Kosovo	124	73.8%
North Macedonia	17	10.1%
Albania	6	3.6%
Business operates in three countries and more	21	12.5%
<b>Business sector</b>		
Service sector	126	75%
Manufacturing sector	12	7.1%
Commercial sector	30	17.9%

73.8% of survey participants were from Kosovo companies, 17 or 10.1% of them were employees in North Macedonia companies, 6 of them, or in percentage 6.1% were Albania companies' workers, and 21 or 12.5% of employees that participated in the survey indicated that they work in a business that operates in three countries and more. Participants of the survey work in different business sectors, and according to the answers, 126 or 75% worked in the Service sector, 12 or 7.1% of them worked in the Manufacturing sector, and 30, or 17.9% worked in the Commercial sector.

**3.3. Results**

Measurements of models and data analyzed have been performed

**Table 3**  
Reliability test.

Constructs	Items	Loadings	Cronbach's alpha	Composite Reliability	Rho <sub>a</sub>	AVE
				Rho <sub>c</sub>		
Business Model Innovation	Q1_BMI_VP	0.695	0.892	0.912	0.898	0.504
	Q2_BMI_CS	0.653				
	Q3_BMI_KR	0.623				
	Q4_BMI_KA	0.694				
	Q5_BMI_KP	0.685				
	Q6_BMI_CR	0.717				
	Q7_BMI_CH	0.597				
	Q8_BMI_COST	0.611				
	Q9_BMI_REVENUE	0.627				
	Q10_BMI	0.408				
Corporate Sustainability	Q11_CS	0.709	0.829	0.830	0.838	0.55
	Q12_CS	0.662				
	Q13_CS	0.829				
	Q14_CS	0.762				
	Q15_ET	0.916				
Employee training	Q16_ET	0.867	0.929	0.929	0.930	0.81
	Q17_ET	0.922				
	Q18_MC	0.631				
Managerial Capabilities	Q19_MC	0.577	0.592	0.582	0.591	0.52
	Q20_MC	0.479				
	Q21_EED	0.769				
Employee empowerment and decentralization	Q22_EED	0.895	0.866	0.866	0.875	0.62
	Q23_EED	0.800				
	Q24_EED	0.670				
	Q25_GP	0.793				
Government policies	Q26_GP	0.867	0.815	0.817	0.819	0.69

using SmartPLS4 and SPSS software. Root mean score residual (RMSR) is used to test the fit indices for the global fit as proposed by Nemes et al. (2006). Since the value is 0.08, which is between 0.05 and 0.08 represents a good fit. SPSS software is used to run Harman's single-factor test in order to avoid the common factor bias problem. The value is 34% and since it is below 50% of the threshold the value is accepted as it is no multicollinearity problem as supported by Kock, (2015). Also, the variables represented the VIF values under 3.3 which meet the criteria for no multicollinearity problems.

**3.3.1. Reliability analysis**

Table 3 below represents the reliability and internal consistency tests for constructs. First, the reliability of the constructs is measured based on the value of the outer loadings. According to Hulland, (1999), the constructs with an outer loading lower than 0.40 should be removed because it might impact the relationship of the constructs. In this case, all the constructs meet the criteria of the above 0.40 outer loading value, therefore no construct is removed by the study. This indicates a substantial internal consistency and convergent validity of the study. Also, Cronbach's Alpha  $\alpha$  represents the internal reliability of the constructs. The values should be between 0.70 and 0.95. In this case, all the constructs represent good internal reliability except the Managerial Capabilities. True reliability is represented by Rho<sub>a</sub>, which lies between Cronbach's alpha and Composite Reliability Rho<sub>c</sub> because Cronbach's alpha is very conservative and Rho<sub>c</sub> is very liberal. For this reason, Rho<sub>a</sub> presents the true values of reliability, that in this case, all constructs are reliable except Managerial Capabilities.

**3.3.2. Convergent validity**

The average variance extracted (AVE) assess the convergent validity of the scale constructs as stated by Hair et al. (2019). They also mentioned that the threshold value for AVE should be greater than 0.50, which means all the constructs met the criteria as presented in Table 3. This means that the constructs had explained 50% of the variance of its indicators.

3.3.3. Discriminant validity

Henseler’s “heterotraitmonotrait ratio of correlations” (HTMT) was run to analyze the discriminant validity of the constructs, proposed by Henseler et al. (2015). Recently, many studies prefer HTMT due to its efficiency of use and superior performance to evaluate discriminant validity in PLS-SEM. The results (Table 4.) showed that the values are below the threshold, which means that the constructs meet the criteria of HTMT and can be proceeded for further analysis.

3.3.4. The structural model

Fig. 2 presents the structural model or conceptual view of the causal relationship between the variables, which presents the flow of hypotheses. The figures indicate the path coefficients and coefficient of determination, R<sup>2</sup> value, that determine how well the variables explain the hypotheses.

The R<sup>2</sup> value shows the relationship between the independent variables and the dependent variable (Corporate Sustainability), thus how the dependent variable is explained by the independent variables (Cohen, 1998). According to the data in Fig. 2, it is shown that the R<sup>2</sup> value is 0.787, which means that Corporate Sustainability is explained by almost 80% of the independent variables that are used in this model, which is a very satisfactory value to explain the model.

After the analysis of the R<sup>2</sup> value, for the explainability between the variables, the evaluation of the hypotheses was conducted using beta coefficients, f<sup>2</sup>, t values, and p values.

Therefore, all five hypotheses have been accepted according to the results in the Table 5, particularly following the results of the p-value, t-value, and path coefficient. In this paper, we used the statistical methods (p-value, t-value, and path coefficients) as suggested by Zhao et al., (2010) and Nitzl et al., (2016) to examine the direct impacts. Findings indicate that Business Model Innovation has a direct impact on Corporate Sustainability, H<sub>1</sub> (t-value = 0.432, p-value = 0.000), Employee Training directly impacts Corporate Sustainability, H<sub>2</sub> (t-value = 0.764, p-value = 0.000), Managerial Capabilities have an indirect impact on Corporate Sustainability, H<sub>3</sub> (t-value = -0.523, p-value = 0.000), Employee empowerment and decentralization directly impact Corporate Sustainability, H<sub>4</sub> (t-value = 0.524, p-value = 0.000), and also Government policies have a direct impact on Corporate Sustainability, H<sub>5</sub> (t-value = 0.623, p-value = 0.000).

4. Discussions

The relationship between Business Model Innovation and Corporate Sustainability was also discussed in the previous sections. The authors (i. e. Zhou et al., 2023; Oliveira-Dias et al., 2022; Chen, 2022; Ferlito and Faraci, 2022; Hall et al., 2022 and others) examined the relationship between these two aspects and these studies, some through a critical analysis of the literature and some through the use of empirical analysis, concluded that the relationship between BMI and CS is positive, which means that the more innovative the business model of an enterprise is, the higher is the value of corporate sustainability. Even this study, the results in the Table 5 specified that first hypothesis (H<sub>1</sub>) was accepted and the main objective of this study was achieved, as the results showed that Business Model Innovation has a positive impact on Corporate Sustainability. Through this study, we shed light on the literature of

Table 4  
Discriminant validity.

Constructs	BMI	CS	EED	ET	GP	MC
BMI						
CS	0.51					
EED	0.322	0.616				
ET	0.496	0.766	0.646			
GP	0.445	0.754	0.628	0.738		
MC	0.643	0.729	0.659	0.814	0.629	

previous studies, defining the Business Model Innovation variable through the elements of the Business Canvas.

Employee training is another additional explanatory variable that is used in this research to determine Corporate Sustainability, which is determined as a positive significant impact between these two variables, and accordingly supporting the second hypothesis of this research (H<sub>2</sub>) as shown in the Table 5. Findings indicated that the employees should be trained in terms of sustainable practices, sustainable development, sustainable business model, circular business, etc., in order to contribute on the improvement of Corporate Sustainability Performance. These results are previously supported by Begum et al., (2022) and Çop et al., (2021), who stated that Eco Training, as they summarized the concept of training in terms of sustainable development, affects employees to be more engaged and more committed to contribute to environmentally friendly activities within the framework of the company. Companies, on the other hand, benefit from the training of employees in the sustainable use of resources because they affect the overall sustainability of the corporation.

Findings in the Table 5 indicate that Managerial capabilities have an indirect significant impact on Corporate Sustainability, hence rejecting the null hypothesis. The research results are contrary to the findings of previous studies. For instance, Peterkova and Franek, (2018) and Arzubiaga et al (2019) in their studies suggested that top management has a positive influence on the direction of the company towards the achievement of sustainable development objectives, respectively to perform environmentally friendly activities.

Table 5 shows that Employee empowerment and decentralization positively impact Corporate Sustainability, hence accepting the fourth research hypothesis (H<sub>4</sub>). The results are also supported by Jamal et al., (2021) who stated that the more the employees are empowered, decentralized, committed, and engaged in the company’s decision-making, the higher their responsibility is in the achievement of sustainable development goals and corporate sustainability performance.

The explanatory variable of Government Policy and its positive direct impact on Corporate Sustainability is the fifth hypothesis that is accepted in this research (H<sub>5</sub>). The results were also supported by previous studies, for instance, Song et al., (2022) and Kazancoglu et al., (2021) through their investigations in terms of government policies (including subsidies and other policies) and their impact on improving the sustainability of companies, determined that government policies have played an important positive role in improving business operations, helping companies to offer more innovative products, which consequently affect sustainability. Meanwhile, Song et al., (2022) in addition to companies, also examined the impact of these government policies on Universities and research institutions, as well as their cooperation with industry, concluding that Universities and research institutions benefit from these policies, improving the aspect of R&D in terms of sustainability.

5. Conclusions

Using the Partial Least Square - Structural Equation Modeling (PLS-SEM) model, through SmartPLS4 and SPSS software, this research empirically studies the role of Business Model Innovation in Corporate Sustainability. This research area is recently been discussed in many studies, that suggested a positive impact of BMI on CS (Zhou et al., 2023; Oliveira-Dias et al., 2022; Chen, 2022; Ferlito and Faraci, 2022; Hall et al., 2022 and others). Questionnaires in a virtual way are distributed in companies in Kosovo, Albania, and North Macedonia, using a random sampling technique and collected 168 responses.

The explanatory variables that have been used in this research were: Business Model Innovation, determined by nine elements of Business Canvas (value proposition, key activities, key resources, customer segments, customer relationships, key partnerships, channels, cost structure and revenue stream), Employee training, Employee empowerment and decentralization, Managerial Capabilities and Government Policies.



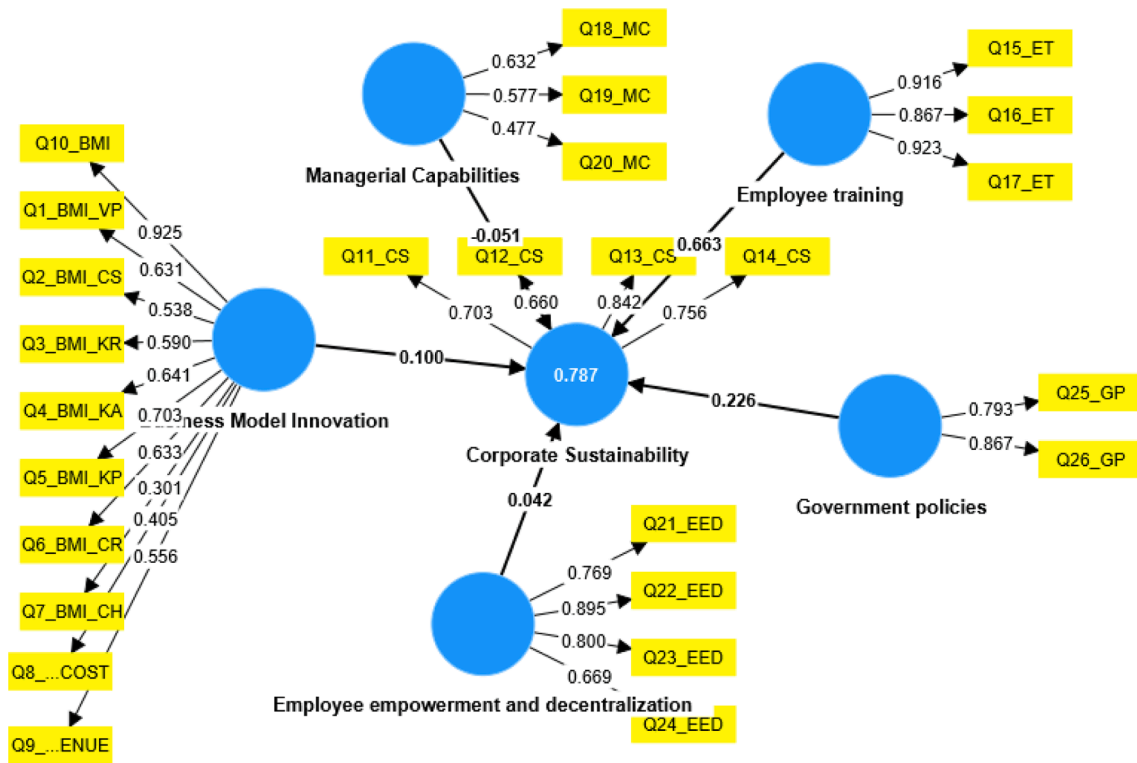


Fig. 2. PLS-SEM model (path coefficients and R<sup>2</sup> value).

Table 5 Hypothesis testing.

Hypothesis	H1	H2	H3	H4	H5
Path relationships	BMI CS	ET CS	MC CS	EED CS	GP CS
Path coefficient (β)	0.100	0.663	(0.051)	0.042	0.226
f <sup>2</sup>	0.026	0.506	0.003	0.004	0.099
t Values	0.432**	0.764**	(0.523**)	0.524**	0.623**
p Values	0.000	0.000	0.000	0.000	0.000
Result	Supported	Supported	Supported	Supported	Supported

Also, Corporate Sustainability is examined as a dependent variable.

The findings of this investigation accepted the five research hypotheses. First, a positive relationship between BMI and CS is indicated, the results show that high levels of business model innovation led to high levels of corporate sustainability (Ferlito and Faraci 2022). The second hypothesis is also accepted, where Employee training positively impacted Corporate Sustainability, and the results were supported by Begum et al., (2021) and Çop et al., (2022). Employee empowerment and decentralization also positively impacted Corporate Sustainability, accepting the following research hypothesis, and is supported by previous studies. The following research hypothesis Government policies positively impact Corporate Sustainability, is also accepted by the research findings. Previous studies, Song et al., (2022) and Kazancoglu et al., (2021) supported these results by indicating that government subsidies enable companies to improve their environmentally friendly activities. Meanwhile, Managerial Capabilities have an indirect impact on Corporate Sustainability, therefore rejecting the null hypothesis. Previous studies by Peterkova and Franek, (2018) and Arzubiaga et al (2019) do not support these results, because they stated that top management is an internal driver to sustainability.

This study sheds light on the literature related to this field, compared to the studies mentioned in this paper, it defines the Business Model Innovation variable through the elements of the Business Canvas. Also, other explanatory variables (i.e. employee training, employee empowerment and decentralization, managerial capabilities and government

policies) are used in this study. Another contribution is due to the fact that such a study has not been followed in Kosovo, Albania, and North Macedonia, and in this way, it will fill an important gap in the regional but also global literature. Practical contribution is related to the last hypothesis of this study, since a positive impact of government policies in achieving corporate sustainability has been proven, where the three study countries are called upon to improve government policies, to create new policies that support companies to improve business activities towards the achievement of sustainability objectives.

Lastly, the answers to the questions raised in the introduction section are summarized in the following paragraph. This research, as an unstudied field, especially in Kosovo, Albania, and North Macedonia, however, taking into account the findings, and the answers of the respondents, it can be said that the businesses of these countries have recently started to pay more attention to the aspect of sustainability, and have started to be more oriented into Business Model Innovation. Some institutions organize training that is held in terms of sustainability and the education of their employees regarding this issue, although not in an intensive way. Meanwhile, governments, knowing that they are signatories to the UN agreement to achieve 17 sustainable development goals by 2030, are taking steps forward, although not enough, by subsidizing green businesses, green energy or renewable energy, circular economy, etc.

### 5.1. Limitations and areas for future research

This research has followed a quantitative approach to data collection, distributing the questionnaire in a virtual way (through google forms) in the Western Balkan countries (Albania, Kosovo, and North Macedonia), from which the first limitation derives. The respondents of the study were mainly employees of Kosovar companies and only a few of them were from Albania and North Macedonia, leaving a gap to be filled by future research, to increase the sample and future studies to include more Albania and North Macedonia in their studies. A comparison in this regard between the three countries would be an added value for further investigations. Another limitation that was identified in this research is that most of the respondents were working in the service sector and only a few were employees in the production and commercial sectors. Future research should try to include other sectors as well. A recommendation that can be derived from this research is to do similar research, with special emphasis on the perception of green business in family and non-family businesses. Organizational culture and firm performance could also be included as explanatory variables in future studies.

### CRedit authorship contribution statement

**Kaltrina Kajtazi:** Data creation, Writing the original draft, Methodology, Supervision. **Gadaf Rexhepi:** Writing the original draft, Methodology, Supervision. **Arshian Sharif:** Writing the original draft, Methodology, Supervision. **Ilknur Ozturk:** Writing the original draft, Methodology, Supervision.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Data availability

Data will be made available on request.

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