B2B sustainable ecosystems as support the “three-legged stool” in emerging countries: SMEs’ stakeholder relations in Ardakan (Iran)

emerald PUBLISHING

Kybe

B2B Sustainable Ecosystems as support the 'three-legged stool' in emerging countries: SMEs' stakeholder relations in Ardakan (Iran)

Journal:	*Kybernetes*
Manuscript ID	K-05-2024-1358.R3
Manuscript Type:	Research Paper
Keywords:	Sustainability, Corporate Social Responsibility, Business systems

Table 1. Summary of questionnaire sections

Sections	Dimension	Measured items	Number of questions
Section I	Demographic characteristics	Gender Age Education Work experience	4
Section II	SME classification	Number of staff Primary activity of SME Business organized	3
Section III	Ecosystem	Universities Consumer/end users (B2C) Stakeholders (B2B) For-profit organizations Non-profit organizations	21
Section IV	Social effects	Corporate social responsibility (CSR) Social trust Communication and social interaction	10
Section V	Environmental effects	Healthy production and sustainable Waste management Environment protection	10
Section VI	Economic results	Profitability Reputation Customer satisfaction/retention Environmental innovation	14

Authors' Elaboration

Table 3. SMEs classification (Section II)

Particulars	Descriptions	Values	%	Sample
Number of staff (Persons)	< 10	137	52.29%	N = 262
	10 – 49	81	30.92%	
	50 – 250	44	16.79%	
Primary activity of SME	Sesame products	165	62.98%	
	Tile and or ceramic industry	37	14.12%	
	Iron and or steel industry	16	6.11%	
	Services	32	12.21%	
	Other	12	4.58%	
Business organized	Sole proprietorship	121	46.18%	
	Corporation (stock company)	29	11.07%	
	Partnership	89	33.97%	
	Limited liability corp	7	2.67%	
	Other	16	6.11%	

Authors' Elaboration

Table 4. Reliability and convergent validity

Variables		Indictors	Factor Loadings	T Statistics (|O/STDEV|)	VIF	P-Values	CA	AVE	CR	
									rho_a	rho_c
Ecosystem	Universities	UniEcos1	0.737	25.731	2.823	0.000	0.961	0.562	0.962	0.964
		UniEcos2	0.661	16.494	2.504	0.000				
		UniEcos3	0.735	25.719	2.834	0.000				
	Consumer/end users (B2C)	ConEcos1	0.726	23.760	2.501	0.000				
		ConEcos2	0.835	44.123	4.468	0.000				
		ConEcos3	0.730	24.988	2.572	0.000				
		ConEcos4	0.737	24.138	3.097	0.000				
		ConEcos5	0.714	23.206	2.292	0.000				
	Stakeholders (B2B)	StaEcos1	0.732	23.979	2.503	0.000				
		StaEcos2	0.738	28.910	2.582	0.000				
		StaEcos3	0.813	29.983	3.932	0.000				
		StaEcos4	0.778	32.975	3.443	0.000				
		StaEcos5	0.746	29.759	2.576	0.000				
		StaEcos6	0.762	29.666	2.991	0.000				
	For-profit organization	FPOEcos1	0.775	29.954	3.031	0.000				
		FPOEcos2	0.713	25.038	2.359	0.000				
		FPOEcos3	0.776	28.259	3.072	0.000				
		FPOEcos4	0.720	25.574	2.820	0.000				
	Non-profit organizations	NPOEcos1	0.785	34.447	2.714	0.000				
		NPOEcos2	0.784	37.475	2.890	0.000				
		NPOEcos3	0.720	29.127	2.347	0.000				
Social effects	CSR	CSRSoci1	0.768	24.754	2.251	0.000	0.930	0.614	0.931	0.941
		CSRSoci2	0.752	18.670	2.074	0.000				
		CSRSoci3	0.778	33.097	2.437	0.000				
	Social Trust	STSoci1	0.791	39.304	2.381	0.000				
		STSoci2	0.804	42.613	2.695	0.000				
		STSoci3	0.805	38.586	2.659	0.000				
		STSoci4	0.821	50.259	2.942	0.000				
	Communication and social integration	ComSoci1	0.797	43.159	2.933	0.000				
		ComSoci2	0.787	26.543	2.383	0.000				
		ComSoci3	0.727	23.407	2.131	0.000				
Environmental effects	Healthy and Production Sustainab	HPEnvi1	0.637	14.332	2.586	0.000	0.913	0.555	0.929	0.925
		HPEnvi2	0.753	21.133	3.305	0.000				
		HPEnvi3	0.700	18.885	2.393	0.000				
	Waste Management	WMEnvi1	0.837	46.313	2.854	0.000				
		WMEnvi2	0.761	32.778	2.836	0.000				
		WMEnvi3	0.713	17.272	2.759	0.000				
	Environmental Protection	EPEnvi1	0.729	21.985	2.421	0.000				
		EPEnvi2	0.732	22.621	2.176	0.000				
		EPEnvi3	0.764	26.737	2.741	0.000				
		EPEnvi4	0.806	39.768	3.462	0.000				
Economic results	Profitability	ProEcon1	0.860	47.165	3.792	0.000	0.951	0.611	0.954	0.956
		ProEcon2	0.830	53.427	3.617	0.000				
		ProEcon3	0.791	33.250	2.782	0.000				
	Reputation	RepEcon1	0.833	47.899	3.233	0.000				
		RepEcon2	0.791	33.271	2.717	0.000				
		RepEcon3	0.789	34.091	2.452	0.000				
		RepEcon4	0.791	36.234	2.447	0.000				
	Customers	CusEcon1	0.803	39.183	2.848	0.000				

Variables		Indictors	Factor Loadings	T Statistics (|O/STDEV|)	VIF	P-Values	CA	AVE	CR	
									rho_a	rho_c
		CusEcon2	0.815	37.047	2.580	0.000				
		CusEcon3	0.772	29.973	2.555	0.000				
		CusEcon4	0.670	21.589	1.826	0.000				
	Environmental Innov	EIEcon1	0.688	21.774	1.911	0.000				
		EIEcon2	0.758	28.180	2.328	0.000				
		EIEcon3	0.727	23.549	2.114	0.000				

(Factor loading > 0.7, CA >0.7, AVE > 0.5 and rho_a, rho-c≥ 0.70)
Authors' Elaboration

Table 5. Discriminant validity analysis.

Constructs	Economic	Ecosystem	Environmental	Social
Economic				
Ecosystem	**0.884**			
Environmental	0.794	**0.789**		
Social	0.870	0.879	**0.750**	

Authors' elaboration

Table 6. Model fit indicators

Fit indices	SRMR	d_ULS	d_G	NFI
Value in study	0.081	10.08	4.809	0.641
Suggest value	< 0.10	> 0.05	> 0.05	> 0.80

Authors' elaboration

Table 7. Relationships between variables (direct effects)

Hps	Paths			Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-Values	Result
H2	Ecosystem	→	Economic	0.393	0.388	0.068	5.750	0.000	Accepted
H1	Ecosystem	→	Environmental	0.777	0.779	0.023	34.211	0.000	Accepted
H1	Ecosystem	→	Social	0.838	0.839	0.024	34.809	0.000	Accepted
H1	Environmental	→	Economic	0.279	0.280	0.045	6.193	0.000	Accepted
H1	Social	→	Economic	0.290	0.294	0.077	3.751	0.000	Accepted

Authors' Elaboration

Table 8. Relationships between variables (total and indirect effects)

Hps	Paths			Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-Values	Result
Total indirect effects	Ecosystem	→	Economic	0.460	0.466	0.059	7.752	0.000	Accepted
Specific indirect effects	Ecosystem → Environmental → Economic			0.217	0.218	0.034	6.306	0.000	Accepted
	Ecosystem → Social → Economic			0.243	0.248	0.068	3.570	0.000	Accepted

Authors' Elaboration

Table 9. Explanatory power

Predictor(s)	Outcomer(s)	R-square	R-square adjusted	f-square	Q Square
Ecosystem	**Economic**	0.796	0.793	0.181	0.724
Environmental				0.144	
Social				0.117	
Ecosystem	**Environmental**	0.603	0.602	1.152	0.598
Ecosystem	**Social**	0.702	0.701	2.355	0.699

Authors' Elaboration

Table 10. Goodness-of-Fit index calculation.

Construct	AVE	R^2
Economic	0.611	0.796
Environmental	0.555	0.603
Social	0.614	0.602
Ecosystem	0.562	
Average	**0.585**	**0.667**
$\mathbf{AVE} \times \boldsymbol{R^2}$	**0.390**	
$\mathbf{GOF} = \sqrt{\mathbf{AVE} \times \boldsymbol{R^2}}$	**0.625**	

Authors' Elaboration

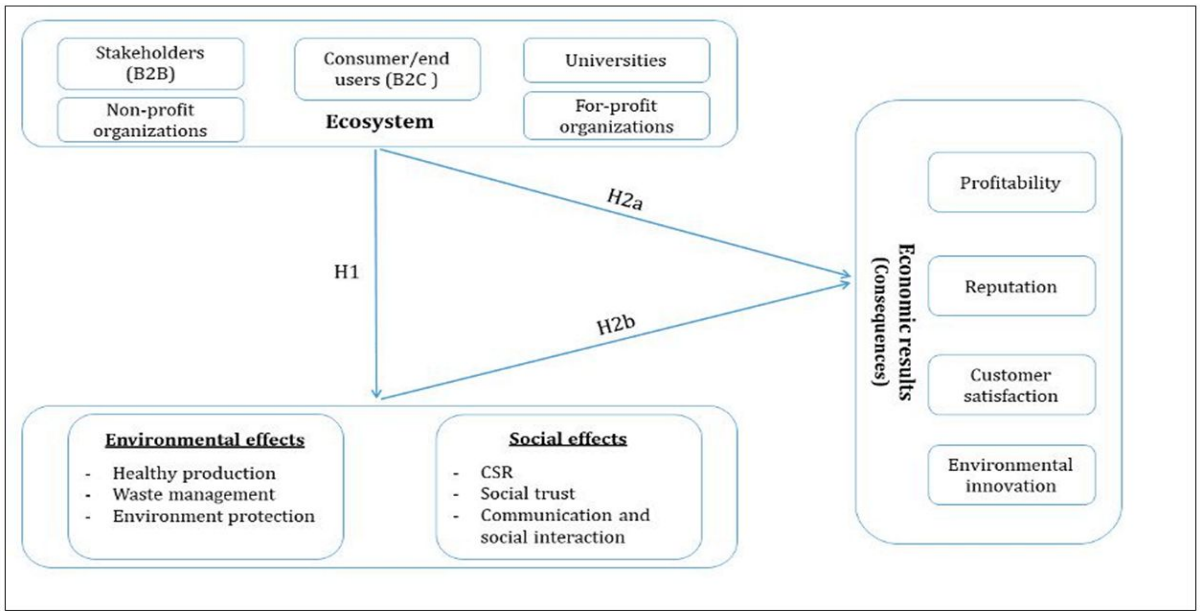

Fig. 1 Hypothesized initial conceptualization
Authors' Elaboration

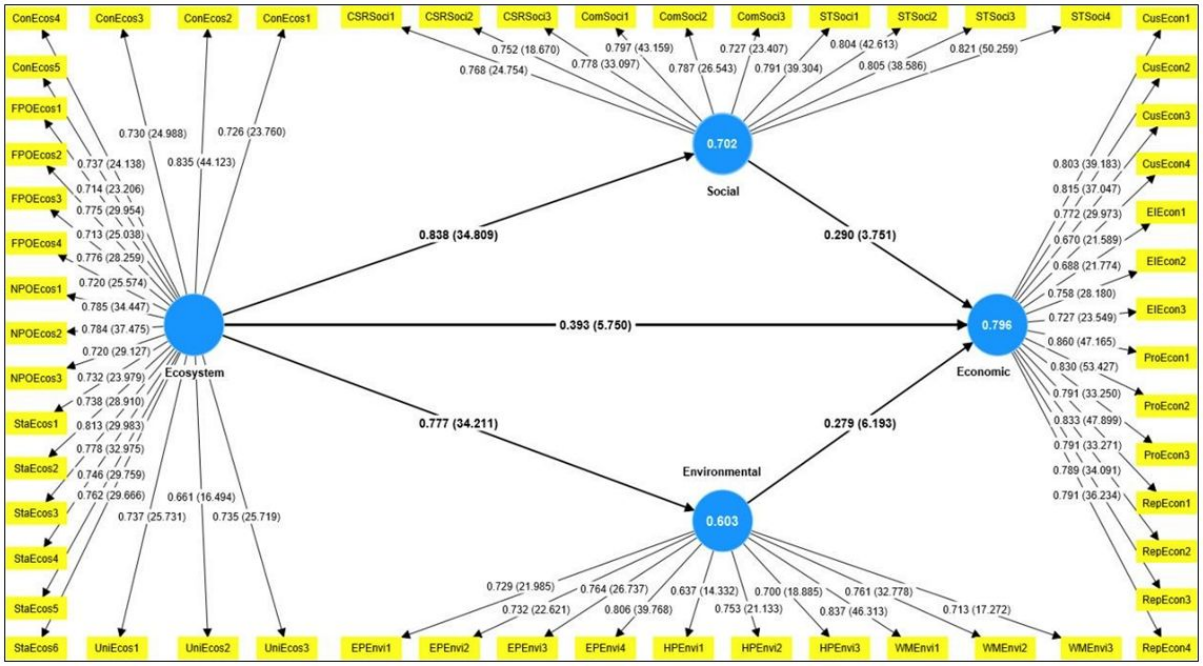

Fig. 2. Path coefficients, T- values, and R^2 values
Authors' Elaboration

Construct	Sub-Construc	Item labels	Description	Source	Measure
Ecosystem	Universities	UniEcos1	Interactions and participation between universities and industries to reduce environmental production impacts.	Nave and Franco (2019)	Ordinal
		UniEcos2	Interactions and participation between universities and industries to produce products with a low environmental impact.		Ordinal
		UniEcos3	Interactions and participation between universities and industries to innovate the value chain reducing the environmental impact.		Ordinal
	Consumer/end users (B2C)	ConEcos1	Consumers can participate in their product or service's customized/ production steps.	van Riel et al. (2021)	Ordinal
		ConEcos2	Consumers can ask for more environmental attention and respect in the production steps.		Ordinal
		ConEcos3	Responsibilities of business towards consumers.		Ordinal
		ConEcos4	Consumers can ask for more social respect in the production steps.		Ordinal
		ConEcos5	Communications such as social networks to inform consumers about environmental and social benefits of business products		Ordinal
	Stakeholders (B2B)	StaEcos1	Committed to your commitments with suppliers and consumers	Basile et al. (2022)	Ordinal
		StaEcos2	Provide accurate and complete information to funders when contracting.		Ordinal
		StaEcos3	Support and attract investors for the business.		Ordinal
		StaEcos4	Stakeholders can ask for more social respect and attention in the production steps.	Javalgi et al. (2018)	Ordinal
		StaEcos5	Stakeholders can ask for environmental attention and respect in the production steps.		Ordinal
		StaEcos6	Choose the stakeholders based on their environmental and social behaviours and factors.		Ordinal
	For-profit organizations	FPOEcos1	Business do exist some relations with other for-profits based on social mutual commitment.	Maon et al. (2019)	Ordinal
		FPOEcos2	Business do exist some relations with other for-profits based on environmental mutual commitment.		Ordinal
		FPOEcos3	Business selects the for-profit organizations to obtain benefits in social and environmental.		Ordinal

Construct	Sub-Construc	Item labels	Description	Source	Measure
		FPOEcos4	Collaboration can with other for-profit organizations can lead to sustainable business models that respect the environment and social issues.		Ordinal
	Non-profit organizations	NPOEcos1	Business do exist some relations with non-profit based on social and/or environmental mutual commitment.	Authors adaptation from Holm et al.	Ordinal
		NPOEcos2	Business participates in philanthropic activities.		Ordinal
		NPOEcos3	Collaborate with Non – profit organizations to achieve social and environmental benefit.		Ordinal
Social effects	CSR	CSRSoci1	Paying attention and better conditions about welfare needs.	Basile et al. (2022)	Ordinal
		CSRSoci2	Business committed to job creation and better working conditions		Ordinal
		CSRSoci3	Business participates in social projects to the community		Ordinal
	Social Trust	STSoci1	Having popularity and social credibility among people.	Sharafi et al. (2019)	Ordinal
		STSoci2	Trust to stockholders and other businesses in the field of business activity.		Ordinal
		STSoci3	Sharing information and work experiences with competitors and stockholders in the area.		Ordinal
		STSoci4	Trust of customers and consumers in the business.		Ordinal
	Communication and social interaction	ComSoci1	Business communication with other businesses and production networks, resource providers, distributors and sellers.	Sharafi et al. (2019)	Ordinal
		ComSoci2	Business access and communication with related centers and organizations, including cooperative businesses, research centers, and etc.		Ordinal
		ComSoci3	Business access to information channels and sources.		Ordinal
Environmental effects	Healthy Production and Sustainable	HPEnvi1	Pay attention to healthy production and safe products in terms of quality characteristics.	Sharafi et al. (2019)	Ordinal
		HPEnvi2	Pay attention to no pollution of surface or underground water resources caused by business production activities.		Ordinal
		HPEnvi3	Pay attention to No air pollution and greenhouse gas emission caused by business production activities.		Ordinal
	Waste Management	WMEnvi1	Pay attention to managing and reducing the amount of waste and waste production during business production activities.	Sharafi et al. (2019)	Ordinal
		WMEnvi2	Do separation of waste from business production activities.		Ordinal

Construct	Sub-Construc	Item labels	Description	Source	Measure
		WMEnvi3	Pay attention to the Recycling of waste and non-degradable waste.		Ordinal
	Environment Protection	EPEnvi1	Use of technologies and designs that reduce energy consumption in business	Gabler et al. (2015)	Ordinal
		EPEnvi2	Participate in activities related to the protection and enhancement of our natural environment.	Basile et al. (2022)	Ordinal
		EPEnvi3	Use consumables and/or processed goods of low environmental impact.		Ordinal
		EPEnvi4	Using renewable energies such as solar energy, wind, instead of fossil fuels (diesel, gasoline, etc.) In business activities.		Ordinal
Economic results	Profitability	ProEcon1	Business is usually satisfied with the return on sales	Sadiku-Dushi et al. (2019)	Ordinal
		ProEcon2	Firm is usually satisfied with net profit margins		Ordinal
		ProEcon3	Business is usually satisfied with gross profit margins		Ordinal
	Reputation	RepEcon1	Business has high reputation	Sadiku-Dushi et al. (2019)	Ordinal
		RepEcon2	Business treats its customers very seriously		Ordinal
		RepEcon3	Business is followed by a large number of followers on social media		Ordinal
		RepEcon4	Employees are proud to be the part of this business		Ordinal
	Customer satisfaction	CusEcon1	Business pay attention to customer ideas and suggestions	Mozaheb et al. (2015)	Ordinal
		CusEcon2	Business pay attention to customer loyalty, and it is important.		Ordinal
		CusEcon3	Business customer satisfaction is important.		Ordinal
		CusEcon4	Business tries to keep and maintain customers.		Ordinal
	Environmental Innovation	EIEcon1	Product and process innovation/developed according to this crisis (Covid-19)	Basile et al. (2022)	Ordinal
		EIEcon2	Use of new/improved process and product integrated environmental technologies and that cause low environmental impact		Ordinal
		EIEcon3	Use of new/improved cleaner product integrated environmental technologies		Ordinal

Note: Ecos= Ecosystem, Soci= Social, Envi= Environmental, Econ= Economic.

Uni= University, Con= Consumer, Sta= Stakeholders, FPO= For-profit organisations, NPO= Non-profit organisations, CSR= Corporate Social Responsibility, ST= Social Trust, HP= Healthy Production, WM= Waste Management, EP= Environment Protection, Pro= Profitability, Rep= Reputation, Cus= Customer, EI= Environmental Innovation.
Source: Authors' Elaboration

Appendix A Comparison of measurement scales from Van Riel et al. (2021) and adopted in our manuscript

Table A-1: Questionnaire items *van Riel et al. (2021)*		Our manuscript	
RC3	*I prefer to engage with firms that have the lowest negative impact on society or the environment.*	ConEcos1	Consumers can participate in their product or service's customized/ production steps.
RC3	*I prefer to engage with firms that have the lowest negative impact on society or the environment.*	ConEcos2	Consumers can ask for more environmental attention and respect in the production steps.
RC1	*I prefer to buy from firms that take responsibility for society (e.g., help the local community, offer environmentally friendly products and services and employ people with a hole in their resumé).*	ConEcos3	Responsibilities of business towards consumers.
SS2	*This firm supports good causes (e.g., charities, sports, culture).*	ConEcos4	Consumers can ask for more social respect in the production steps.
SS1	*This firm provides social activities for local communities.*		
SS3	*This firm regularly introduces new solutions to address social challenges.*	ConEcos5	Communications such as social networks to inform consumers about environmental and social benefits of business products

B2B Sustainable Ecosystems as support the 'three-legged stool' in emerging countries: SMEs' stakeholder relations in Ardakan (Iran)

How the Triple Bottom Line is creating new Business Models for the Ecosystem: An Empirical Study on Iranian SMEs Stakeholders

Abstract

Purpose: In the context of triple-bottom-line dynamics, societal components grapple with multifaceted challenges, necessitating changing behaviours within Business-to-Business (B2B) processes. This study investigates how collaborative relations in B2B ecosystems can influence social, environmental, and economic sustainability dynamics, exploring whether the former two positively impact economic results.

Design/methodology/approach: Validating a conceptual framework via partial least squares (PLS) structural equation modelling, a quantitative study on 262 Iranian SME stakeholders was conducted.

Findings: The research underscores the paramount role of B2B relations, emphasizing the shift towards interconnected relations between society, institutions, end-users, and businesses. The findings suggest that B2B collaborative efforts within a broader ecosystem address social and environmental needs, thereby contributing to transforming the ecosystem's business models. Innovatively, the research elicited that environmental and social effects have a positive mediating effect on economic results.

Originality/value: By proposing a business-social-Institutional model (B2SI) grounded in relational and dynamic capabilities, this study contributes to advancing both scientific understanding and business practices, pointing to the important role of social responsibility within B2B ecosystems.

Keywords: *B2B; Ecosystem; Triple bottom Line; Stakeholder Engagement; SME*

Paper type: Research paper

1. Introduction

1.1 Sustainability and development: the need for a new road

Sustainability-related issues, represented by the shaking three-legged stool, 'people, planet, and profit', involve, in their genesis and persistence, the interplay between interdisciplinary agents such as socioeconomic and ecological leaders of change operating within a highly complex ecosystem, frequently anchored in their respective context and often unclear in their focus (Sterner *et al.*, 2019). These agents often face challenges that are deeply embedded in their respective contexts, and their focus can sometimes be unclear (Sterner et al., 2019). The concept of sustainability providing such a focus is anchored in the Sustainable Development Goals (SDGs) defined by the United Nations, which prioritize the preservation of well-being for both people and the environment while promoting economic development. Arora et al. (2024) evidenced that SDG and sustainability related literature is growing and identified urgent and emerging areas of interest such as sustainable business practices. In particular, firms are currently involved in achieving these goals, but a lack of generalisable approaches and synergistic ecosystems determine potential differences between and in different countries where crisis situations are able to change the SME's SDGs agenda (Montera et al. 2024). The road to achieve the SDGs and sustainability dimension is transforming businesses especially in emerging countries with a lack of resources and as nascent economies being more prone to

be born sustainable (Prahalad and Mashelkar, 2010). In despite of, as noted by Ramaano (2024), the South Africa region, Musina, the lack of a clear and shared strategy slows down the pursuit of development and sustainability goals such as the social one. Latter author (p.11), therefore, emphasises the need for involving all the different stakeholders in defining a sustainable strategy that can create 'inclusive business opportunities, sustainable local community development and sustainability achievement'. While the prospect of reconciling economic goals with development and sustainability goals is widely studied in the literature, there is a lack of reflections that investigate how ecosystem interaction actually allows, while achieving social and environmental goals, to also achieve economic goals. As outline in Dominici (2021) in the current complex arena a system thinking is more necessary than never to capture the intricate strengths and interactions of socio-economic ecosystems.
Indeed, a collaboration between ecosystem actors can facilitate innovation and also increase productivity, but less clear is the influence of how such interactions aimed at sustainability can also support economic sustainability (Sharmelley and Ray, 2018; Prahalad and Mashelkar, 2010) and to better overall company performance (D'amato et al. 2018).

1.2 Sustainability and the need of a B2B Ecosystem prospective

At this stage, the literature only remains focused on single firms (Chen *et al.*, 2023; Huang *et al.*, 2022; Salam *et al.*, 2022) despite, as underlined by Cortese et al. (2024) with their study on emerging nations, there is a rising need to shift from a firm-centric perspective to a participatory relational perspective, an ecosystem thinking one, which more than others is able to grasp phenomena relevant to the life of a company such as innovation, which is endeavoured in the present study in the context of the sustainability dimension in the TBL frame. Pointing to a current research gap, the goals defined by the United Nations, that place the need to preserve the well-being of people and the environment as paramount, and the simultaneous welfare cuts by western countries, call for innovative remedies to improve existing business and to multidisciplinary manage the Triple Bottom Line dimension (TBL) (Hajikhani and Suominen, 2022). The TBL approach needs to stimulate different behaviours, both at single firm level and at the business-to-business (B2B) relational level (Tittensor *et al.*, 2014) and require and develop new dynamic capabilities (Wu et al. 2013). In this vein, the last few years gave rise to a curative marketing philosophy to be applied in economic transition settings aiming to reach economic gains not only for shareholders but also to foster the recursive loop of social impacts, social legitimation/reputation and economic results. In this context, Kaufmann *et al.* (2015) suggest the socially and human-related goals to be relevant for B2B economic results and competitive advantage. In light of the SDGs and the pressing need for sustainable practices, this paper employs the International Curative Marketing framework (Kaufmann et al., 2015) to explore the intersection of B2B and ecosystem dynamics within the context of sustainability. This framework integrates social, economic, and environmental considerations, thus providing a comprehensive approach to sustainable development that aligns with the SDGs. The study also addresses a significant research gap by focusing on emerging economies, where political, social, and environmental crises make the pursuit of sustainability particularly challenging yet vital (Kumar et al., 2022; Arya et al., 2021).

Problem statement

In the context of business modelling, marketing capabilities (Wu et al. 2013), especially those of Curative Marketing-related ones (Kaufmann *et al.*, 2015; Czinkota *et al.*, 2014; Kaufmann *et al.*, 2019; Czinkota *et al.*, 2020) are considered key drivers of sustainable development, to meet the requirements of the present generations without compromising those of the next ones. To significantly benefit the community, the authors of this paper call on organizations to adopt innovative sustainable business models based on a stakeholder approach. These should frame

B2B relations to answer the growing social, economic and environmental needs of the groups they influence (Dezi *et al.*, 2018; Laczniak & Murphy, 2006). To champion this complex change, the relationships between the diverse business ecosystem actors become the main source within an innovative and collaborative context. These relationships are inclusive of all stakeholders, such as universities, consumers/end users (B2C), employees, social and political groups, authorities, foundations, investors and for-profit and not-for-profit organizations. Latter create an exchange platform for a better reciprocal understanding, favouring win-win solutions (Sciarelli & Tani, 2015). In the meantime, the importance of stakeholder involvement is well recognized in literature; thus, the marketing discipline must also embrace a more inclusive involvement of the company's stakeholders considering the TBL impact in competitive conditions (Bhattacharya, 2010). This is not just regarded as a means to reach the company's social legitimation (Czinkota *et al.*, 2020), but also as a competitive advantage to increase brand equity and firm performance (Kumar & Christodoulopoulou, 2014). Moreover, a heightened stakeholder commitment that can no longer be waived given the central role played by businesses, especially small and medium-sized ones, at a global level but particularly in emerging markets (Pangboonyanon and Kalasin, 2018).

For these reasons, it can be argued that, in order to reach scientific and practical advancements, it is necessary to conduct research in countries where these themes have not been considered explicitly due to their political and social conditions, such as developing or transition countries suffering from civil war or social and ecological crises and having remote areas with poor communities (Kumar *et al.* 2022; Arya *et al.*, 2021). In these countries or regions, being attentive to the TBL dimensions may not only refer to an operational but also a regulatory imperative due to their bond with local governments' policies. Therefore, emerging markets provide a particularly interesting laboratory to put sustainability marketing behaviours within B2B relations centre stage since they engage in activities that place them at the forefront of social or environmental issues. As Fasolo *et al.* (2022) argue, the government has a regulatory role in influencing the sustainability of small and medium sized firms that are often predominant in these markets. SMEs should increasingly adopt sustainable business models (Troise *et al.*, 2023). Thus, emerging markets and their enterprise textile provide a particularly interesting canvas for sustainability marketing behaviours within B2B relations.

Brophy *et al.* (2020) suggest to closely examine the early stage of the ecosystem and stakeholders' expectations during changes. However, exploring sustainable perspectives in these contexts requires further studies. Synthesizing the ecosystem and corporate business model perspective, a new stream of literature is expected to assess how innovative sustainable business models create and capture value in social-environmental systems, reflecting a research gap yet to be filled. Huang *et al.* (2022, p. 232) explicit call to answer the following question: "*What are the economic impacts of sustainable B2B networks and ecosystems?*" Following Huang *et al.*'s (2022) call to cover this gap, this study is among the first to adopt an ecosystem lens. This work aims to contribute to fill this gap and presents the ecosystem, spontaneous or negotiated, as a knowledge and risk-sharing pool to develop new ideas or adapt existing ones to the TBL needs satisfaction.

To guide this research, a conceptual framework is proposed and validated in the Iranian SMEs context, according to which the ecosystem addresses social and economic needs that will be satisfied by entrepreneurial business models based on B2B enlarged model (collaborative and collective). This conceptual effort aims to explain how spontaneous or planned relationships between heterogeneous agents, as in ecosystems, that consider both social as well as environmental concerns in a profit-making scope, could leverage contributions to people and the planet alike while still making a profit to ensure sustainable competitive advantage of an economic agent.

The present research aims to support scientific and business practice advancement calling for an increasing social role of enterprises, especially small and medium enterprises, frequently undervalued in their relevance to TBL.
This study is one of the first to examine B2B ecosystem models from a multi-agent perspective, integrating Business-Social-Institutional (B2SI) components to address the SDGs and produce positive TBL impacts in crisis-affected contexts (Huang et al., 2022).
With this aim in mind, the following research questions (RQs) are related to the challenges that firms face in ecosystem partnerships and their impact on the TBL dimension:
RQ1: How does the collaboration of B2B ecosystem actors influence triple-bottom-line dynamics?
RQ2: How do environmental and social effects influence SME ecosystem economic results?
In this regard, the research emphasizes the transition from B2B to pertinent relations among social and institutional players, end-users, and SMEs. The study renders scientific insights into the progression of B2B ecosystem theory and focuses on understanding sustainability in contexts of entrepreneurial, innovative and platform ecosystems, providing a basis for developing strategies that consider the specific dynamics of such emerging ecosystems. The significance of co-creating value via a Business-Social-Institutional model (B2SI) based on relational and dynamic capabilities is underscored and the results. Our study reveals that sustainable B2B ecosystem business models, particularly those incorporating multi-agent perspectives and integrated B2SI components, positively impact economic, social, and environmental outcomes in crisis-affected emerging markets. The findings show that effective ecosystem relationships enhance TBL dynamics, demonstrating that attention to social and environmental dimensions can indirectly improve economic results. Additionally, adopting curative practices leads to better performance, reputation, and innovative solutions. This advanced model promotes a new collaborative approach for SMEs, especially during crises like the COVID-19 pandemic, fostering sustainable behaviour and innovation among stakeholders.
The present research is organized as follows: in the next section, a literature review on the business ecosystem is provided; the third section presents the conceptual framework and the problem statement; in the fourth part, hypotheses and variable development are developed; the fifth and sixth parts present the research results. The paper concludes with section seven, providing space for discussion, research and managerial implications, the limitations of the present study, avenues for future research and conclusions.

2. Literature review

2.1 Heterogenous ecosystem stakeholders co-create shared sustainable values

In recent decades, scholars such as Porter and Kramer (2006, 2010), Ritter and Pedersen (2020), and Cortez and Johnston (2020) have been advocating a stakeholder approach in management and marketing studies. Smith *et al.* (2010) argue that the contemporary business landscape requires acknowledging a changed societal context. There is a need to address multiple and diverse stakeholders interconnected within an ecosystem to achieve economic objectives and meet socio-environmental community needs. Following this ‘utopia’, enterprises face a risk when adhering to a conventional marketing strategy focused solely on consumer behaviour and profit, overlooking the holistic nature of the consumer's roles as an individual, citizen, community member, and employee with diverse social and environmental needs. The pandemic has accentuated this trend, underlining the importance of community needs and entrepreneurial behaviours that foster spontaneous stakeholder relations to address social and environmental concerns. Sheth and Uslay (2007) stress that value can only be created by considering stakeholders. This challenges the traditional shareholder model based on capturing

economic value and aims to generate socially, environmentally, and economically co-created and shared value. Interdisciplinary researchers (Russell & Smorodinskaya, 2018; Annesi *et al.*, 2020) integrate the literature on marketing capabilities, innovation, and sustainability with biological studies to conceptualize ecosystems as complex interactive systems with open, non-linear, horizontal, and heterarchical relationships aimed to better planet and people conditions.

2.2 Ecosystem's relations and Curative International Marketing: their role in TBL value creation

The ecosystem has underscored the imperative to enhance creativity and innovation to address the social, environmental, and economic challenges for people worldwide. It is positioned as a public good within a complex context (Holland, 2002). Lambe *et al.* (2001) and Cortez and Johnson (2020) argue that a crisis event, as the global climate related one, stimulates the four foundational premises of social exchange theory in B2B relationships (sampling, bargaining, commitment, and institutionalization). In this context, Curative International Marketing is regarded as a philosophical framework that explicitly and innovatively emphasizes the introspective and contributory role of marketing in healing on social, economic, environmental, corporate, and industrial levels. It embodies a spirit of healing and repairing that reflects a new type of firm motivation guided by social responsibility. Curative International Marketing aligns with conceptual peers embracing interdisciplinary dimensions such as values (character identity), management/leadership/entrepreneurship, complexity theory, identity, marketing (especially social marketing), and critical realism (Kaufmann *et al.*, 2015, p. 76). Derived innovative sustainable business models should shape B2B SME relations to contribute to addressing the TBL concerns of the groups they influence (Laczniak & Murphy, 2006). Curative Marketing characteristics (Kaufmann *et al.*, 2015; Czinkota *et al.*, 2014; Kaufmann *et al.*, 2019; Czinkota *et al.*, 2020) could be key drivers of sustainable development capable of bridging the needs of present and future generations. It provides innovative and relevant evidence on how ecosystems positively and effectively impact the TBL approach.

2.3 Ecosystem theory and Curative International Marketing: the SME role

Enterprises are seen as socio-economic agents driven by the mission of "sustaining life" in changing conditions, moving away from outdated hierarchical and strategy-alone models. This non-linear perspective is supported by the idea that innovation emerges from various sources and stages of economic and social dynamics, facilitated by the proliferation of Information and Communication Technologies (ICT) and the involvement of numerous institutions in a highly interactive, collaborative and modular process of producing and diffusing knowledge (Ivanova *et al.*, 2020). Consequently, this approach positions the ecosystem as a phenomenon that surpasses B2B relationships and acts as a catalyst for a broader innovation space. It involves diverse stakeholders, leveraging their competencies and/or needs to promote the co-creation of TBL goals and the utilization of innovation within a context of mutual understanding (Autio & Thomas, 2014; Sigala, 2019).

SME curative prowess remains strategic in the recursive loop: to create and enhance social and ecological value for current and for future generations is the key driver to produce economic results and support the firm to survive and grow. To engineer this change, the relationship between business networks (B2B) and different actors becomes the source of an innovative and collaborative business climate that could lead to collaborative ecosystem and other form of transformation in ecosystem (Fedele et al. 2024). As identified by Hertenstein and Alon (2021), the same companies in emerging markets expand their ecosystem to international choices less and less to gain in sales but rather to gain in knowledge and innovation potential. Through

crowdsourcing processes, solution-seekers and problem-solvers, supported by ICT applications, come together to deliver answers to salient community needs (Howe, 2008; Hammon & Hippner, 2012). These relationships involve stakeholders exchanging requirements and interests to create a reciprocal understanding between innovation actors, favouring win-win solutions (Sciarelli & Tani, 2015).

Ashraf et al. (2020) firms with more gender-diverse boards, larger audit committees, and higher institutional ownership are more likely to issue sustainability reports, the authors confirm that the sector and ecosystem in which firms operate is a valid predictor of their sustainability focus. The authors also point out how the achievement of competitive advantage must increasingly take into account sustainability dimensions and call for more research on emerging nations and strategies related to the sustainability of the entire ecosystem in which companies move It is essential to highlight how the ecosystem approach is applied to entrepreneurship, SMEs and B2B processes, considering a territory's capacity to create a system of agents, firms and infrastructures supporting the creation and development of innovative business models attentive to the TBL dimension. This goes beyond the simplistic construction of a territorial network architecture between companies (Alvedalen & Boschma, 2017; Spigel, 2017; Nicotra *et al.*, 2018). On the other hand, TBL becomes the motivation, the logic on which the SME's B2B and/or ecosystem emergence is based (Russell & Smorodinskaya, 2018).

3. Problem statement

The quest for new curative solutions or the enhancement of existing ones to effectively manage and heal the social, environmental, and economic conditions aligned with the TBL approach intensified by increased digitization capacity, presents unique opportunities for changes in business models in industrial marketing (Foss & Saebi, 2015; Vrontis *et al.*, 2022). As a collective or collaborative endeavour (depicted in Figure 1), social and economic actors involved in these relational processes share responsibilities and can be considered co-responsible for developing a crowdsourcing process to co-produce or deliver new services or products (Blok *et al.*, 2015; Sheth & Sinha, 2015). Crowdsourcing practices play a pivotal role in the ecosystem, contributing to solving complex problems (Acar, 2019). Embracing this shared approach has facilitated the mobilization of knowledge exchange processes from various locations and disciplines, creating more extensive learning opportunities and fostering progress towards the identified issues (Chesbrough, 2014). Brophy *et al.* (2020) also recommend studying the ecosystem's nascent stage and stakeholders' expectations during changes. For these reasons, ecosystems have been categorized into entrepreneurial, innovative, and platform ecosystems (Jacobides *et al.*, 2018). However, sustainable perspectives in these ecosystems still require further exploration. Given this scenario, it is imperative to investigate and elucidate the new phenomena of B2B relations and knowledge for sustainable business model innovations (Giacomarra et al. 2019), empowering marketers to address the TBL dynamics conditions sustainably and curatively (see Figure 1). Thus, B2B, or better ecosystem marketers' adoption of sustainability as a reputational and business tool, even more so in emerging markets, should lead them to realize that they should adopt a holistic view that considers management for the well-being of coming generations and the local communities and environment (Bae *et al.*, 2018; Dezi *et al.* 2022). Building on these premises, the researchers focus on the SMEs' ecosystem behaviour and B2B interactions when developing a framework for sustainable business modelling, highlighting the relevance of the social and environmental objectives (i.e., ecosystem resilience) within the B2B engagements.

4. Conceptual framework and Hypotheses development

The study aims to validate a conceptual framework suggesting that the ecosystem emerges from social, environmental, and economic needs, satisfied through an entrepreneurial business model based on B2B (collaborative and collective) efforts with diverse ecosystem participants. As evidenced in the literature presented collaborations and collective efforts can influence the performance of firms in achieving a TBL approach, in fact, collaborations in ecosystems are able to not only influence innovation (Sharmelley and Ray, 2018) but also to lead to higher levels of productivity by producing better with less (Prahalad and Mashelkar, 2010) and to better overall company performance (D'amato *et al.* 2018). Against this backdrop, the following hypotheses were derived from literature:

H1: Collaboration among B2B ecosystem actors positively influences SMEs' performance in pursuit of a TBL approach

H2: Economic results are positively influenced by environmental and social effects (in alignment with the Curative International Marketing philosophy based on selected curative effects, such as environmentally friendly production or social trust).

For an illustration of expected factor relationships and hypotheses, please refer to Figure 1.

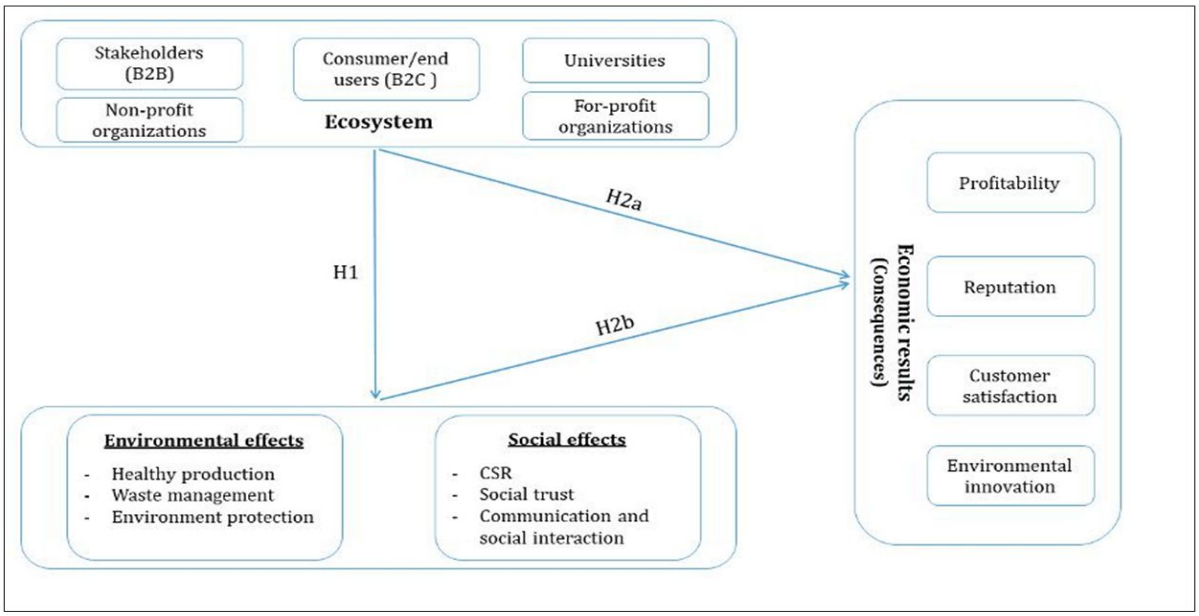

Fig. 1 Hypothesized initial conceptualization
Authors' Elaboration

5. Methods

At this stage of their research, the authors adopt a quantitative approach following the Critical Realism research philosophy. Due to the constraints imposed by the COVID-19 crisis, it was deemed that the most suitable method for data collection was a structured questionnaire (Chatterjee et al. 2022). The next section describes the methodology, and the data used to test the hypotheses.

5.1. Population and Sample

To examine the proposed hypotheses, considering that, as mentioned by Xie *et al.* (2020), the changes brought about by the COVID-19 pandemic scenario will continue to produce results in the future as well, we conducted a survey targeting sustainable ecosystems as B2B relations with diverse stakeholders in the transitional setting of the Ardakan city, Iran.

We selected a quantitative approach using Structural Equation Modeling (SEM) because it is well-suited for analysing and comparing the cause-and-effect relationships among various facets of risks, which is central to our study. Unlike regression, SEM allows for the

simultaneous examination of multiple relationships, providing a more comprehensive understanding of the data (Lowry and Gaskin, 2014). The methodology for data analysis was conducted in two steps. First, we confirmed the factor structure of the measurement items to ensure validity, reliability, and model fit. Second, we investigated the path relationships between constructs to test the proposed hypotheses, further demonstrating the suitability of SEM for our research objectives (Lowry and Gaskin, 2014).

We have chosen Ardakan city for the following reasons: First and foremost, this city has the potential capacity and opportunities for investment and economic growth; secondly, this city is an emerging setting with many active stockholders in these SMEs. Also, these SMEs play an essential role in the development of this city. Furthermore, the Ardakan city promoted sustainable ecosystems during the Coronavirus disease to enhance well-being and quality of life (Basile *et al.*, 2022).

Stakeholders in SMEs of this city play a main role in improving SME performance, for this reason we selected them for study. The population of the current research, according to declaration of the formal organisations in this city, is about 350 stakeholders. By using a simple random sample, 325 questionnaires were distributed among stakeholders. 269 of questionnaires were answered and 262 questionnaires were useable for analysis. Finally, the data collected from 262 SME stakeholders occurred during a critical period for the city, between November 2022 and December 2022, during the COVID-19 and turbulent social crises, which further aggravated the receipt of responses.

5.2. Variable measurement

We used standardized questionnaires to better assess the validity of the questionnaire. After considering the limitations and preferences, we decided that the best way to collect information was by means of a questionnaire. The process of gathering and measuring information consisted of four phases. First, we chose the measurement scales of the essential variables from previous research and studies adopted from Basile *et al.* (2022), Sharafi *et al.* (2019), Sadiku-Dushi *et al.* (2019), Maon *et al.* (2019), Nave and Franco, (2019), Javalgi *et al.* (2018), Gabler *et al.* (2015) and Holm *et al.* (1999) and Van Riel et al. (2021) items have been adjusted according to the context of our research and population (See Table 2)., i.e. when developing the items for this research, we were guided by van Riel et al's scale (2021); whilst contextually referring to each respective question of van Riel et al.'s scale (2021), we rephrased the questions to better emphasize consumers' influence and involvement and the communication with them, factors, which were less considered in detail by van Riel et al. (2021) see the appendix A. To measure variables in the framework, we used a five-point Likert-type scale to measure the values ranging from 1 to 5 (1= entirely disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5= fully agree).

The questionnaire, for a total of 55 items, was designed into 5 sections: an introductory section (sections I and II) to collect the profile information of the SMEs and main sections (sections III, IV, V and VI) to focus on exploring SME's relationships in the ecosystem with a TBL approach (for details, please see Tables 1 and 2. Second, to ensure a complete understanding of the selected sample, we made suitable adaptations to accommodate the Persian version, and the initial questionnaire was translated into Persian language. Third, two preliminary studies were conducted to assess the questionnaire regarding coherence, construct validity form and technical matters: a pre-test with 12 questionnaires among the SME ecosystem participants and a second with 40 questionnaires among SME stakeholders for a final check were conducted. The test results for the reliability of measurements were evaluated through Cronbach's Alpha

for variables. All values are shown in Table 5. The fourth step referred to the SME selection and survey administration.

Table 1. Summary of questionnaire sections

Sections	Dimension	Measured items	Number of questions
Section I	Demographic characteristics	Gender Age Education Work experience	4
Section II	SME classification	Number of staff Primary activity of SME Business organized	3
Section III	Ecosystem	Universities Consumer/end users (B2C) Stakeholders (B2B) For-profit organizations Non-profit organizations	21
Section IV	Social effects	Corporate social responsibility (CSR) Social trust Communication and social interaction	10
Section V	Environmental effects	Healthy production and sustainable Waste management Environment protection	10
Section VI	Economic results	Profitability Reputation Customer satisfaction/retention Environmental innovation	14

Authors' Elaboration

The final questionnaire administered and list of constructs and subconstruct with sourses and measures are reported in the Table 2.

Table 2: Summary of variables (Sections III, IV, V and VI)

Construct	Sub-Construc	Item labels	Description	Source	Measure
Ecosystem	**Universities**	UniEcos1	Interactions and participation between universities and industries to reduce environmental production impacts.	Nave and Franco (2019)	Ordinal
		UniEcos2	Interactions and participation between universities and industries to produce products with a low environmental impact.		Ordinal
		UniEcos3	Interactions and participation between universities and industries to innovate the value chain reducing the environmental impact.		Ordinal

Construct	Sub-Construc	Item labels	Description	Source	Measure
	Consumer/end users (B2C)	ConEcos1	Consumers can participate in their product or service's customized/ production steps.	van Riel et al. (2021)	Ordinal
		ConEcos2	Consumers can ask for more environmental attention and respect in the production steps.		Ordinal
		ConEcos3	Responsibilities of business towards consumers.		Ordinal
		ConEcos4	Consumers can ask for more social respect in the production steps.		Ordinal
		ConEcos5	Communications such as social networks to inform consumers about environmental and social benefits of business products		Ordinal
	Stakeholders (B2B)	StaEcos1	Committed to your commitments with suppliers and consumers	Basile et al. (2022)	Ordinal
		StaEcos2	Provide accurate and complete information to funders when contracting.		Ordinal
		StaEcos3	Support and attract investors for the business.		Ordinal
		StaEcos4	Stakeholders can ask for more social respect and attention in the production steps.	Javalgi et al. (2018)	Ordinal
		StaEcos5	Stakeholders can ask for environmental attention and respect in the production steps.		Ordinal
		StaEcos6	Choose the stakeholders based on their environmental and social behaviours and factors.		Ordinal
	For-profit organizations	FPOEcos1	Business do exist some relations with other for-profits based on social mutual commitment.	Maon et al. (2019)	Ordinal
		FPOEcos2	Business do exist some relations with other for-profits based on environmental mutual commitment.		Ordinal
		FPOEcos3	Business selects the for-profit organizations to obtain benefits in social and environmental.		Ordinal
		FPOEcos4	Collaboration can with other for-profit organizations can lead to sustainable business models that respect the environment and social issues.		Ordinal
	Non-profit organizations	NPOEcos1	Business do exist some relations with non-profit based on social and/or environmental mutual commitment.	Authors adaptation from Holm et al. (1999)	Ordinal
		NPOEcos2	Business participates in philanthropic activities.		Ordinal
		NPOEcos3	Collaborate with Non – profit organizations to achieve social and environmental benefit.		Ordinal

Construct	Sub-Construc	Item labels	Description	Source	Measure
Social effects	CSR	CSRSoci1	Paying attention and better conditions about welfare needs.	Basile et al. (2022)	Ordinal
		CSRSoci2	Business committed to job creation and better working conditions		Ordinal
		CSRSoci3	Business participates in social projects to the community		Ordinal
	Social Trust	STSoci1	Having popularity and social credibility among people.	Sharafi et al. (2019)	Ordinal
		STSoci2	Trust to stockholders and other businesses in the field of business activity.		Ordinal
		STSoci3	Sharing information and work experiences with competitors and stockholders in the area.		Ordinal
		STSoci4	Trust of customers and consumers in the business.		Ordinal
	Communication and social interaction	ComSoci1	Business communication with other businesses and production networks, resource providers, distributors and sellers.	Sharafi et al. (2019)	Ordinal
		ComSoci2	Business access and communication with related centers and organizations, including cooperative businesses, research centers, and etc.		Ordinal
		ComSoci3	Business access to information channels and sources.		Ordinal
Environmental effects	Healthy Production and Sustainable	HPEnvi1	Pay attention to healthy production and safe products in terms of quality characteristics.	Sharafi et al. (2019)	Ordinal
		HPEnvi2	Pay attention to no pollution of surface or underground water resources caused by business production activities.		Ordinal
		HPEnvi3	Pay attention to No air pollution and greenhouse gas emission caused by business production activities.		Ordinal
	Waste Management	WMEnvi1	Pay attention to managing and reducing the amount of waste and waste production during business production activities.	Sharafi et al. (2019)	Ordinal
		WMEnvi2	Do separation of waste from business production activities.		Ordinal
		WMEnvi3	Pay attention to the Recycling of waste and non-degradable waste.		Ordinal
	Environment Protection	EPEnvi1	Use of technologies and designs that reduce energy consumption in business	Gabler et al. (2015)	Ordinal

Construct	Sub-Construc	Item labels	Description	Source	Measure
		EPEnvi2	Participate in activities related to the protection and enhancement of our natural environment.	Basile et al. (2022)	Ordinal
		EPEnvi3	Use consumables and/or processed goods of low environmental impact.		Ordinal
		EPEnvi4	Using renewable energies such as solar energy, wind, instead of fossil fuels (diesel, gasoline, etc.) In business activities.		Ordinal
Economic results	Profitability	ProEcon1	Business is usually satisfied with the return on sales	Sadiku-Dushi et al. (2019)	Ordinal
		ProEcon2	Firm is usually satisfied with net profit margins		Ordinal
		ProEcon3	Business is usually satisfied with gross profit margins		Ordinal
	Reputation	RepEcon1	Business has high reputation	Sadiku-Dushi et al. (2019)	Ordinal
		RepEcon2	Business treats its customers very seriously		Ordinal
		RepEcon3	Business is followed by a large number of followers on social media		Ordinal
		RepEcon4	Employees are proud to be the part of this business		Ordinal
	Customer satisfaction	CusEcon1	Business pay attention to customer ideas and suggestions	Mozaheb et al. (2015)	Ordinal
		CusEcon2	Business pay attention to customer loyalty, and it is important.		Ordinal
		CusEcon3	Business customer satisfaction is important.		Ordinal
		CusEcon4	Business tries to keep and maintain customers.		Ordinal
	Environmental Innovation	EIEcon1	Product and process innovation/developed according to this crisis (Covid-19)	Basile et al. (2022)	Ordinal
		EIEcon2	Use of new/improved process and product integrated environmental technologies and that cause low environmental impact		Ordinal
		EIEcon3	Use of new/improved cleaner product integrated environmental technologies		Ordinal

Note: Ecos= Ecosystem, Soci= Social, Envi= Environmental, Econ= Economic.
Uni= University, Con= Consumer, Sta= Stakeholders, FPO= For-profit organisations, NPO= Non-profit organisations, CSR= Corporate Social Responsibility, ST= Social Trust, HP= Healthy Production, WM= Waste Management, EP= Environment Protection, Pro= Profitability, Rep= Reputation, Cus= Customer, EI= Environmental Innovation.
Source: Authors' Elaboration

5.3. Structural model estimation

To test our model and examine the study's hypotheses, the partial least squares (PLS) structural equation modelling (SEM) was used: the SmartPLS4 (version 4.0.8.7) software and SPSS

(version 26.0) software was applied for testing. Structural equation modelling (SEM) is a statistical analysis technique that combines multiple regression analysis and factor analysis. We used variance-based, partial least squares structural equation modelling (PLS-SEM; Hair *et al.* 2017; Hair *et al.* 2018). This decision was made because PLS had proven effective when the research was mainly for analysing exploratory data and predictive purposes (Ringle *et al.*, 2014; Hair *et al.*, 2019). The PLS-SEM model is widely used in the business research disciplines, behavioural sciences and Industrial Marketing Management (Davvetas *et al.* 2020) for studying psychological and social constructs to analyse complex multivariate relationships among observed and latent variables. Hence, in this study, we used SmartPLS for data analysis.

6. Results

This study used a structural and measurement model assessment to analyse data. This section describes the demographic data, measurement model (Convergent Validity (CV), Internal Consistency (IC), Discriminant Validity (DV)), and structural model (model fit, Variance Inflation Factor (VIF), R^2, f^2, Q^2 and Goodness of Fit (GOF) index).

6.1. Description of demographic characteristics

The frequency of demographic characteristics is shown in Table 3 to explain the particularities of the samples more clearly.

Table 3. Demographic characteristics (Section I)

Dimension	Descriptions	Values	%	Sample
Gender	Male	243	92.75%	N = 262
	Female	19	7.25%	
Age (Year)	< 30	25	9.54%	
	30 – 35	38	14.50%	
	36 – 40	43	16.41%	
	41 – 45	77	29.39%	
	46 – 50	69	26.34%	
	> 50	10	3.82%	
Education	< Diploma	71	27.10%	
	Diploma	126	48.09%	
	Bachelor	54	20.61%	
	Graduate and upper	11	4.20%	
Work Experience (Year)	< 1	5	1.91%	
	1 – 5	18	6.87%	
	6 – 10	43	16.41%	
	11 – 15	66	25.19%	
	16 – 20	71	27.10%	
	> 20	59	22.52%	

Authors' Elaboration

A description of SME classification is included in the present section (II): the number of staff, the primary activity of the SME, and the organisational form. The frequency of SME classification is presented in Table 4.

Table 4. SMEs classification (Section II)

Particulars	Descriptions	Values	%	Sample
Number of staff	< 10	137	52.29%	N = 262

Particulars	Descriptions	Values	%	Sample
(Persons)	10 – 49	81	30.92%	
	50 – 250	44	16.79%	
Primary activity of SME	Sesame products	165	62.98%	
	Tile and or ceramic industry	37	14.12%	
	Iron and or steel industry	16	6.11%	
	Services	32	12.21%	
	Other	12	4.58%	
Business organized	Sole proprietorship	121	46.18%	
	Corporation (stock company)	29	11.07%	
	Partnership	89	33.97%	
	Limited liability corp	7	2.67%	
	Other	16	6.11%	

Authors' Elaboration

6.2. Measurement model

In this study, model testing was evaluated through three basic criteria using SmartPLS: (1) average variance extracted (AVE) to measure the convergent validity (CV), (2) composite reliability (CR) to measure the reliability of internal consistency (IC), and (3) Heterotrait–Monotrait ratio (HTMT) to evaluate the discriminant validity (DV) (Hair *et al.*, 2020).

6.2.1. Convergent Validity (CV)

In this study, we used two criteria to measure convergent validity (CV): average variance extracted (AVE) and factor loading. The values AVE of each item obtained were above the threshold of 0.5. As Table 5 shows, all questions were measured in terms of their outer loadings, in which each question had an outer loading above the threshold of 0.7, based on the Hair *et al.* (2020) rule. In addition, individual reliability was sufficient, as shown in Table 5, so the convergent validity as confirmed as good.

6.2.2 Internal Consistency (IC)

The internal consistency of the model was verified based on two main criteria: composite reliability (CR) and Cronbach's Alpha (CA) analysis. Cronbach's alpha coefficient was utilized in the present study along with CR values to measure internal consistency. Table 5 shows that CA values are between 0.913 and 0.961. The Dijkstra–Henseler's rho (ρA) values exceed 0.7 in all instances, which indicates relatively higher internal consistency reliability of the construct scores. These values of CA and CR being higher than 0.8 are regarded as fine, with values higher than 0.9 considered excellent (Henseler *et al.*, 2009). The results in Table 5 show the values from 0.925 and 0.964 being part of the CR. All CV values are beyond the recommended threshold of 0.7 (Kline, 2015). The values of ρA for all measurements constructed are higher than 0.925, as depicted in Table 5. Hence, construct reliability was confirmed.

Table 5. Reliability and convergent validity

Variables		Indictors	Factor Loadings	T Statistics (|O/STDEV|)	VIF	P-Values	CA	AVE	CR	
									rho_a	rho_c
Ecosystem	Universities	UniEcos1	0.737	25.731	2.823	0.000	0.961	0.562	0.962	0.964
		UniEcos2	0.661	16.494	2.504	0.000				
		UniEcos3	0.735	25.719	2.834	0.000				
	Consumer/end users (B2C)	ConEcos1	0.726	23.760	2.501	0.000				
		ConEcos2	0.835	44.123	4.468	0.000				
		ConEcos3	0.730	24.988	2.572	0.000				
		ConEcos4	0.737	24.138	3.097	0.000				
		ConEcos5	0.714	23.206	2.292	0.000				
	Stakeholders (B2B)	StaEcos1	0.732	23.979	2.503	0.000				
		StaEcos2	0.738	28.910	2.582	0.000				
		StaEcos3	0.813	29.983	3.932	0.000				
		StaEcos4	0.778	32.975	3.443	0.000				
		StaEcos5	0.746	29.759	2.576	0.000				
		StaEcos6	0.762	29.666	2.991	0.000				
	For-profit organization	FPOEcos1	0.775	29.954	3.031	0.000				
		FPOEcos2	0.713	25.038	2.359	0.000				
		FPOEcos3	0.776	28.259	3.072	0.000				
		FPOEcos4	0.720	25.574	2.820	0.000				
	Non-profit organizations	NPOEcos1	0.785	34.447	2.714	0.000				
		NPOEcos2	0.784	37.475	2.890	0.000				
		NPOEcos3	0.720	29.127	2.347	0.000				
Social effects	CSR	CSRSoci1	0.768	24.754	2.251	0.000	0.930	0.614	0.931	0.941
		CSRSoci2	0.752	18.670	2.074	0.000				
		CSRSoci3	0.778	33.097	2.437	0.000				
	Social Trust	STSoci1	0.791	39.304	2.381	0.000				
		STSoci2	0.804	42.613	2.695	0.000				
		STSoci3	0.805	38.586	2.659	0.000				
		STSoci4	0.821	50.259	2.942	0.000				
	Communication and social interaction	ComSoci1	0.797	43.159	2.933	0.000				
		ComSoci2	0.787	26.543	2.383	0.000				
		ComSoci3	0.727	23.407	2.131	0.000				
Environmental effects	Healthy and Sustainable Production	HPEnvi1	0.637	14.332	2.586	0.000	0.913	0.555	0.929	0.925
		HPEnvi2	0.753	21.133	3.305	0.000				
		HPEnvi3	0.700	18.885	2.393	0.000				
	Waste Management	WMEnvi1	0.837	46.313	2.854	0.000				
		WMEnvi2	0.761	32.778	2.836	0.000				
		WMEnvi3	0.713	17.272	2.759	0.000				
	Environmental Protection	EPEnvi1	0.729	21.985	2.421	0.000				
		EPEnvi2	0.732	22.621	2.176	0.000				
		EPEnvi3	0.764	26.737	2.741	0.000				
		EPEnvi4	0.806	39.768	3.462	0.000				
Economic results	Profitability	ProEcon1	0.860	47.165	3.792	0.000	0.951	0.611	0.954	0.956
		ProEcon2	0.830	53.427	3.617	0.000				
		ProEcon3	0.791	33.250	2.782	0.000				
	Reputation	RepEcon1	0.833	47.899	3.233	0.000				
		RepEcon2	0.791	33.271	2.717	0.000				
		RepEcon3	0.789	34.091	2.452	0.000				

Variables		Indictors	Factor Loadings	T Statistics (|O/STDEV|)	VIF	P-Values	CA	AVE	CR	
									rho_a	rho_c
		RepEcon4	0.791	36.234	2.447	0.000				
	Customer satisfaction	CusEcon1	0.803	39.183	2.848	0.000				
		CusEcon2	0.815	37.047	2.580	0.000				
		CusEcon3	0.772	29.973	2.555	0.000				
		CusEcon4	0.670	21.589	1.826	0.000				
	Environmental Issues	EIEcon1	0.688	21.774	1.911	0.000				
		EIEcon2	0.758	28.180	2.328	0.000				
		EIEcon3	0.727	23.549	2.114	0.000				

(Factor loading > 0.7, CA >0.7, AVE > 0.5 and rho_a, rho-c≥ 0.70)
Authors' Elaboration

6.2.3 Discriminant Validity (DV)

The discriminant validity test determines the distinct nature of each construct in the PLS (Hair *et al.*, 2022). We used two standards to analyse DV: Heterotrait–Monotrait ratio (HTMT) and Fornell–Larker. Henseler *et al.* (2015) propose HTMT, based on the multitrait-multimethod matrix, to assess discriminant validity. Finally, the HTMT technique offered a better approach to determining discriminant validity between constructs. To evaluate DV, more conservative studies suggest values of HTMT to be below 0.9 (Hair *et al.*, 2019). The DV study is shown in Table 6.

Table 6. Discriminant validity analysis.

Constructs	Economic	Ecosystem	Environmental	Social
Economic				
Ecosystem	**0.884**			
Environmental	0.794	**0.789**		
Social	0.870	0.879	**0.750**	

Authors' elaboration

If the HTMT value is below 0.90, DV can be established between two reflective constructs. As shown in Table 6, the Heterotrait-Monotrait ratio (HTMT) for all constructs was lower than 0.884, so all constructs have an appropriate discriminant validity. Given the present research, we can support that the questions of the ecosystem, economic results, and environmental and social effects are different, and these questions are distinct from each other. In addition, there is the weakest correlation among environmental and social questions.

6.3. Structural model

In this study, the Variance Inflation Factor (VIF) was used to assess collinearity to evaluate the structural model (Hair *et al.*, 2020). VIF values equal to or below 5 are suggested (Hair *et al.*, 2020). Table 5 presents the outcome of the collinearity test for the structural model. Values of VIF for all individual constructs are below 5; thus, there are no inner collinearity issues.

6.3.1. Coefficients measure: R^2 value - F-Square (f^2 value) - Stone-Geisser's (Q^2 value)

According to Table 7, the R^2 value for "economic, environmental and social" are 0.796, 0.603 and 0.702, representing high values (Cohen, 1988). F^2 is the change in R^2 when exogenous variables are removed from the model (Hair *et al.*, 2021). To evaluate the effect size of the structural coefficients, the Cohen (1988) classification has been used. This value shows the

proportion variance, which is not explained (Hair *et al.*, 2016). The findings reveal (Table 7) that the f-square effect size ranges from 0.117 (negligible) for economic on social to 2.355 (high) for social on the ecosystem. The Q^2 value measures whether a model has predictive relevance ($Q^2 > 0$). Table 7 shows that the range of Q^2 values was 0.598- 0.724, indicating that values were well reconstructed, and the model has predictive relevance.

Table 7. Explanatory power

Predictor(s)	Outcomer(s)	R-square	R-square adjusted	f-square	Q Square
Ecosystem	**Economic**	0.796	0.793	0.181	0.724
Environmental				0.144	
Social				0.117	
Ecosystem	**Environmental**	0.603	0.602	1.152	0.598
Ecosystem	**Social**	0.702	0.701	2.355	0.699

Authors' Elaboration

The Q2 result of 72.4% illustrates that the information contained in the data can be explained by the model, confirming the predictive relevance value of the model. Meanwhile, 27.6% were explained by other variables and errors. This elaboration shows that the conceptual model has a high prediction ability, and its results can be considered for the whole population.

6.3.2. Goodness-of-Fit Index (GOF)

The goodness of Fit (GOF) of a statistical model describes how a model fits to verify that the model sufficiently explains the empirical data (Tenenhaus *et al.*, 2005). The GOF values lie between 0 and 1, where values of 0.10 (small), 0.25 (medium), and 0.36 (large) indicate the global validation of the path model. The GOF values, shown in Table 8, lie between 0 and 1, with a value of over 0.36 indicating an acceptable model fit.

Table 8. Goodness-of-Fit index calculation.

Construct	AVE	R^2
Economic	0.611	0.796
Environmental	0.555	0.603
Social	0.614	0.602
Ecosystem	0.562	
Average	**0.585**	**0.667**
$\mathbf{AVE \times R^2}$	**0.390**	
$\mathbf{GOF} = \sqrt{\mathbf{AVE \times R^2}}$	**0.625**	

Authors' Elaboration

The results in Table 8 show that the values of GOF of the model were measured as 0.625, indicating the path model's validation.

6.4. Model Fit

Fit measures in SmartPLS software are the following: Exact fit criteria d_ULS and d_G, standard root means square residual (SRMR) and NFI (Sarstedt *et al.*, 2017). These criteria's values with a certain threshold, e.g., A value less than 0.10 or 0.08 for SRMR (Hu and Bentler,

1998) and the NFI values above 0.90, usually represent an acceptable fit (Bentler and Bonett, 1980). The SRMR value was 0.08, which was considered well-fitting also. While the NFI value is 0.641 which is lower than the recommended value of at least 0.90. Thus, the model meets the model fit criteria for SRMR but not the NFI criteria. Schuberth *et al.* (2022) defined that d_ULS and d_G represent two different ways to compute discrepancy. The upper bound of the confidence interval should be larger than the original value of the d ULS (10.08) and d_G (4.80) fit criteria to indicate that the model has a good fit. Finally, the fit measures provided by the SmartPLS demonstrate the good-fitting model.

Table 9. Model fit indicators

Fit indices	SRMR	d_ULS	d_G	NFI
Value in study	0.081	10.08	4.809	0.641
Suggest value	< 0.10	> 0.05	> 0.05	> 0.80

Authors' elaboration

Assessing the model fit in SEM is one of the main steps before testing the research hypotheses, whether it evaluates a simple or a complex model. Table 9 shows that all values of model fit indicators are sufficient within the acceptable range. Hence, we can evaluate the statistical hypothesis testing.

6.5. Hypotheses Testing

All the hypothesised relationships among the variables were supported as illustrated by Fig. 2 and Tables 10 and 11. This study used the bootstrapping technique to test the significance of estimated path coefficients with 10,000 bootstrap samples, was opted for this dimension thanks to the right definition of the model, the computational resources and because it allow a more stable results (Salibian-Barrera and Zamar, 2002; Hair et al. 2022). The relationship between ecosystem and environment had a beta value of 0.777, and ecosystem and social effects had a beta value of 0.838 and were significant at P-Value = 0.000 (<0.05). In addition, the influence of the ecosystem on economic results (β = 0.393, t-value=5.750), environmental and economic results (β = 0.279, t-value=6.193), and social effects and economic results (β = 0.290, t-value= 3.751) were found significant at P-Value = 0.000 (<0.05). Regarding this data, we can deduce that social effects (0.290) have more consequences on economic results than environmental effects (0.279). Considering economic sanctions and the COVID-19 crisis in Iran, most SMEs stakeholders and shareholders chose factors that have a more influential role in economic performance. Thus, paying attention to social factors such as building a university can help to grow and develop this area for better and improved economic conditions. Hence, social aspects are considered more important than environmental issues. We analysed the total and specific indirect effects to determine the role of social and environmental variables in mediating the relationship between ecosystem and economic results. We found that the relationships between ecosystem, social effects and economic results and ecosystem, environmental effects and economic results with significant path coefficients of 0.243 (t-value=3.570) and 0.217 (t-value=6.306), with total effects value of 0.460 (t-value=7.752) were significant at P-Value = 0.000 (<0.05). Thus, a mediating role of environmental and social effects has a positive effect on economic results. Fig. 2 shows the path coefficients, T-values, and R2 values, indicating that the model has a good fit.

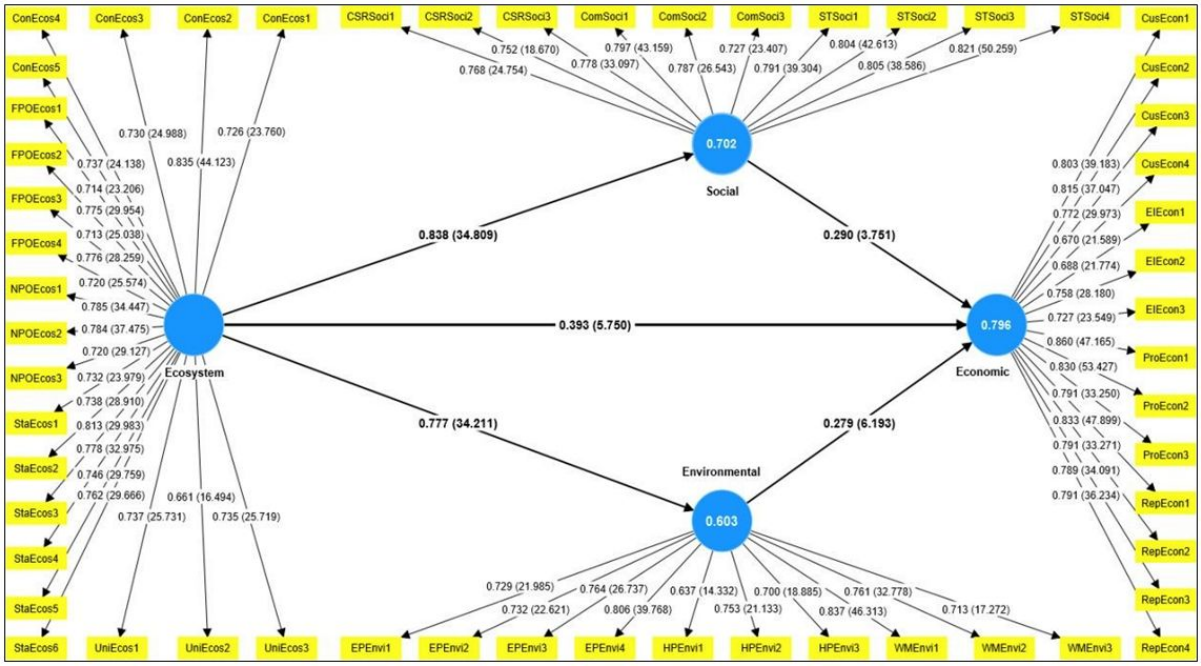

Fig. 2. Path coefficients, T- values, and R^2 values
Authors' Elaboration

Figure 2 and Tables 10 and 11 summarise hypotheses testing results for direct and indirect effects with Path coefficients and T- Values.

Table 10. Relationships between variables (direct effects)

Hps	Paths			Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-Values	Result
H2	Ecosystem	→	Economic	0.393	0.388	0.068	5.750	0.000	Accepted
H1	Ecosystem	→	Environmental	0.777	0.779	0.023	34.211	0.000	Accepted
H1	Ecosystem	→	Social	0.838	0.839	0.024	34.809	0.000	Accepted
H1	Environmental	→	Economic	0.279	0.280	0.045	6.193	0.000	Accepted
H1	Social	→	Economic	0.290	0.294	0.077	3.751	0.000	Accepted

Authors' Elaboration

Table 11. Relationships between variables (total and indirect effects)

Hps	Paths			Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-Values	Result
Total indirect effects	Ecosystem	→	Economic	0.460	0.466	0.059	7.752	0.000	Accepted
Specific indirect effects	Ecosystem → Environmental → Economic			0.217	0.218	0.034	6.306	0.000	Accepted
	Ecosystem → Social → Economic			0.243	0.248	0.068	3.570	0.000	Accepted

Authors' Elaboration

Tables 10, and 11 present the significant results for all variables. Hence, all hypotheses were accepted because all path coefficients were significant.

Environmental and social effects have a significant impact on the economic results. In addition, ecosystems have positive direct (0.460) and indirect impacts by environmental (0.217) and social (0.243) effects on economic performances.

7. Discussion

As posited in Selezneva *et al.* (2023) and Fedele et al. (2024), business models and related ecosystems are facing several transformations for example in terms of collaboration and blended boundaries that determine several studies and contributions (Huang *et al.*, 2022). This research improves the knowledge of sustainable B2B ecosystem business model; it is one of the first in expanding the multi-agent perspective and the model of the traditional B2B ecosystem concept, moving it to an ecosystem-integrated B2SI components to produce relevant impacts on economic, social and environmental conditions in an emergent country in a crisis condition. The study's findings validated all the hypotheses proposed and answered the research questions. As evidenced by the model relating to the first research questions, the ecosystem's relationship impacts the TBL dynamics. The conduct of the SEM analysis highlighted that there is a significant positive and direct impact of the ecosystem on every dimension of the TBL approach, a result that is not to be taken for granted given that most of the studies focus on evaluating individual company performances and with contrasting results in terms of economic performance linked to the achievement of sustainable objectives (Cek and Eyupoglu, 2020; La Torre *et al.* 2021). Furthermore, attention to the environmental and social dimensions indirectly affects economic results, thus answering the second research question and eliciting relevant considerations. SMEs enter into relevant partnerships to reduce their risks regarding investments in both environmental and social dimensions, but as posed by Ramaano (2024) the lack of a collaborative and coherent strategy could reduce the impact that business could have in empower local communities. This study was conducted during a very particular period for the country under analysis; in addition to the COVID-19 pandemic, the persistence of its transformations was apparent. Hence, the questionnaire was administered during a scenario of social instability. In light of this, it emerges that in contexts marked by crises, health, social, environmental or other, certainly, the rise and organization of effective ecosystems in the B2B sector appear to be an advantageous solution (Bhattacharyya and Thakre, 2020; Freay *et al.*, 2022), both for adopting practices that curatively address detrimental environmental and social conditions and for achieving positive economic dimensions, as it could be shown that the environmental and social practices adopted have a positive effect on economic results. In this respect, the higher values on the economic results dimension items show that adopting curative practices (Czinkota and Kaufmann, 2017) has positive effects on performance, reputation and legitimacy (Czinkota et al., 2014), customer cultural alignment and innovative solutions (Czinkota *et al.* 2020). Finally, this advanced B2B ecosystems model in a B2SI and attention to TBL dynamics can change the business model of SMEs and have curative effects on economic results, especially during critical events such as the COVID-19 crisis, confirming that we are witnessing a new collaborative model (Clauss 2017; Foss and Saebi, 2015; Vrontis *et al.* 2022). This is for example the case for Greece where firms and institutions could lead to green marketing applications and enhance a sustainable behaviour between the stakeholders (Papadopoulos et al. 2010) but also and other relevant emerging countries firms where boards and attention to sustainability lead to sustainability actions and reporting (Ashraf et al. 2020, Ashraf and Nazir, 2023). The positive value measured for the sub-construct of innovation confirms that the SMEs that create and decide to participate in an ecosystem do anything in terms of innovation (Sharmelley and Ray, 2018).

8. Implications

8.1 Theoretical Implications

At theoretical level the study contributes to the literature on B2B research and business ecosystems theories, particularly in emerging markets. So far, studies have concentrated on the impact of sustainable business initiatives at the organizational-level outcome in terms of TBL performance rather than on a system-level one (Hahn *et al.*, 2015; Williams *et al.*, 2021). Most academic research focuses on single firms (Chen *et al.*, 2023; Huang *et al.*, 2022; Salam *et al.*, 2022) and does not consider ecosystems' rise and the linked node with the TBL approach. The study fills the gap of studies on emerging markets research focusing on the B2B side that, till now, has still been scarce (Pels & Sheth, 2017). Moreover, this study's findings confirm that the ecosystem relationships between different participants and the TBL approach impact the SME business model's re-design in all dimensions (Davies and Doherty, 2019; Joyce and Paquin, 2016; Laukkanen and Tura, 2022). We could increasingly regard firms as a "bifacial Giano", which, stimulated by critical events like the pandemic, a war, and global sustainability crises, are adapting their business model at a much more ecosystem-related level to reach the desired social, environmental and economic results. Paradoxically, this condition shows that SMEs adapt their culture and organization to create and maintain relations with social and institutional stakeholders and adopt a Curative Marketing strategy answering to community needs (Kaufmann *et al.*, 2019; Czinkota *et al.*, 2020. Finally, there is insufficient evidence on how emerging market people and firms face socio-economic inequities and deprivations that could induce social tensions and frictions, resulting in high business and social risks or how social inclusion and group participation can mitigate this risk (Gupta, 2010) and increased innovation and can count on a potential positive impact in terms of sales and margins (Kumar & Christodoulopoulou, 2014; Sadiku-Dushi *et al.*, 2019; van Riel *et al.*, 2021). Conclusively, this study advances ecosystem knowledge and its relevance in Marketing, Governance, and B2B Network Management matters and ecosystem theory (Aarika-Stenroos & Ritala, 2017), proposing a new conceptual framework to study the evolution of the B2B to B2SI ecosystem. Operating in ecosystems allows for greater coordination and more effective management of resources with positive implications for the ecosystem, the externalities it produces and the company itself. Thus, SMEs can benefit from working in synergy with heterogeneous stakeholders, ensuring that such cooperation pursuing the Curative Marketing philosophy does not involve a loss of competitive autonomy.

8.2 Managerial Implications

At managerial level the study has several implications. In scenarios characterized by instability and crisis, small and medium-sized enterprises (SMEs) must be prepared to adapt their business models to engage effectively with social and institutional partners. This adaptation is crucial for adopting Triple Bottom Line (TBL) practices, which emphasize a balanced focus on social, environmental, and economic performance. Companies must not only integrate sustainable practices but also proactively manage innovation and collaboration, particularly in eco-innovation projects (Giacomarra et al., 2019). Firms operating in such contexts must do so with greater efficacy, conscientiousness, and responsibility, ensuring they preserve the environment while simultaneously creating societal value. The research aims to encourage managers to enhance the effectiveness of this expanded social and business modelling process, where diverse actors interact to address TBL needs and formulate strategic approaches that are resilient and capable of achieving TBL objectives with minimized societal impact. Companies must also develop and strengthen their curative capabilities. By aligning their actions with the principles of curative marketing, organizations can derive multifaceted benefits—economic, social, and environmental—for themselves, their stakeholders, and the broader community. This alignment necessitates a long-term perspective and a willingness to invest in training and

skill development to foster a corporate culture oriented towards sustainability. The integration of ecosystem theory and curative marketing is central to advancing managerial strategies in these environments. Ecosystem theory emphasizes the interconnectedness and interdependence of various actors—such as businesses, governmental bodies, NGOs, and communities—within a shared environment. In practice, this means that managers must not only recognize their role within this broader network but also actively engage in shaping it by fostering collaborations and partnerships that extend beyond traditional business relationships. These partnerships, which include NGOs, governmental institutions, universities, and other key stakeholders, are essential for enhancing social and environmental impact. Through these collaborations, companies can share knowledge and resources, thereby developing innovative and sustainable solutions that are better tailored to community and environmental needs.

A critical managerial strategy involves the seamless integration of sustainability into everyday decision-making processes. Managers should adopt performance indicators that account not only for financial outcomes but also for social and environmental impacts. Such an integrated approach ensures more informed, long-term decisions that align with TBL objectives and promote a holistic understanding of value creation. Additionally, transparent and continuous communication with stakeholders about sustainability practices and their impact is vital. This approach not only improves corporate reputation and strengthens stakeholder trust but also creates a feedback loop that can guide further improvements in sustainability practices.

Innovation driven by sustainability is another key area for managerial focus. SMEs should encourage sustainable innovation as a core component of their growth strategy. This includes investing in research and development to create products and services with lower environmental impacts and higher social benefits. The adoption of green technologies and sustainable production processes can enhance operational efficiency and reduce long-term costs. Curative marketing plays a vital role in this context by focusing on restorative and proactive strategies that benefit the company and its stakeholders, promoting a cycle of positive reinforcement in social legitimacy and economic performance.

In conclusion, managers must recognize that adopting sustainable practices and innovative business models is not only an ethical and environmental imperative but also a fundamental strategy for long-term economic success. Investing in sustainability and social responsibility not only mitigates risks but also opens new market opportunities and enhances the company's competitive edge. By leveraging ecosystem theory and curative marketing, managers can more effectively navigate complex business environments, fostering resilient and sustainable growth that benefits all stakeholders involved.

8.3 Social and Political implications

Political decision-makers are advised to encourage the new sustainable-ecosystemic strategies to protect their nation's entrepreneurial fabric and strengthen its attractiveness by attracting greater investment capital. They should be able to capture and must reward not so many companies that bring wealth and jobs to their soil, but companies that are able to create real wealth for their nation in the short and long term, Ashraf and Nazir (2023) have demonstrated as award and other initiatives as firms characteristics are in fact able to influence the sustainability in they reporting actions. It is also relevant that they must also be able to collaborate and nurture ecosystems by cherishing and strengthening the position of small and medium-sized enterprises in their territory; this can be done not only through financial incentive programmes but also by involving third sector associations that can compensate and fulfil some secondary activities for them. Moreover, public decision-makers should initiate and raise public awareness to reward and respect the most virtuous enterprises by fostering curative marketing cycles that also bring prestige to realities such as those identified that manage to create social and environmental benefits while fulfilling their economic purpose.

Policymakers, in disseminating policies for the collective good, can tap into cultural and teleological elements ingrained in the nation under study, closely aligned with curative marketing principles. Rather than imposing radical changes, this approach enhances existing traditions, respects culture, embraces social changes and protects the environment without compromising profitability. The study advocates for multidisciplinary collaboration in creating innovative sustainable business models capable of proactively co-creating original strategies and behaviours aligned with Triple Bottom Line (TBL) principles for long-term curative solutions.

7.1 Limitations and future research

The current research is limited to a single nation, prompting suggestions for future studies. Opportunities for further investigation include enlarging sample sizes and conducting comparative studies across emerging, developing, and mature countries. To address limitations, future research should explore individual dimensions of the TBL through qualitative case studies, investigating their interrelated impacts and relationships. Cultural influences, particularly religious and theological practices, are identified as intriguing avenues for exploration in understanding ecosystem development and stakeholder relationships. Future studies could analyse how diverse cultural backgrounds shape priorities in SME actions and ecosystem interactions, focusing on social, environmental, and economic outcomes. Additionally, research is needed to explore the potential of the crowdsourcing model within B2SI ecosystems, validating conceptual models through empirical studies. Also, future studies could validate the transition from a firm-based innovation strategy to an "actors for actors' model" supporting SMEs in overcoming competitive challenges and fostering shared economic, social, and environmental behaviour with co-responsible agents. This shift aims to better support communities in addressing their social and environmental concerns. Lastly, according to Table 3, the biggest sample of this research are males. Hence, this gender distribution might have detrimentally affected the results in this context so future research should focus on different dimension on the side of firms and professional socio-demographic dimension.

References

Aarikka-Stenroos, L., & Ritala, P. (2017), Network management in the era of ecosystems: Systematic review and management framework. *Industrial Marketing Management*, 67, 23-36.

Acar, O.A., 2019. Motivations and solution appropriateness in crowdsourcing challenges for innovation. *Research Policy* 48, 103716.

Annesi, N., Frey, M., Battaglia, M., & Gragnani, P. (2020), Le cooperative e l'innovazione sostenibile: le nuove sfide dell'Agenda 2030. *Le cooperative e l'innovazione sostenibile: le nuove sfide dell'Agenda 2030*, 77-110.

Arora, M., Gupta, J., Mittal, A., & Prakash, A. (2024), Achieving sustainable development goals (SDGs) through corporate sustainability: a topic modeling-based bibliometric analysis approach. *Kybernetes*.

Arya, B., Horak, S., Bacouel-Jentjens, S. & Ismail, K. (2023), "Leading entrepreneurial sustainability initiatives in emerging economies", International Journal of Emerging Markets, Vol. 18 No. 1, pp. 64-85. https://doi.org/10.1108/IJOEM-08-2020-0951

Ashraf, Y., & Nazir, M. S. (2023), Corporate sustainability and environmental reporting: triggers and consequences. *Environmental Science and Pollution Research*, *30*(26), 68743-68769.

Ashraf, Y., Nazir, M. S., & Rashid, M. A. (2020), Triggers of sustainability reporting in the banking industry of Pakistan. *Paradigms*, *14*(2), 1-7.

Autio, E., & Thomas, L. (2014), *Innovation ecosystems*. The Oxford handbook of innovation management (pp. 204-288),

Avelino, F., Wittmayer, J. M., Pel, B., Weaver, P., Dumitru, A., Haxeltine, A., & O'Riordan, T. (2019), Transformative social innovation and (dis) empowerment. *Technological Forecasting and Social Change*, 145, 195-206.

Bae, S., Masud, Md., & Kim, J. (2018), A Cross-Country Investigation of Corporate Governance and Corporate Sustainability Disclosure: A Signaling Theory Perspective. *Sustainability*, *10*(8), 2611.

Basile, G., Ardakani, M. F., Mazzitelli, A., & Sakka, G. (2022), Innovation and Corporate Social Responsibility During the Covid-19 in Ardakan (Iran), (2022), *Management Decision*. 60(10), 2743-2769.

Bentler, P. M., & Bonett, D. G. (1980), Significance Tests and Goodness-of-Fit in the Analysis of Covariance Structures, *Psychological Bulletin*, 88, 588-600.

Bhattacharya, C. B. (2010), Introduction to the special section on stakeholder marketing. *Journal of Public Policy & Marketing*, 29(1), 1-3.

Bhattacharyya, S.S., & Thakre, S. (2021), Coronavirus pandemic and economic lockdown; study of strategic initiatives and tactical responses of firms, *International Journal of Organizational Analysis,* 29 (5), 1240-68.

Blok, V., & Lemmens, P. (2015), The emerging concept of responsible innovation. Three reasons why it is questionable and calls for a radical transformation of the concept of innovation. In *Responsible innovation 2* (pp. 19-35), Springer, Cham.

Brophy C, Stewart C, Caldwell G, Donovan J, Belek Fialho Teixeira M, Dedehayir O, Brogden, L. (2020), Designing an Open Innovation Orchestrator: the case of Australia's Advanced Robotics for Manufacturing (ARM), *Hub. CERN IdeaSquare Journal of Experimental Innovation* (CIJ) 4(1): 16-22.

Cek, K., & Eyupoglu, S. (2020), Does environmental, social and governance performance influence economic performance? Journal of Business Economics and Management, 21(4), 1165-1184.

Chatterjee, S., Chaudhuri, R. & Vrontis, D. (2022), Big data analytics in strategic sales performance: mediating role of CRM capability and moderating role of leadership support, *EuroMed Journal of Business, Vol. 17 No. 3, pp. 295-311. https://doi.org/10.1108/EMJB-07-2021-0105*

Chen, H., Jin, Z., Su, Q. & Yue, G. (2020), The roles of captains in megaproject innovation ecosystems: the case of the HongKong–Zhuhai–Macau Bridge'. Engineering, Construction and Architectural Management, 28, 662–680.

Chen, Y.A., Guo, S.-L., & Huang, K.-F. (2023) Antecedents of internationalization of Taiwanese SMEs: a resource-based view, *International Journal of Emerging Markets,* ahead of print.

Chesbrough, H., & Di Minin, A. (2014), Open social innovation. *New frontiers in open innovation*, *16*, 301-315.

Clauss, T. (2017), Measuring Business Model Innovation: Conceptualization, Scale Development, and Proof of Performance, *R&D Management, 47 (3), 385-403.*

Cohen, J. (1988), *Statistical power analysis for the behavioral sciences* (2nd Ed.), New York: Routledge.

Cortese, D., Civera, C., Casalegno, C., & Zardini, A. (2024), Transformative social innovation in developing and emerging ecosystems: a configurational examination. *Review of Managerial Science*, *18*(3), 827-857.

Cortez, R. M., & Johnston, W. J. (2020), The Coronavirus crisis in B2B settings: Crisis uniqueness and managerial implications based on social exchange theory. *Industrial Marketing Management*, *88*, 125-135.

Czinkota, M., Kaufmann, H. R., & Basile, G. (2014), The relationship between legitimacy, reputation, sustainability and branding for companies and their supply chains. *Industrial Marketing Management*, *43*(1), 91-101.

Czinkota, M., Kaufmann, H. R., Basile, G., & Ferri, M. A. (2020), For-Benefit company (fBComp): An innovative social-business model. The Italian case. *Journal of Business Research*, 119, 377-387.

D'Amato, D., Wan, M., Li, N., Rekola, M., & Toppinen, A. (2018), Managerial Views of Corporate Impacts and Dependencies on Ecosystem Services: A Case of International and Domestic Forestry Companies in China. *Journal of Business Ethics*, *150*(4), 1011–1028. http://www.jstor.org/stable/45022613

Davies, I.A., Doherty, B. (2019), Balancing a Hybrid Business Model: The Search for Equilibrium at Cafédirect, *Journal of Business Ethics,* 157, 1043 – 1066.

Dezi, L., Ferraris, A., Papa, A., & Vrontis, D. (2019), The Role of External Embeddedness and Knowledge Management as Antecedents of Ambidexterity and Performances in Italian SMEs. *IEEE Transactions on Engineering Management*, 68, 360-369.

Dezi, L., Xhimi H., Calabrese, M., Mercuri F. (2022), Open total quality management in the circular economy age: a social enterprise perspective through the case of Patagonia Total quality management & business excellence, 1-15.

Dijkstra, T.K., & Henseler, J. (2015), Consistent and asymptotically normal PLS estimators for linear structural equations. *Computational Statistics & Data Analysis*, 81, 10–23.

Dominici, G. (2021), Socio-economic ecosystems: challenges for sustainable development in the digital era. *KYBERNETES*, *50*(10), 2697-2700.

Foss, N. J., & Saebi, T. (2015), *Business Model and Business Model Innovation: Bringing Organization into the Discussions*. In Business Model Innovation: The Organizational Dimension (pp. 1-23), Oxford University Press

Giacomarra, M., Crescimanno, M., Sakka, G. & Galati, A. (2020), Stakeholder engagement toward value co-creation in the F&B packaging industry, *EuroMed Journal of Business*, Vol. 15 No. 3, pp. 315-331. https://doi.org/10.1108/EMJB-06-2019-0077

Gupta, V. (2010), A Culturally Sensitive Approach to Sustainable Business in Emerging Markets: How to Manage the Challenges and Opportunities in View of the Global Economic Crisis?. *Global Management Journal*, 2(1), p19-32.

Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2015), Tensions in corporate sustainability: Towards an integrative framework. *Journal of business ethics*, 127(2), 297-316.

Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020), Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022), A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM), 3rd Edition. Thousand Oaks: Sage.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N.P., & Ray, S. (2021), *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R. Cham*: Springer.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2018), Advanced issues in partial least squares structural equation modeling (PLS-SEM), Thousand Oaks: Sage.

Hair, J., Hollingsworth, C.L., Randolph, A.B. & Chong, A.Y.L. (2017), An updated and expanded assessment of PLS-SEM in information systems research, *Industrial Management & Data Systems*, 117(3), 442-458.

Hair, J.F., Jr., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. A. (2016), Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM); Sage Publications: Thousand Oaks, CA, USA.

Hair, J.F., Risher, J.J., Sarstedt, M. & Ringle, C.M. (2019), When to use and how to report the results of PLS-SEM, European Business Review, 31(1), 2-24.

Hammon, L. & Hippner, H. (2012), Crowdsourcing. *Business & Information Systems Engineering*, 4 (3), 163–

Henseler, J., Hubona, G., & Ray, P.A. (2016), Using PLS Path Modeling in New Technology Research: Updated Guidelines. *Industrial Management & Data Systems*, 116(1):2-20.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015), A New Criterion for Assessing Discriminant Validity in Variance-based Structural Equation Modeling., *Journal of the Academy of Marketing Science*, 43(1): 115-135.

Henseler, J., Ringle, C.M., & Sinkovics, R.R. (2009), The Use of Partial Least Squares Path Modeling in International Marketing. In *New Challenges to International Marketing*; Emerald Group Publishing Limited: Bingley, UK, 20, 277–319.

Hertenstein, P., and Alon, I. (2022), A learning portal model of emerging markets multinationals. *Global Strategy Journal*, *12*(1), 134-162.

Holland, J. H. (2002), Complex adaptive systems and spontaneous emergence. In *Complexity and industrial clusters* (pp. 25-34), Physica-Verlag HD.

Holm, D.B. Eriksson, K., Johanson, J. (1999) Creating Value Through Mutual Commitment to Business Network Relationship. *Strategic Management Journal*, 20(5), 467 – 486

Howe, J. (2008), *Crowdsourcing: How the power of the crowd is driving the future of business*. Random House.

Hu, L.-t., & Bentler, P. M. (1998), Fit Indices in Covariance Structure Modeling: Sensitivity to Underparameterized Model Misspecification, *Psychological Methods*, 3(4): 424-453.

Huang, Y., Surface D.L., Zhang C., (2022), Corporate social responsibility and sustainability practices in B2B markets: A review and research agenda, *Industrial Marketing Management,* 106, 219–239.

Ivanova, I., Smorodinskaya, N., & Leydesdorff, L. (2020), On measuring complexity in a post-industrial economy: The ecosystem's approach. *Quality & Quantity*, *54*(1), 197-212.

Jacobides, MG., Cennamo, C., Gawer, A., (2018), Towards a theory of ecosystems. *Strategic Management Journal*, 39(8):2255-2277.

Javalgi, R. G., White, D. S., & Ali, D. (2018), Corporate social responsibility and stakeholder engagement: A conceptual model and research agenda. Journal of Business Ethics, 151(4), 835-854.

Joyce, A., Paquin, R.L., (2016), The triple layered business model canvas: A tool to design more sustainable business models, *Journal of Cleaner Production,* 135, 1474 – 1486.

Kaufmann, H. R., Czinkota, M. R., & Zakrzewski, M. (2015), B2B and internal relationships and curative international marketing: A polish case study. *Industrial Marketing Management*, *51*, 69-78.

Kline, R.B. (2015), *Principles and Practice of Structural Equation Modeling*, 4th ed.; Guilford Publications: New York, NY, USA.

Kumar, A., Sharma, S., Vashistha, R., Srivastava, V., Tabash, M.I., Munim, Z.H. and Paltrinieri, A. (2022), "International Journal of Emerging Markets: a bibliometric review 2006–2020", International Journal of Emerging Markets, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJOEM-05-2021-0668

Kumar, V., & Christodoulopoulou, A. (2014), Sustainability and branding: An integrated perspective. *Industrial Marketing Management*, 43(1), 6-15.

La Torre, M., Leo, S., & Panetta, I. C. (2021), Banks and environmental, social and governance drivers: Follow the market or the authorities? Corporate Social Responsibility and Environmental Management, 28(6), 1620-1634.

Laczniak, G. R., & Murphy, P. E. (2006), Normative perspectives for ethical and socially responsible marketing. *Journal of Macromarketing*, 26(2), 154-177.

Lambe, C. J., Wittmann, C. M., & Spekman, R. E. (2001), Social exchange theory and research on business-to-business relational exchange. *Journal of business-to-business marketing*, *8*(3), 1-36.

Laukkanen, M., Tura, N., (2022), Sustainable value propositions and customer perceived value: Clothing library case, *Journal of Cleaner Production,* 378, 134321.

Lowry, P. B., & Gaskin, J. (2014), Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. *IEEE transactions on professional communication*, *57*(2), 123-146.

Möller, K., Nenonen, S., & Storbacka, K. (2020), Networks, ecosystems, fields, market systems? Making sense of the business environment. *Industrial Marketing Management*, *90,* 380-399.

Montera, R., Nevi, G., Cucari, N., & Esposito De Falco, S. (2024), How firms adjust their SDG adoption in response to COVID-19 outbreak: a regional perspective. *Corporate Governance: The International Journal of Business in Society*, 24(3), 559-575.

Nave, A., Franco, M., (2019), University-Firm cooperation as a way to promote sustainability practices: A sustainable entrepreneurship perspective. J*ournal of Cleaner Production*, 230:1188-1196

Ostrom, E. (2009), A general framework for analyzing sustainability of social-ecological systems. Science, 325(5939), 419-422.

Pangboonyanon, V. & Kalasin, K. (2018), "The impact of within-industry diversification on firm performance: Empirical evidence from emerging ASEAN SMEs", International Journal of Emerging Markets, Vol. 13 No. 6, pp. 1475-1501. https://doi.org/10.1108/IJOEM-05-2017-0174

Papadopoulos, I., Karagouni, G., Trigkas, M. & Platogianni, E. (2010), "Green marketing: The case of Greece in certified and sustainably managed timber products", *EuroMed Journal of Business*, Vol. 5 No. 2, pp. 166-190. https://doi.org/10.1108/14502191011065491

Porter, M. E., & Kramer, M. R. (2006), The link between competitive advantage and corporate social responsibility. *Harvard business review*, 84(12), 78-92.

Porter, M. E., & Kramer, M. R. (2011), The Big Idea: Creating Shared Value. How to reinvent capitalism—and unleash a wave of innovation and growth. *Harvard business review*, 89(1-2),

Prahalad c., Mashelkar R. (2010), "Innovation's Holy Grail". Harvard Business Review, July-August, pp. 2-10

Ramaano, A. I. (2024), Sustainable tourism development activities and planning systems in Vhembe district, Limpopo province, South Africa: A comprehensive eco-touristic and sustainability perspective. *Arab Gulf Journal of Scientific Research.*

Ringle, C. M., Sarstedt, M., & Schlittgen, R. (2014), Genetic algorithm segmentation in partial least squares structural equation modeling. *OR Spectrum*, 36(1), 251–276.

Ritter, T., & Pedersen, C. L. (2020), Digitization capability and the digitalization of business model in business-to-business firms: Past, present, and future. *Industrial Marketing Management*, *86*, 180-190.

Russell, M. G., & Smorodinskaya, N. V. (2018), Leveraging complexity for ecosystemic innovation. *Technological Forecasting and Social Change*, *136*, 114-131.

Sadiku-Dushi, N., Dana, L. P., & Ramadani, V. (2019), Entrepreneurial marketing dimensions and SMEs performance. *Journal of Business Research*, 100, 86-99.

Salam, M.A., Jahed, M.A., Palmer, T., (2022), CSR orientation and firm performance in the Middle Eastern and African B2B markets: The role of customer satisfaction and customer loyalty, *Industrial Marketing Management,* 107, 1-13.

Salibian-Barrera, M., & Zamar, R. H. (2002), Bootstrapping Robust Estimates of Regression. The Annals of Statistics, 30(2), 556–582. http://www.jstor.org/stable/2699968

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017), Partial least squares structural equation modeling. *Handbook of market research*, 26, 1-40.

Schuberth, F., Rademaker, M. E., & Henseler, J. (2022), Assessing the Overall Fit of Composite Models Estimated by Partial Least Squares Path Modeling. *European Journal of Marketing*, forthcoming.

Sciarelli, M., & Tani, M. (2015), Sustainability and stakeholder approach in Olivetti from 1943 to 1960: a lesson from the past. *Sinergie Italian Journal of Management*, *33*(Jan-Apr), 19-36.

Selezneva, A., Veselova, A. & Anand, A. (2023), "Business model transformation: what is known and what is to be further developed?", International Journal of Emerging Markets, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJOEM-08-2022-1282

Sharafi, L., Rezaei, R., Mirakzadeh, A., & Karamidehkordi, E. (2019), Designing the Sustainability Model of Agricultural Small and Medium-Size Businesses in Kermanshah Province. *Agricultural Extension and Education Research*, 12(2), 11-24.

Sharmelly, R., & Ray, P. K. (2018), The role of frugal innovation and collaborative ecosystems: The case of Hyundai in India. *Journal of General Management*, *43*(4), 157-174.

Sheth, J. N., & Sinha, M. (2015), B2B branding in emerging markets: A sustainability perspective. *Industrial Marketing Management*, pp. 51, 79–88.

Sheth, J. N., & Uslay, C. (2007), Implications of the revised definition of marketing: from exchange to value creation. *Journal of Public Policy & Marketing*, 26(2), 302–307.

Sigala, M. (2019), A market approach to social value co-creation: Findings and implications from "Mageires" the social restaurant. *Marketing Theory*, 19(1), 27-45.

Smith, N. C., Drumwright, M. E., & Gentile, M. C. (2010), The new marketing myopia. Journal of Public Policy & Marketing, 29(1), 4–11.

Sterner, T., Barbier, E. B., Bateman, I., van den Bijgaart, I., Crépin, A. S., Edenhofer, O., & Robinson, A. (2019), Policy design for the Anthropocene. *Nature Sustainability*, 2(1), 14-21.

Tenenhaus, M., Esposito Vinzi, V., Chatelin, Y. M., & Lauro, C. (2005), PLS Path Modeling. *Computational Statistics & Data Analysis*, 48, 159-205.

Tittensor, D. P., Walpole, M., Hill, S. L., Boyce, D. G., Britten, G. L., Burgess, N. D., & Ye, Y. (2014), A mid-term analysis of progress toward international biodiversity targets. *Science*, 346(6206), 241-244.

van Riel, A.C.R., Andreassen, T.W., Lervik-Olsen, L., Zhang, L., Mithas, S., Heinonen, K., (2021), A customer-centric five actor model for sustainability and service innovation. *Journal of Business Research,* 136, 389–401.

Vrontis, D., Chaudhuri, R., Chatterjee, S., (2022), Adoption of Digital Technologies by SMEs for Sustainability and Value Creation: Moderating Role of Entrepreneurial Orientation, *Sustainability*, 14(13), 7949.

Williams, A., Whiteman, G., & Kennedy, S. (2021), Cross-scale systemic resilience: Implications for organization studies. *Business & Society*, 60(1), 95-124.

Wu, Q., He, Q. & Duan, Y. (2013), Explicating dynamic capabilities for corporate sustainability, *EuroMed Journal of Business*, Vol. 8 No. 3, pp. 255-272. https://doi.org/10.1108/EMJB-05-2013-0025

Xie, B., He, D., Mercer, T., Wang, Y., Wu, D., Fleischmann, K. R., Zhang, Y., Yoder, L. H., Stephens, K. K., Macker, M. & Lee, M. K. (2020), Global health crises are also information crises: A call to action. *Journal of the Association of Information Systems, 71*(12), 1419-1423