

# TRANSLATING THE IMPACT OF INTERNAL AND EXTERNAL FACTORS IN ACHIEVING THE SUSTAINABLE MARKET COMPETITIVENESS: THE MEDIATING ROLE OF MANAGEMENT PRACTICES

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## Abstract

The trend of market competitiveness in light of internal and external factors among sustainable communities is quite rare. Despite relative efforts, prior studies still paid limited attention to evaluating the role of internal and external factors in achieving market competitiveness in view of management practices. Hence, this study aims to examine the impact of internal (firm innovation) and external (business environment, environmental policies) factors in achieving sustainable market competitiveness via management practices in sustainable communities. Data were derived from the World Bank Enterprise Survey 2019 for Greece and analyzed through Partial Least Square Structural Equation Modeling (PLS-SEM). The findings show that management practices mediate the relationship between internal and external factors and sustainable market competitiveness in sustainable communities. The findings also reveal that firm innovation, management practices, and business environment have a significant positive relationship with sustainable market competitiveness. Surprisingly, environmental policies have a positive but insignificant relationship with sustainable market competitiveness in sustainable communities. These useful insights would enable practitioners and policymakers to develop more expedient management strategies to boost sustainable market competitiveness among firms and improve their image in sustainable communities. Even prior studies have paid wide attention to the indicators of market competitiveness, but this is the first study to highlight the market competitiveness in these domains. In the end, we provide several practical implications to elucidate the marketing expert to improve the degree of firm innovation, attain market competitiveness, focus on environmental policies, bring perfection in the business environment, and enhance efficiency in management practices to provide better services among sustainable communities.

**Keywords:** Firm Innovation, Management Practices, Business Environment, Environmental Policies, Sustainable Market Competitiveness

**JEL Classification:** O31, O32, M11, L11, H23

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## 1 INTRODUCTION

In recent decades, firms have been widely applying innovative strategies to tackle environmental issues and gain market competitiveness (Arda et al., 2019; Bucea-Manea-Țoniș et al., 2021; Zhylynska et al., 2020). Especially the UN sustainability agenda 2030 and rapid environmental degradation have increased pressure on industries to improve their practices, policies, and procedures to enhance the social, environmental, and economic efficiencies among societies. Due

to these reasons, firms are using various management practices to meet sustainable market competitiveness inside the boundaries of environmental policies. Sustainable market competitiveness is a vital goal of firms and is needed to improve their growth, ensure survival, and enable them to provide better services in sustainable communities (Razzak, 2022). Traditionally, the organizational capabilities, rare, valuable, inimitable, and non-substitutable resources are perceived as the main drives of market competitiveness among firms (Barney, 1991; Zhang et al., 2020; Razzak, 2022) and important sources of providing better services in the sustainable communities. However, due to rapid technological innovation among industries, conventional sources such as product and cost differentiation and other valuable resources are not sufficient factors in achieving sustainable market competitiveness in sustainable communities (Xu et al., 2019). They need innovative strategies, internal and external sources and support, and efficiency in management practices to meet the communities' requirements in a competitive environment (Khan et al., 2021; Razzak, 2022).

In addition, due to the dynamic changes in the business environment and the emergence of environmental policies and rules due to the UN sustainability agenda, firms are seeking new approaches, innovative structures, and efficient management practices to meet the sustainable market competitiveness in the sustainable communities (Aggarwal, 2011; Cherrafi et al., 2018; Chan et al., 2012; Hermundsdottir & Aspelund, 2021; Fainshmidt et al., 2019; Burger, 2022). Therefore, it is necessary to understand how firms measure and improve their sustainability performance and market competitiveness in the context of the UN sustainability agenda (Elkington, 2018; Carter et al., 2019; Razzak, 2022) and how the integration of various factors in the context of sustainability and firm innovation contributes to achieving the sustainable market competitiveness (Bernardo et al., 2015; Arda et al., 2019; Korsakienė & Raišienė, 2022). Usually, firms hesitate to adopt the practices of sustainability-oriented innovation to gain a competitive advantage due to long payback times and limited environmental benefits (Dey et al., 2019; Hermundsdottir & Aspelund, 2021). Despite significant importance, studies to evaluate the integration of internal and external factors in the relations of management practices to achieve sustainable market competitiveness are still rare (Arda et al., 2019) and need extensive investigation to guide the policymakers.

Following the above arguments, this study has noted a gap of knowledge and attracted researchers' attention to clarify how the internal (firm innovation) and external (business environment, environmental policies) factors in the light of management practices affect the sustainable market competitiveness in sustainable communities. Hence, the current literature integration aroused several uncovered research questions. Thus, the aim of this study is to expose the following shortcomings:

1. What is the effect of internal (firm innovation) and external (business environment, environmental policies) factors and management practices on sustainable market competitiveness in sustainable communities?
2. What is the effect of internal (firm innovation) and external (business environment and environmental policies) factors on the management practices in sustainable communities?
3. Do management practices mediate between internal (firm innovation), external (business environment, environmental policies) factors and sustainable market competitiveness in sustainable communities?

Subsequently, this study contributes to the relevant literature by evaluating the impacts of internal and external factors and management practices on sustainable market competitiveness in

sustainable communities. It also contributes by analyzing the impact of internal and external factors on the management practices in sustainable communities. It also adds by examining the mediating role of management practices between internal and external factors and sustainable market competitiveness. To the best of our knowledge, this is the first study to empirically analyze the mediating role of management practices between internal and external factors and sustainable market competitiveness in sustainable communities. It merged the literature on internal and external factors, management practices, and market competitiveness based on evidence from Greece.

This paper is organized as follows: after the introduction, the second section reviews the status of the relevant studies and the hypotheses development. Section three outlines the methodological procedure. In the fourth part, the results are presented, while discussion, implications, and conclusions are included at the end.

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### 2.1 Internal Factors and the Sustainable Market Competitiveness

Innovation is perceived as the key driver of sustainable development and economic growth and adds new vitality to gain market competitiveness (Ge et al., 2018; Lopes et al., 2022). It shows the capabilities of firms and contributes to their sustainable positioning among communities. Due to these reasons, innovation has received the wide attention of practitioners and policymakers to gain sustainable development and economic growth that ultimately achieves sustainable market competitiveness among sustainable communities (Horbach et al., 2022). Concisely, the innovation practices differentiate firms from competitors and lead to achieving sustainable market competitiveness (Lopes et al., 2022). Particularly, it is important to consider the sustainability factors in the structure of business model innovation to enhance production and economic efficiencies to achieve sustainable market competitiveness (Ge et al., 2018; Lopes et al., 2022). Usually, the practices of firm innovation engage enterprises in the routine of green initiatives, green ecosystem, and green process management and allow them to develop a stable structure of resources to achieve sustainable market competitiveness (Ge et al., 2018). The sustainability-oriented innovation improves production and operation activities among firms and reduces waste and environmental pollution, conserves resources, improves the alignment with the external environment and leads to achieving sustainable market competitiveness (Ge et al., 2018). Particularly, sustainability-oriented innovation has a significant positive relationship with the firm's market competitiveness (Bacinello et al., 2019; Qiu et al., 2019; Suat & San, 2019; Hermundsdottir & Aspelund, 2021). However, previous studies have evaluated the relationship between internal factors and the firm's market competitiveness but are less focused on examining the relationship between firm innovation and sustainable market competitiveness in sustainable communities. Therefore, we can hypothesize in this study that:

**H1:** There is a significant positive relationship between internal (firm innovation) factors and sustainable market competitiveness in sustainable communities.

### 2.2 External Factors and the Sustainable Market Competitiveness

In recent decades, managers have been widely focusing on tackling external factors to ensure the survival of firms in the competitive business environment, also called an innovation ecosystem (Prokop et al., 2021; Peterková et al., 2022). The business environment outlines the social, political,

economic, competitive, and technological environment of business to predict future challenges and find new competencies to handle these challenges (Liu, 2013). Gonçalves-Coelho and Mourão (2007) have presumed that firms should be responsive and adaptive to the dynamic business environment to develop sustainable market competitiveness. In the modern age, firms face vast challenges due to novelty, volatility, broad reach, and the natural environment, which in turn give synergies of economic, social, and environmental processes to gain competitive advantage (Sołoducho-Pelc & Sulich, 2020). Many firms consider the business environment as a part of strategic outlines to adopt the firms' practices according to the ever-changing business environment inside and outside the organization (Wegner et al., 2009; Guimarães & Severo, 2017; Sus & Organa, 2019). Particularly, the integration of environmentalism proactivity in the business strategies of firms can lead to achieving the required market competitiveness (Leonidou et al., 2015; Hojnik et al., 2022).

Likewise, industrial activities have also created severe ecological issues such as global warming, ozone depletion, loss of biodiversity, natural resource scarcity, air pollution, toxic waste, and others, which have forced industries to improve their performance, energy usage, and market competitiveness (Shrivastava, 1995). Sometimes, green innovation strategies and green human resource management practices are applied to boost the values of firms and achieve the desired level of market competitiveness (Lau & Ngo, 2004; Muisyo et al., 2021). Similarly, the green supply chain management strategy is also perceived as a source of sustainable development, financial benefits, reducing environmental risks, and market competitiveness. Notably, sustainability-oriented business strategies are widely applied to respond the environmental issues and gain market competitiveness. Due to its vital importance, many organizations are adopting and integrating the practices of green culture across the firms to achieve the desired degree of market competitiveness (Wang, 2019). However, previous studies have widely focused on the various aspects of environmental initiatives and business environment in various settings but never focused on evaluating the effects of the business environment (trade regulation, labor regulation, political instability, tax rates, access to finance, and business licensing) and environmental policies (energy tax, energy performance standard in operation and usage) in achieving the sustainable market competitiveness in the sustainable communities. Therefore, we can hypothesize in this study that:

**H2:** There is a significant positive relationship between external factors (business environment and environmental policies) and sustainable market competitiveness among firms in sustainable communities.

### 2.3 Internal and external factors and management practices

The strategy of firm innovation is perceived as an important technique of differentiation in the target market to acquire the desired level of market competitiveness. The idea of firm innovation is the management philosophy to restructure the business setup to achieve the anticipated market competitiveness. Particularly, the practices of innovative strategy, organizational culture, technology capability, customers, and supplier relations have a significant positive correlation with the firm innovation performance (Kalay & Gary, 2015). According to Sadikoglu and Zehir (2010), firm innovation performance has a positive correlation with the management practices such as leadership, training, employee management, supplier management, process management, continuous improvement, total quality management, and employee performance. Papa et al. (2018) have noted improvement in innovation performance through knowledge acquisition along with the mediating role of human resource management practices and employee retention. Li (2000) found

that the business environment has a substantial impact on the manufacturing and performance capabilities of firms in the relations of competitive priorities. Bhaskaran and Sukumaran (2007) observed that organizational culture, legal, economic, and regulatory factors can affect management practices in a significant way. In addition, Prajogo et al. (2014) have found positive effects of the environmental management system on green products, green processes, and green supply chain management practices among firms. Tsireme et al. (2012) found that environmental legislation, market-based instruments, and self-regulated incentives can play a critical role in the decision of managers to adopt specific green supply chain management practices in some cases. However, previous studies have widely focused on the various aspects of internal and external factors in the views of management practices but paid limited attention to analyzing the relationship of internal and external factors with the management practices in sustainable communities. Therefore, we can hypothesize in this study that:

**H3:** There is a significant positive relationship between internal (firm innovation), external (business environment and environmental policies) factors and management practices among firms in sustainable communities.

## **2.4 Mediation of Management Practices between Internal and External Factors and the Sustainable Market Competitiveness**

Bringing efficiency to the overall setup of the firms is always the responsibility of the administration to improve their existing capabilities and introduce new management practices to upgrade their productivity and improve customer services to achieve the desired level of market competitiveness in sustainable communities (Mol & Birkinshaw, 2009). Particularly, gaining economic competencies and improving the quality of life are based on the innovation capabilities of countries as well as the operating firms to contribute to the community's development via innovative activities (Ichijo & Nonaka, 2007; Feldmann et al., 2019). Due to these reasons, countries are investing a good amount of money in innovation activities among various communities to enhance their competencies and productivity (Agarwal et al., 2014; Feldmann et al., 2019). However, these advanced initiatives and technological innovations are not driven by the countries but widely the companies where the expert's management practices result in market competitiveness and firms' sustainability (Feldmann et al., 2019). Notably, the skills and education of the firm's administration have significant effects on firm innovation (Pertuze et al., 2019). Therefore, it is essential to evaluate the role of innovation in achieving market competitiveness in the views of management practices in the global context (Feldmann et al., 2019).

Moreover, firms face serious challenges in innovating their product and technological skills and introducing innovation in non-technical areas such as management (Jelaca, 2016). For this reason, appropriate management practices can support firm innovation and help in its survival in 'today's dynamic business environment (Mamula & Popović Pantić, 2015). Therefore, it is important for firms to bring efficiencies in management practices which can strengthen their innovativeness and competitiveness by means of improvement in their activities for the operations and processes (Kharović & Krstić, 2015). Moreover, not only management practices but also the dynamic business environment is also a critical factor in driving firm innovation (Baron & Tang, 2011). Haseeb et al. (2019) discovered a vital effect of technological and social challenges on the competitive advantages of firms. Wang (2019) has suggested that organizational green culture positively influences the market competitiveness of the firm. According to Véganzonès-Varoudakis and Plane (2019), the business environment increases productivity which is essential



for firms' innovation and market competitiveness. Particularly, the business environment and innovation strategies of the firm's administration contribute to market competitiveness in sustainable communities (Prajogo, 2016). Therefore, improvement in the business environment is a significant external factor in firms' innovation and productive performance in transition economies.

Additionally, environmental initiatives and regulations also contribute to enhancing firm innovation and market competitiveness (Porter and Van der Linde, 1995). The environmental policies are perceived as useful for the community's development and perceived as a source of market competitiveness among firms (OECD, 2010), and have positive impacts on management practices (Savage & Ribaud, 2013). Due to these reasons, firms' administrations are widely focusing on integrating environmental policies into their strategic planning to gain market competitiveness and favorable responses from communities. Hamadamin and Atan (2019) have evaluated the impacts of human resource management practices on sustainable market competitiveness along with the mediating role of employee commitment and human capital development. Yang et al. (2018) found a considerable influence of enterprise risk management practices in the context of market competitiveness. According to Torres et al. (2018), knowledge management practices have a significant positive influence on sustainable market competitiveness among firms. Besides that, human capital and processes have a strong mediating effect. At the same time, Kuik et al. (2019) found a positive correlation between environmental policies and market competitiveness in the renewable energy industry. Specifically, the external factors in the context of emerging technologies have boosted the industries to be more competitive and adopted the initiatives of sustainability practices (Hermundsdottir & Aspelund, 2021). However, the previous studies have evaluated the impacts of various internal and external factors in achieving market competitiveness in the views of management practices but are less focused on analyzing the internal (firm innovation) and external (business environment and environmental policies) factors in achieving the sustainable market competitiveness along with the mediating role of management practices. Therefore, we hypothesize in this study that:

**H4:** Management practices mediate between internal (firm innovation), external (business environment and environmental policies) factors and the sustainable market competitiveness among firms in the sustainable communities.

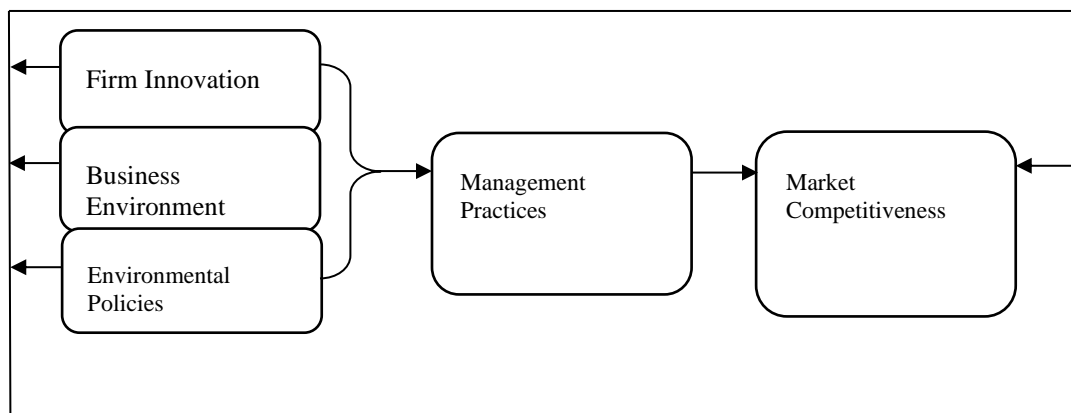


Fig.1 – Conceptual Framework (by authors)

Based on a comprehensive literature review, we integrated the following elements: firms' innovation, business environment, environmental policies, management practices, and market competitiveness. These are used to develop the structure of the conceptual framework (**Figure.1**).

### 3 METHODOLOGY

#### 3.1 Procedure of Sampling

The foundation of this study is laid on the data of the World Bank Enterprise Survey-2019. The survey of the World Bank Enterprise consists of the population, sampling procedure, sample size, industrial division, and additional factors of interest. However, the prime concentration of the survey is on the manufacturing and services sectors. The World Bank Enterprise Survey 2019 is perceived as highly authentic and reliable due to its solid instruments and data collection procedure. The survey prioritized the stratified random sampling technique to collect data from the owners, CEOs, operatives, and senior managers; for details, see Enterprise Surveys ([www.enterprisesurveys.org/en/methodology](http://www.enterprisesurveys.org/en/methodology)).

#### 3.2 Scope and design of the study

The current study obtained data from the World Bank Enterprise Survey of Greece. The data includes information on the business environment, competition, environmental policies, management practices, innovation, sales, and others (Prokop et al., 2022). Yet, this study is only founded on the following elements: environmental policies, business environment, management practices, competition, and firm innovation. The study has selected Greece for the data collection, as Greece has successfully launched the initiatives of ecovillages, ecotowns, eco-building, sustainable supply chain management, sustainability-oriented competition laws, and renewable energies to implement sustainability practices in various communities (Vlachos & Malindretos, 2008; Mylonas et al., 2021). Moreover, the study draws the design in the following manner: (1) firm innovation, business environment, and environmental policies were considered as independent variables, (2) management practices as a mediator, and (3) market competitiveness as a dependent variable to operationalize the study. The details of the measure are included in APPENDIX-A.

#### 3.3 Technique of Analysis

The study applied the technique of PLS-SEM to analyze data and display the image of the results. PLS-SEM has been widely recommended by previous literature due to its interesting features, such as no requirement for normal distribution of data, theory development, predictive study, and others (Bhatia & Kumar, 2022; Rehman et al., 2021). PLS-SEM can easily validate the relationship among constructs in a systematic way, deals with a complex model in one click, and is preferable in formative models (Rehman et al., 2023; Rehman & Zeb, 2022). Therefore, PLS-SEM was the best option to establish a relationship among defined variables in the proposed research framework.

### 4 RESULTS

This study has examined the collected data through PLS-SEM to find results and validate the proposed conceptual model. In the PLS-SEM data analysis procedure, the measurement model and structural model are the main steps to authenticate the various aspects of the results (Zeb et al., 2021; Rasool et al., 2023). In the assessment of the measurement model, factors loading ( $>0.7$ ), composite reliability ( $>0.7$ ), and AVE ( $>0.5$ ) are the main factors of interest (**Table.1**). In the

assessment of the measurement model, discriminant validity and HTMT (**Table.2**), are also the factors of attention to verify the authentication of AVE. However, the results revealed that the factors loading, composite reliability, AVE, discriminant validity, and HTMT had shown satisfactory images of outcomes (**Figure.2**). In addition, to evaluate the multicollinearity among defined variable in PLS-SEM, the approach of variance inflation factor (VIF) is applied to clarify the issues of multicollinearity among constructs.

Tab. 1 – Factors Loading, Composite Reliability, AVE (by authors)

Construct	Items	Factor Loadings	Composite Reliability	AVE
Management Practices (MP)	BMR1	0.803	0.909	0.667
	BMR2	0.823		
	BMR3	0.903		
	BMR9	0.752		
	BMR10	0.794		
Environmental Policies (EP)	BMGD6	0.858	0.905	0.761
	BMGD7	0.891		
	BMGD8	0.868		
Business Environment (BE)	M1(Tra)	0.731	0.831	0.655
	M1(Lab)	0.789		
	M1(P.In)	0.706		
	M1(Tax)	0.674		
	M1(Fin)	0.608		
	M1 (Per)	0.501		
Market Competitiveness (MC)	E-1	0.835	0.896	0.633
	E-2	0.780		
	E-2a	0.785		
	E6	0.769		
	E30	0.808		
Innovation (INO)	H1	0.886	0.901	0.819
	H2	0.924		



Tab. 2 – Discriminant Validity and HTMT (by authors)

	BE	MC	EP	INO	MP		BE	MC	EP	INO	MP
BE	0.674					BE					
MC	0.648	0.796				MC	0.498				
EP	0.325	0.336	0.872			EP	0.340	0.394			
INO	0.445	0.500	0.369	0.905		INO	0.461	0.406	0.451		
MP	0.518	0.567	0.335	0.498	0.817	MP	0.407	0.353	0.390	0.498	

Secondly, in the assessment of the structural model, we applied the procedure of bootstrapping to test the proposed hypothesis. Initially, we evaluated the direct relationship among constructs using a bootstrapping procedure (Table.3). The findings revealed that the firm innovation, management practices, and business environment have a significant positive relationship with sustainable market competitiveness in sustainable communities. Surprisingly, environmental policies have a positive but insignificant relationship with sustainable market competitiveness in sustainable communities. In addition, the study noted that firm innovation, business environment, and environmental policies have a significant positive relationship with management practices. Interestingly, the study found that the management practices mediate between internal, external factors and the sustainable market competitiveness in Greece (Table.4). Further, the study has noted that the values of Q-Square are non-zero, which clarifies that the path model predictive relevance exists in this study. Based on the results, we observed that the business environment and management practices have a greater role in achieving sustainable market competitiveness as compared to firm innovation and environmental policies. Therefore, based on the results, it can be inferred that the firms in Greece are widely focused on trade regulations, labor regulations, political stability, tax rates, access to finance, and business licensing to achieve sustainable market competitiveness.

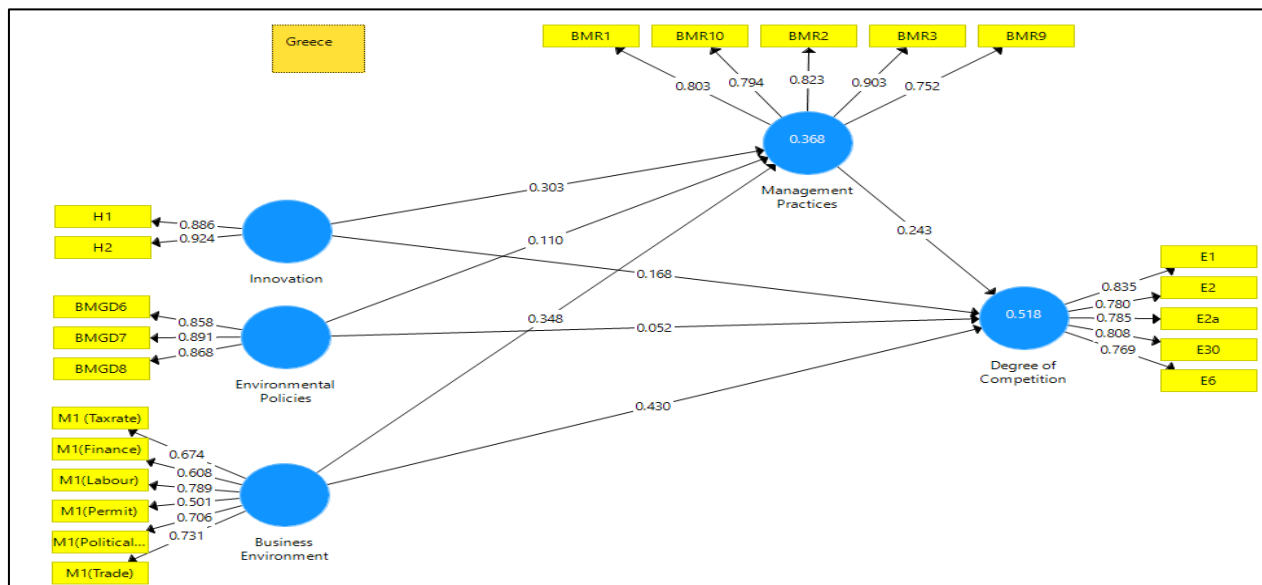


Fig. 2 – Measurement Model (by authors)

It can also be said that the firms in Greece are giving significant attention to solving problems, monitoring performance, achieving targets, offering performance bonuses, and following fair procedures of promotion to achieve sustainable market competitiveness in sustainable communities. It has also been noted that the firms in Greece pay significant attention to product and service innovation as well as process innovation to achieve sustainable market competitiveness in sustainable communities. It is also possible that the firms in Greece have some deficiencies or pay less attention in the context of energy taxes and energy performance standards in operations and quantity in usage to achieve sustainable market competitiveness in sustainable communities. In addition, it has also been noted that the business environment and firm innovation have a stronger relationship with management practices as compared to environmental policies in sustainable communities.

Tab. 3 – Direct Effects (by authors)

Relationship	$\beta$	Sample Mean	SD	t-value	P-value	Decision	R <sup>2</sup>	F <sup>2</sup>	VIF	Q <sup>2</sup>
EP → MC	0.052	0.055	0.037	1.400	0.162	Not Supported	0.518	0.005	1.222	0.321
BE → MC	0.430	0.431	0.045	9.594	0.000	Supported		0.259	1.486	
INO → MC	0.168	0.173	0.044	3.797	0.000	Supported		0.040	1.485	
MP → MC	0.243	0.239	0.051	4.725	0.000	Supported		0.077	1.582	
EP → MP	0.110	0.107	0.043	2.543	0.011	Supported	0.368	0.016	1.202	0.241
BE → MP	0.348	0.350	0.043	8.085	0.000	Supported		0.148	1.295	
INO → MP	0.303	0.305	0.047	6.440	0.000	Supported		0.108	1.340	

Therefore, based on the results, it can be said that the firms in Greece pay greater attention to the business environment and firm innovation to bring efficiencies in management practices as compared to environmental policies. Interestingly, the results have shown that the management practices mediate the relationship between firm innovation, business environment, environmental policies, and the sustainable market competitiveness in the sustainable communities in Greece (Table.4). Therefore, based on the results, it can be said that the internal and external factors in the relations of management practices are the wise strategies to achieve the sustainable market competitiveness in the sustainable communities at Greece.

Tab. 4 – Indirect Effects (by authors)

Relationship	$\beta$	Sample Mean	SD	t-value	CILL	CIUL	Decision
BE → MP → MC	0.084	0.083	0.019	4.333	0.047	0.120	Supported
EP → MP → MC	0.027	0.026	0.012	2.164	0.005	0.052	Supported
INO → MP → MC	0.073	0.073	0.019	3.923	0.036	0.112	Supported

## 5 DISCUSSION

This study has examined the impacts of internal and external factors in achieving sustainable market competitiveness in sustainable communities along with the mediating role of management practices. The outcomes revealed that firm innovation, business environment, and management practices have a significant positive relationship with sustainable market competitiveness, but environmental policies have a positive but insignificant relationship. Likewise, the firm innovation, environmental policies, and business environment have a significant positive relationship with the management practices in sustainable communities. In addition, management practices mediate the relationship between internal and external factors and sustainable market competitiveness in the sustainable communities in Greece. However, the results of the study have a significant contribution to the body of knowledge and interesting implications for practitioners. It directs the practitioners to focus on trade regulations, labor regulations, political stability, tax rates, access to finance, and business licensing, to solve problems, monitor performance, achieve targets, offer performances bonuses, fair procedures of promotion, product, and service innovation as well as process innovation, energy taxes and energy performance standard in operations and quantity in usage to achieve the sustainable market competitiveness in the sustainable communities.

The managerial obstructing was to examine the impacts of internal and external factors in achieving sustainable market competitiveness along with the mediating role of management practices to provide answers to the raised research questions. However, the results have provided answers to the raised research questions and contributed to the body of knowledge. The results of the study are in line with Arda et al. (2019), who investigated the effect of quality and environmental management practices on firm performance along with the mediating role of quality performance and environmental productivity among Turkish firms. The study is based on environmental management practices among firms. The results of the study are also in line with Chan et al. (2012), who evaluated the relationship between environmental orientation and corporate performance along with the mediating role of green supply chain management and the moderating role of competitive intensity among Chinese firms. Their results support the current study in terms of environmental factors and market competitiveness. The results of the current study are in line with Razzak (2022), who explored the mediating role of productivity between sustainable supply chain management practices and competitive advantage among manufacturing firms in Bangladesh. The study observed a significant positive relationship between sustainable supply chain management practices and market competitiveness. The study also found an insignificant relationship between

environmental sustainability and market competitiveness. The results of this study are in line with management practices, environmental concerns, and market competitiveness among firms.

The results of this study are also in line with Cheraghalizadeh et al. (2021), who evaluated the impacts of internal and external factors (organizational capabilities) on the competitive advantage along with the moderation of market dynamism and mediation of customers relationship in the hotel industry in Cyprus. The study noted that organizational capabilities have significant positive effects on competitive advantage, and customer relationship mediates the association. The results of the study are parallel in the context of internal and external factors and market competition. The findings are also in line with Liboni et al. (2022), who investigated the environmental orientation in a firm's sustainable outcome along with the mediation of dynamic capability in Brazil. The study found that dynamic capability mediates the relationship. The study is in line with the sense of mediation of dynamic capabilities between environmental factors and sustainable outcomes. However, the findings of the current study are unique as compared to the above inline studies due to the comparison of internal and external factors in achieving sustainable market competitiveness in relation to management practices among sustainable communities.

## **5.1 Implications of the Study**

### **5.1.1 Practical Implications**

The outcomes of the study guide the practitioners to stream focus on the internal and external factors in the light of management practices to achieve sustainable market competitiveness in sustainable communities. The findings imply that the integration of internal (firm innovation) and external factors (business environment and environmental policies) and management practices would be an interesting strategy to achieve sustainable market competitiveness in terms of the main market, main products, technology license, and informal sector. Favorable energy taxes, energy performance standards, trade and labor regulations, political stability, access to financing and licensing, products, services, and process innovation would be the right approach to achieve sustainable market competitiveness in sustainable communities. These interesting strategies would be helpful for practitioners to achieve sustainable market competitiveness. In addition, focusing on solving the problems of employees, monitoring workers' performance, flexible promotional practices, products, services, and process innovation, would enhance the capabilities of firms to achieve sustainable market competitiveness. The performance-based bonuses and promotions can provide the opportunity for better innovation, sustain workers' motivation, and can positively lead firms to achieve sustainable market competitiveness.

The applicable environmental policies can inspire firms to pay significant attention to products, services, and process innovation to ensure their survival and get favorable responses from investors, government agencies, and other stakeholders that ultimately enhance their image in sustainable communities and improve market competitiveness. The outcomes also guide the policymakers to pay special attention to the environmental factors and their integration with other internal and external sources to achieve sustainable market competitiveness in sustainable communities. The results also direct the policymakers to adopt energy efficient and pollution prevention strategies to meet the sustainable business objectives among sustainable communities. Valid management practices can also inspire the team members to focus on energy efficiency, process, and product innovation, to achieve the desired market competitiveness in a sustainable environment. However, practitioners need to pay more attention to the efficiency in management

practices and business environment compared to other external factors while developing competitive strategies.

## 6 CONCLUSION AND FUTURE DIRECTIONS

This study merged the literature on internal (firm innovation) and external (business environment and environmental policies) factors, management practices, and sustainable market competitiveness based on evidence from Greece. The validated theoretical framework contributes to the relevant literature and directs policymakers in a systematic way to focus on the efficiencies in management practices along with internal and external factors to achieve the required sustainable market competitiveness in sustainable communities. This study also extends the relevant literature on management practices (in the context of problem-solving, performance monitoring, targets achieving, performance bonuses, and methods of promotion), environmental policies (in the context of energy performance standard), business environment (trade regulation, labor regulation, political instability, tax rates, access to finance, business licensing), and firm innovation (product and services innovation, process innovation) to enhance the level of sustainable market competitiveness in the sustainable communities.

Precisely, we evaluated the impacts of internal factors on sustainable market competitiveness and confirmed, based on the results, that firm innovation has significant positive effects on sustainable market competitiveness in sustainable communities. In our second contribution, we examined the role of external factors in achieving sustainable market competitiveness in sustainable communities. The study confirmed, based on the results, that the business environment has significant positive effects. In contrast, environmental policies have a positive but surprisingly insignificant relationship with sustainable market competitiveness in sustainable communities. In our third contribution, we examined the impacts of internal and external factors on management practices among firms and confirmed, based on the results, that firm innovation, business environment, and environmental policies have a significant positive relationship with management practices in sustainable communities. In our fourth contribution, we investigated the mediating role of management practices on the relationship between internal and external factors and firm innovation in sustainable communities. However, based on the findings, we confirmed that management practices mediate between the business environment, firm innovation, environmental policies, and sustainable market competitiveness in the sustainable communities in Greece.

Hence, the empirical evidence of the study inspires to integrate the internal and external factors with valid management practices to achieve sustainable market competitiveness in sustainable communities. Eventually, it is believed that the findings of this study will significantly contribute to the theoretical literature and highlight valuable information to apply more influential management practices to improve the level of sustainable market competitiveness in sustainable communities. It will guide the management practitioners to design more substantial internal and external factors that can better suit the environmental policies to achieve sustainable market competitiveness. However, while interpreting results, the readers should know the specifications and scope of the collected data. To get a better understanding and enrich the knowledge area, future studies can examine the two-way relationship between management practices and firm innovation along with the mediating role of internal and external factors. In addition, future studies can evaluate the two-fold mediating role of firm innovation, energy policies, business environment, and business model innovation on the relationship between management practices, green product innovation, and sustainable market competitiveness. Moreover, future studies can investigate the

mediating role of management practices between firm innovation, market competitiveness, business environment, and energy policies to increase the understanding of the policymakers. Future studies can also examine the mediating role of R&D, Eco-innovation on the relationship between exposure to environmental impacts and the sales performance among firms.

Finally, this study was only limited to examining environmental policies. Adding the other factors of Triple Bottom lines (economic condition and social environment) can further enrich the knowledge area. This study was only limited to firm innovation, business environment, and environmental policies; adding other internal and external factors can show other directions to policymakers. This study was only limited to investigating the mediating role of management practices. Evaluating the mediating and moderating role of other factors can display a different image of results.

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APPENDIX -A

Variables	Dimensions	Descriptions
Management Practices	Problem Solving	Over the last complete fiscal year [2019], what best describes what happened at this establishment when a problem in the production process arose?
	Performance Monitoring	Over the last complete fiscal year [2019], did this establishment monitor any performance indicators?
	Achieving Targets	Over the last complete fiscal year [2019], how many performance indicators were monitored at this establishment?
	Performance Bonuses	Over the last complete fiscal year [2019], what were 'managers' performance bonuses mostly based on?
	Way of Promotion	Over the last complete fiscal year [2019], what was the primary way non-managers were promoted at this establishment?
Degree of Competition	Main Market	In fiscal year [2019], which of the following was the main market in which this establishment sold its main product?
	Main Products	In fiscal year [2019], for the main market in which this establishment sold its main product, how many main products sold by establishment's?
	Number of Competitors	In fiscal year [2019], for the main market in which this establishment sold its main product? how many competitors did this establishment's main product face?
	Using Technology License	Does this establishment at present use technology licensed from a foreign-owned company, excluding office software?
	Practices of Competitors in the Informal Sector	Does this establishment compete against unregistered or informal establishments?
	Energy Tax	In fiscal year [2019], was this establishment subject to an energy tax or levy?



Energy Policies		
	Energy Performance Standard in Operation	In fiscal year [2019], was this establishment subject to an energy performance standard in its operations?
	EPS quantity in usage	In fiscal year [2019], was this establishment subject to an energy performance standard in its operations? How much EPS quantity was used
Business Environment	Trade Regulation	Trade regulation is currently the biggest obstacle faced by this establishment.
	Labor Regulation	Labor regulation is currently the biggest obstacle faced by this establishment.
	Political Instability	Political instability is currently the biggest obstacle faced by this establishment.
	Tax Rates	Tax rate is currently the biggest obstacle faced by this establishment.
	Access to Finance	Access to finance is currently the biggest obstacle faced by this establishment.
	Business licensing	Business Licensing is currently the biggest obstacle faced by this establishment.
Innovation	Product & Service Innovation	During the last three years, has this establishment introduced new or improved products or services?
	Process Innovation	During the last three years, has this establishment introduced any new or improved process? These include: methods of manufacturing products or offering services; logistics, delivery, or distribution methods for inputs, products, or services; or supporting activities for processes?

Source: ([www.enterprisesurveys.org/en/methodology](http://www.enterprisesurveys.org/en/methodology))