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EFFECTS OF INNOVATION CAPABILITIES ON ORGANISATIONAL SUSTAINABILITY: EVIDENCE FROM AN EMERGING ECONOMY

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Abstract: *The role of businesses in sustainable development gained increasingly more importance, together with the increasing speed of technological advancements, in addition to the economic effects of climate change, pandemics, disasters, and wars. The capabilities of businesses allowing them to adapt to environmental conditions to use their resources and turn them into productive outputs efficiently are considered critical factors in achieving sustainable competitive advantage. Therefore, the present study aimed to determine the effects of businesses' marketing, process, organisational, and product innovation capabilities on corporate sustainability. The data used in the present study, which has an explanatory research design, were collected from managers of 452 SMEs in an emerging economy (Turkey) using the non-random quota sampling method. During the data collection, a survey was carried out on the manufacturing firms operating in Kocaeli, Sakarya, Düzce, Yalova, and Bolu provinces in a region called TR42 in the Eastern Marmara region, which is an important industrial region in Turkey. During the data analysis, SPSS was used to obtain the descriptive statistics, and AMOS to obtain the inferential statistics. Within this context, covariance-based Structural Equation Modelling (SEM) was utilised to test organisational sustainability's causal relationships with variables constituting the innovation capabilities. The results achieved here suggest that marketing, process, corporate, and product innovation capabilities have an effect that increases organisational sustainability. Furthermore, the results indicate that marketing innovation capability had a higher impact on organisational sustainability than other capacities constituting the innovation capability. The present study offers important interpretations and conclusions for businesses which operate in an emerging economy at the level of SME to improve their sustainability objectives in terms of resource, capability, and environmental adaptation.*
Keywords: sustainability, organisational sustainability, innovation capabilities, emerging economy.
JEL Classification: M11, M31, O31, Q56.

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Introduction. The world is in a gradually accelerating change. Businesses, which aim to keep up with the speed of change, want to gain a competitive advantage on the one hand and prevent from destructive impacts of rapid shocks on the other hand. Sudden pandemics, sudden disasters caused by climate change, and the economic effects of unexpected wars put businesses into gradually more difficult positions. The pandemic that emerged in 2020 put businesses into an unexpectedly difficult process. Climate change keeps being a fundamental threat to individuals' sources of income (WWF, 2023). The Global Risk Report 2022 of the World Economic Forum presents environmental risks as the most important subject in the short- and long run. The first-three potential risks in the world for the next ten years are those related to climate change (WEF, 2022). Climate change-related physical risks might have a remarkable effect on the economic performance of businesses because they can significantly increase their costs. An important point to state is that these impacts differ between sectors (the degree of vulnerability) and by the severity and frequency of the physical risks (Nikolaou, 2015). Within this context, businesses must keep and increase their competitive advantages against changing environmental, economic, and social conditions. For a long time, academicians studying business have been learning how to manage businesses against changing conditions. In his Theory of the Growth of the Growth of the Firm, Edith Penrose (1959) claimed that companies that are capable of translating their resources into productive outputs might gain a competitive advantage. After that study laying the foundation of the Resource Based View, Wernerfelt (1984) and Barney (1991) emphasised the proper use and quality of business resources. Teece et al. (1997) defined the strategies which allow for structuring the firms' resources in parallel with environmental conditions as the dynamic capabilities of businesses. Dynamic capabilities are defined as a company's capability of integrating, building, and reconfiguring the internal and external resources/competencies to create innovation in rapidly changing environments (Teece et al.,1997).

Furthermore, Teece (2009) also reported that dynamic capabilities support organisations in improving their performance outcomes and strengthening their competitive power. Those dynamic capabilities can also be considered as the organisational routines that firms use to have new resource configurations (Eisenhardt and Martin, 2000). The dynamic capabilities of a business would determine its ability and willingness to make changes in its processes to contribute to the transitions toward a more sustainable industry (Darmani et al., 2017; Lieberherr and Truffer, 2014). In other words, the dynamic capabilities approach mainly concentrates on how businesses conduct innovation activities and reconfigure their organisational and managerial processes and routines aiming the evolutionary fitness (Helfat and Peteraf, 2009). Previous literature showed that innovation is a valuable strategy for increasing business performance and achieving business sustainability (Gunday et al., 2011; Rauter et al., 2019; Zott, 2003). As stated by Hanaysha and Hilman (2015), businesses face remarkable challenges in their sustainability practices; thus, innovation is the main strategy to overcome those challenges. It can be stated that the advantages of sustainability practices would bring improved earnings, higher product quality and brand satisfaction, organisational commitment, and improved brand image, as well as the potential for government support, cost-saving that results from sustainable logistics and supply chain, and minimal environmental liability and legislation costs (Hanaysha et al., 2022). Therefore, sustainability practices are of vital importance to businesses. This study mainly aims to reveal the effects of the innovation capabilities of businesses on their organisational sustainability.

Moreover, the relative effects of marketing, process, organisation, and product innovations, which constitute the innovation capabilities, on organisational sustainability were also investigated. The firms constituting the present study's sample operate in Türkiye, an emerging economy. The fragile structure of emerging economies poses important risks to the organisational sustainability of businesses operating in those economies. From this aspect, the results presented here are important for businesses in those countries. Moreover, the firms in the sample are SMEs operating in a region with a high production potential in Türkiye. Thus, differing from many studies in the literature, the present study examines the subject of sustainability at a micro level rather than a macro level.

This study is important since it provides a theoretical framework to understand the effects of innovation capabilities on organisational sustainability. With this context, the present research can explain the mechanisms by which innovation capabilities affect corporate sustainability. Furthermore, it can also provide theoretical suggestions regarding how businesses can improve their innovation capabilities and achieve sustainability objectives. With this study, it can be analysed how the innovation strategies and practices of businesses contribute to the sustainability performance of organisations. Therefore, it can offer suggestions shedding light on how innovation capabilities can be integrated into the processes and structure of a business. Furthermore, this study can also provide practical strategies on how innovation can manage sustainability-related risks and opportunities. Given the findings of this research, implications regarding which innovation capability is more effective on the sustainability performance of a business can be drawn.

This research examining the effect of innovation capabilities on organisational sustainability is novel since it was carried out in an industrial region that is both important and open to development in Türkiye, involving businesses operating in the manufacturing industry. The present study distinguishes itself from other studies since it has been examined in only a few studies. It offers a new perspective on SME-scale manufacturing businesses and makes up the gap in the current literature. This research can provide a unique perspective by examining the effects of innovation capabilities on organisational sustainability in a different sector, region, or sample. In addition, this research is also original in terms of the methodology used and the data collected.

The second section presents the innovation capabilities, organisational sustainability, and hypothesis development, while the third section includes the methodology. The fourth section presents the analysis and results; the fifth section includes the results and discussion. The sixth and final section presents the managerial implications.

Literature Review. Innovation, which can be seen in any field nowadays, is a concept that refers to the development of a product or service within a process for businesses (Kahn, 2018). Innovation is one of the keys to sustainability for all businesses from an economic perspective (Adam and Alofaysan, 2023), and it is critical for businesses to gain competitive advantages (Crossan and Apaydin, 2010). In order for a business to be innovative, it must have innovation capabilities or develop those capabilities (Saunila and Ukko, 2012). The capabilities that businesses develop in order to achieve innovation in products, processes, markets, and management to differ from their rivals are named innovation capabilities (Bittencourt et al. 2019). From a wider perspective, innovation capabilities are a business' capabilities to transform ideas and information into new products, services, processes, or systems to benefit firms and shareholders (Lawson & Samson, 2001).

The innovation capabilities used by the authors in previous studies differ from each other (Adam and Alofaysan, 2023; Ali et al., 2020; Yeşil and Doğan, 2019; Maldonado-Guzmán et al., 2018; Kafetzopoulos and Psomas, 2013). Some authors used the innovation capabilities, which consist of product, process, marketing, and organisational capabilities that were specified in the Oslo Guideline published by OECD in the year 2005 (Adam and Alofaysan 2023; Ali et al. 2020; Maldonado-Guzmán et al., 2018; Kafetzopoulos and Psomas, 2013). In their study published in 2019, Yeşil and Doğan used the learning, strategic, and organisational capabilities among the innovation capabilities. In another study, the innovation capabilities were divided into two groups fundamental innovation capabilities and complementary innovation capabilities. Basic innovation capabilities consist of R&D, manufacturing, and marketing capabilities, whereas complementary innovation capabilities consist of learning, organisational, resource-exploiting, and strategic capabilities (Zimmermann et al. 2020). In their study, Ostermann et al. (2021) employed the development, operation, management, and transaction capabilities among the innovation capabilities, whereas Hanaysha et al. (2022) used the product, service, process, and marketing capabilities.

The effect of innovation capabilities on export performance has been investigated in different studies (Ledesma-Chaves and Arenas-Gaitán 2022; Moreira et al. 2022; Ali et al. 2020; Kafetzopoulos and Psomas 2013). Ledesma-Chaves and Arenas-Gaitán (2022) emphasised the necessity of innovation capabilities in penetrating new markets, which would improve the export performances of businesses. Moreira et al. (2022) reported in their study that learning, R&D, manufacturing, marketing, organisational, resource-exploiting, and strategic capabilities, among the innovation capabilities specified by Guan and Ma (2003), positively affected the export performance of Mozambican SMEs. Another subject related to innovation capabilities is the performance of SMEs. In their study, Kafetzopoulos and Psomas (2013) investigated the effects of the innovation capabilities of manufacturer SMEs in Greece on their product quality, operational performance, and financial performance. Their study found that innovation capabilities had a direct positive effect on operational performance and product quality and no immediate effect on financial performance. In another study, Maldonado-Guzmán et al. (2018) analysed the effects of the innovation capabilities of SMEs in Mexico on their business performances. Given the results they reported, it was determined that SMEs' product, process, marketing, and managerial capabilities have a positive and statistically significant effect on their income and, therefore, positively affect their business performance. Ali et al. (2020) investigated the relationship between the innovation capabilities of SMEs and their financial and operational performances. As a result of the interviews with the managers of SMEs operating in the manufacturing industry in China, the authors determined that, among the innovation capabilities, product and marketing capabilities of SMEs affected their financial performance and process and organisational capabilities positively affected their operational performance.

Innovation capabilities were also directly associated with sustainability as a performance indicator. For instance, Khan and Naeem (2017) suggested a conceptual frame for service businesses to gain sustainable business growth via strategic quality orientation and innovation capabilities. Their results showed that

strategic quality orientation directly affected sustainable business growth, and innovation capabilities indirectly affected it. Using the literature on innovation capabilities, Behnam et al. (2018) examined four capabilities in terms of sustainability over cases. Ostermann et al. (2021) compared the innovation capabilities of green businesses, which have socioenvironmental concerns, and grey businesses, which have fewer socioenvironmental concerns, regarding sustainability. Considering sustainability, the results they reported showed that green businesses focused on transaction, management, development, and operation capabilities, and grey companies focused on development, management, transaction, and operational capabilities. Nair and Bhattacharyya (2022) investigated the relationship between the innovation capabilities of businesses and their sustainability competencies. In their study, the authors examined the role of individual sustainability competencies in developing innovation capabilities.

Furthermore, in the same study, they also investigated the mutual relationships between individual and corporate-level capabilities. As a result of their research, the authors reported that sustainability competencies improved innovation capabilities through organisational shareholder and organisational learning capabilities. In their study, Zulkiffli et al. (2022) examined the effects of eco-product, eco-management, and eco-logistic, among the eco-innovation capabilities, on sustainable business performance during the COVID-19 pandemic. As a result of their study, the authors determined that eco-logistic and eco-management powers affected sustainable business performance, but eco-product capability did not.

The concept of sustainability, which emerged intending to prevent ecological collapse and enable future generations would have a healthy environment, is very important for businesses because of their responsibilities regarding sustainability (Gomes et al., 2023). Sustainability is a critical measure for all kinds of organisations, especially businesses, to continue their activities and compete in the market nowadays (Salmanzadeh-Meydani et al., 2023). Therefore, companies were forced to take sustainability to the organisational level, and then the concept of organisational sustainability emerged (Alsehani et al., 2023). Organisational sustainability refers to a process that aims to systematically meet the needs of all stakeholders and changes from the environmental, economic, and social aspects (Kara et al., 2023). Organisational sustainability creates a competitive advantage for businesses and value for all stakeholders and society (Nawaz and Koç, 2019).

Organisational sustainability is assessed in three dimensions: economic sustainability, environmental sustainability, and social sustainability (Florea et al., 2013). While all those dimensions were discussed in some studies (Batista and Francisco 2018; Braccini and Margherita 2018; Gomez-Trujillo and Gonzalez-Perez 2020), some studies examined one or two of them (Hami et al. 2015; Althnayan et al. 2022; Bianchi et al. 2022). Braccini and Margherita (2018) examined the level of adopting Industry 4.0 and three dimensions of organisational sustainability. In their study, within Industry 4.0, product quality and productivity improvement were discussed in the dimension of economic sustainability, monitoring the continuous energy consumption in the measurement of environmental sustainability and safer work environment, less intense workload, and job enrichment in the dimension of social sustainability. It was determined that all dimensions affected each other. Hami et al. (2015) analysed the effects of sustainable production practices on economic sustainability by examining the economic dimension of organisational sustainability.

Moreover, they also investigated the mediatory influence of innovation capability on the effect of sustainable production practice on financial sustainability. In their study, Althnayan et al. (2022) discussed the environmental sustainability dimension of organisational sustainability. In that study, the Environmental Organizational Citizenship Model was suggested, in which ecological revolutionist leadership affects organisational sustainability. In this model, it was also investigated if the desire to work plays a regulatory role in this relationship. Similarly, in another study by Bianchi et al. (2022), the environmental sustainability dimension of organisational sustainability was examined. Their study was designed as a case study in order to investigate the effect of organisational learning on environmental sustainability. Their study proposed a new environmental sustainability framework based on the organisational learning model in parallel with the lifecycle management concept. Ullah et al. (2021) discussed the social sustainability aspect of corporate sustainability. Their study examined the role of revolutionist leadership and electronic performance assessment systems on the social perspective of organisational sustainability. The results they presented confirmed the contribution of electronic performance assessment systems and revolutionist leadership to organisational sustainability. Similarly, Irfan et al. (2022) studied the social aspect of organisational sustainability and investigated how corporate culture would affect the social sustainability indicators.

To achieve sustainable development, all institutions need to be integrated into sustainability. Innovation capabilities are also a convincing instrument to achieve sustainability (Behnam et al. 2018). In the present study, the innovation capabilities, including the product, process, marketing, and organisational innovation

capabilities specified in Oslo Guidelines published by OECD in the year 2005, were used. The hypotheses regarding the effects of those capabilities on business sustainability are presented here based on the relevant literature.

Marketing innovation refers to the use of all marketing instruments in order to advertise and promote the products and services of businesses to existing and new customers. At this point, marketing innovation capability includes using marketing approaches such as product design, promotion, pricing, distribution channels, and branding (Edeh et al., 2022). Businesses with marketing innovation capability also have innovative marketing ideas to influence the purchasing behaviour of consumers (Pant et al., 2020). Such businesses can operate competitively in their industries and have sustainable performance. Mariadoss et al. (2011) revealed that marketing innovation, one of the innovation capabilities, positively affected organisational sustainability. Examining the effects of innovation capabilities on business sustainability for SMEs, Hanaysha et al. (2022) determined that marketing innovation positively impacted business sustainability. Thus, based on the relationship of marketing innovation with organisational sustainability, the following H_1 hypothesis was developed:

H_1: *Marketing innovation has a significant effect on organisational sustainability.*

Process innovation is the involvement of new factors in production or other operations by a business to introduce a new product or service (Utterback and Abernathy, 1975). Process innovation allows businesses to develop long-term strategies by contributing to both their efficiency and effectiveness achievements (Frishammar et al. 2012). A business with process innovation can be competitive in the market and also gains sustainable performance (Goni and Looy, 2022).

As stated by Lawson and Samson (2001), businesses focus on process innovation in order to improve service delivery speed, make system practices efficient, and provide their customers with added value. On the other hand, the legal framework aiming to supervise the effects of businesses on the environment and minimise CO2 emissions has forced many businesses to improve their process innovations (Theißen et al., 2014). Thus, process innovation is important for a company designing and implementing a new method or technology in order to efficiently conduct their activities (Hanaysha et al., 2022). Rauter et al. (2019) emphasised that process innovation allows businesses to reach sustainability objectives. Moreover, in a study carried out by Hanaysha et al. (2022), it was found that process innovation had a positive effect on business sustainability. Within this context, considering the relationship of process innovation with organisational sustainability, the H_2 hypothesis was developed:

H_2: *Process innovation has a significant effect on organisational sustainability.*

To achieve sustainable success, businesses need to use the information and transfer it to a product or a process, which is closely related to organisational innovation capability (Inków, 2020). Organisational innovation capability refers to constantly translating various information and ideas into new products, processes, and systems in favour of a business or its stakeholders (Parthasarathy et al. 2021). Because organisational innovation capability has a direct effect on the sustainability of a business, it can be claimed that organisational innovation has an effect on organisational sustainability. Thus, the H_3 hypothesis is as follows:

H_3: *Organisational innovation has a significant effect on organisational sustainability.*

Product innovation can be described as new technology or a combination of new technologies commercially introduced in order to meet the needs of a customer or the market (Utterback and Abernathy, 1975). Since new markets can be established thanks to product innovation, product innovation is an important strategy for businesses to survive and improve (Xie and Wang, 2020). In addition, it also contributes to the sustainability practices of businesses (De Medeiros et al. 2014). Sustainability integration is very important to measure businesses' current level of sustainability practices. In particular, for the sustainability practices of a business, it is very important to use their existing capabilities in the product development process (Schulte and Hallstedt, 2018). Furthermore, product innovation is also related to environmental sustainability, one of the dimensions of organisational sustainability (Dangelico and Pujari, 2010). For this reason, it can be claimed that product innovation capability is closely related to businesses' level of sustainability practices, and consequently, it has an effect on organisational sustainability.

Examining the innovation capabilities from the aspect of business sustainability in their study, Al Othman and Sohaib (2016) claimed that product innovations are one of the main determinants of sustainable development. Sipos (2008) stated that businesses can build and maintain competitive power via product innovations. Within this context, for businesses to gain a sustainable competitive advantage, they must produce recyclable products and use environment-friendly materials. Eggert et al. (2014) revealed that product innovation capability is necessary to improve business performance and gain sustainable competitive

advantage. In their study, Rauter et al. (2019) found a positive relationship between product innovation and business sustainability. Hanaysha et al. (2022), in a study on SMEs, determined that product innovation positively affected business sustainability. Within this context, hypothesis H_4 is as follows:

H_4: *Product innovation has a significant effect on organisational sustainability.*

The conceptual model developed considering the hypothesis specified above is illustrated in Figure 1. In this model that is based on the determinants of organisational sustainability, there are marketing, process, organisational, and product innovation capabilities, which constitute the innovation capabilities and organisational sustainability.

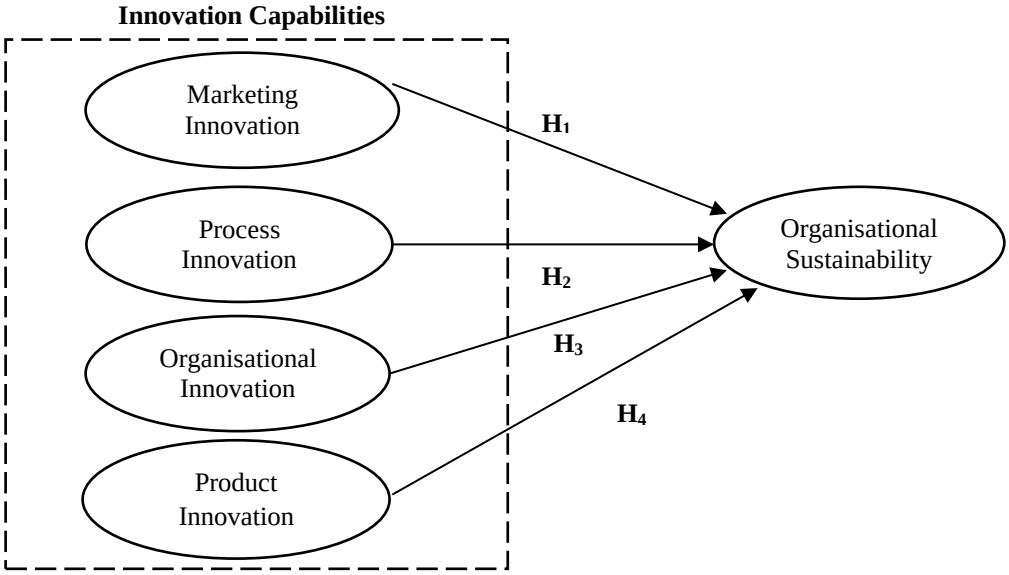

Figure 1. Research model

Sources: developed by authors.

Methodology and research methods. The present study was carried out in order to reveal the effects of marketing, process, organisational, and product innovation capabilities, which constitute the innovation capabilities, on corporate sustainability. From this perspective, the research has an explanatory design since it focuses on the cause-and-effect relationship based on the determinants of corporate sustainability. Since the analysis preferred in the present study is Structural Equation Modeling (SEM), a multivariate and complex analysis, the sample size needs to be large enough for the analyses. The universe of the present study consists of the manufacturer businesses operating in the Eastern Marmara region, which is an important industrial region of Turkey. Based on the statistical classification of the European Union member countries, this region is referred to as TR42 and includes five cities. Kocaeli, the largest one among those cities, is known as an industrial city in Turkey and has the highest per capita income. Sakarya is one of the top ten exporting cities in Turkey. Even though they are not as large as Kocaeli and Sakarya, Yalova, Düzce, and Bolu are neighbouring provinces with high production potential, where the production level increases every year. Moreover, these five cities in the TR42 region serve as a bridge between Istanbul, the largest city in the country, and Ankara, the capital of Türkiye. The study universe comprises 103.363 SMEs operating in Kocaeli, Sakarya, Düzce, Yalova, and Bolu provinces. Due to the difficulty of accessing all SMEs in those five cities constituting the universe, a sample selection method was preferred in the present research. Within this context, the sample size was calculated at a 95% confidence level in the first stage of the study. The sample size was calculated using the formula given below (Israel, 1992; Barlett et al., 2001). Accordingly, the minimum sample size of the present study was 384. On the other hand, considering the table of the acceptable minimum sample sizes for different universes developed by Gürbüz and Şahin (2016) based on the study of Barlett, Körtlik, and Higgins (2001), a universe of 250,000 people can be represented by a sample group of 384 individuals at the confidence level of 95%. Therefore, 452 SMEs contacted in the present study are considered to be sufficient for the research sample. In addition, Kline (1998) suggested that the participant-to-model parameter ratio should be at least 5:1 to achieve consistent results. In the present study, there were 31 statements in the scales involved in the research model and, considering the 5:1 ratio, it can be seen that a sample size of 452 participants is sufficient to ensure the consistency of the results. Therefore, it is possible to say that the sample size meets the criteria.

$$\frac{N*p*q*Z^2}{[(N-1)*d^2]+(p*q*Z^2)} \quad (1)$$

where N = Universe; n = sample size; p = prevalence of the relevant characteristic in the universe (taken as 0.5.); q = frequency of not observing the relevant characteristic in the universe (taken as 0.5.); Z = standard value in relation to the confidence level (found in the normal distribution tables, 1.96 for 95%); d = negligible error (taken as 0.5.)

$$n = \frac{103363*0,5*0,5*1,96^2}{[(103363-1)*0,05^2]+(0,5*0,5*1,96^2)} \quad (2)$$

$$n = \frac{99269,83}{259,37} = 383,73 \cong 384 \quad (3)$$

Since it was aimed to collect data from the easiest and most accessible participants to achieve the sample size required by the present study, the quota sampling method, which is one of the non-random sampling methods, was used in the present study. In this method, the researcher first divides the universe into groups (categories) based on specific characteristics. By determining the ratios (quotas) of the groups in the study universe, the subjects to be involved in the sample are employed in parallel with the quotas of the groups in the universe. Therefore, the samples employed in the study would have a similar or the same quota percentage in the universe. From this aspect, considering the characteristics of the universe and in parallel with the objective of the study, the subjects were divided into categories in parallel with the portions of SMEs in the TR42 development region. Table 1. shows the distribution of SMEs constituting the sample of the universe.

Table 1. Distribution of samples by the provinces

TR42 Development Region	Number of SMEs	Number in the Sample	Percentage
Kocaeli	51.968	226	50%
Sakarya	26.161	115	25%
Düzce	9.216	40	9%
Yalova	8.246	36	8%
Bolu	7.772	35	8%
Total	**103.363**	**452**	**100**

Sources: developed by authors based on (Eastern Marmara Development Agency, 2022).

The data in the present study were collected using the survey method. In parallel with the objectives of this study, the survey was conducted on 452 SMEs, which agreed to answer the questions voluntarily. All SMEs from which the data were collected were manufacturing businesses. The analyses were conducted using the data obtained from surveys conducted on 452 participants. Given the descriptive statistics, it was determined that 17.4% of respondents were business owners or partners, 37.2% were general managers, and 45.4% were department managers. Examining the years in operating periods of the companies in their industries, it was observed that 41.4% of them had been in operation for 21 years or more. Furthermore, while the percentage of businesses operating for 11-15 years was 19.5%, that of those operating for 6-10 years was 17.5%. The rate of those operating for 16-20 years was 16.6%, whereas the percentage of businesses operating for 1-5 years was 5.1%. 45.6% of the businesses were determined to have 50-249 employees, whereas the percentage of those with 10-49 employees was 38.3%, and that of businesses with 0-9 employees was 16.2%. The distribution of companies by sector is shown in Table 2.

Table 2. Distribution of businesses by industries

Industry	Percentage in the Sample
Metal Industry	18,6%
Metal Objects, Machinery and equipment, and Transportation Means	16,9%
Textile, Garment, and Leather	15,1%
Chemicals, Oil, Coal, Rubber, and Plastic Products	12,4%
Forestry Products and Furniture	11,9%
Food, Alcohol, and Tobacco	9,2%
Stone and Soil-Based Industry	8,6%
Paper, Paper Products, and Press	7,3%

Sources: developed by authors.

In the present study, the variables of marketing innovation, process innovation, organisational innovation, product innovation, which constitute the innovation capabilities, and organisational sustainability were analysed using a 5-point Likert scale (1: Completely disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Completely agree). The statements in the scale were adapted from reliable and valid measurements in previous studies. There were 21 statements in total; marketing innovation (5), process innovation (4), organisational innovation (5), and product innovation (7) were measured by making use of the study carried out by Kafetzopoulos and Psomas (2015). Organisational sustainability was measured by using ten statements by making use of the study carried out by Yousif et al. (2016).

In parallel with eh objective of this study, a structural model was tested using AMOS 24 software. Before the final application, an expert opinion was asked to assess the scale's face validity (Davis et al., 2009; Edward et al., 2012). Within this context, interviews were conducted with three academicians and three experts. Then, to check the understandability of the statement, a pilot study was conducted with managers of SMEs and a pertest was conducted. Using the responses obtained from the pilot study, some modifications were made to improve the statements' understandability. Within the context of this research, the variables of marketing innovation, process innovation, organisational innovation, product innovation, and organisational sustainability were measured.

Results. In this section, the two-step approach introduced by Anderson and Gerbing (1998) was adopted. In the first step, the measurement model consisting of 31 statements and five factors was tested in terms of structural validity and reliability. In the second step, the structural model established in order to test the study hypotheses was analysed. The scales used in the present study were adapted to the Turkish language by researchers. Using the translation-back translation method, they were first translated into Turkish by academicians with a good command of both source and target languages. Then, the translations were proofread by experts. Considering the expert opinions, the statements were translated into English, the source language. Statements translated into English were compared to the originals, and they were determined to be similar. Then, the structural validity of the scales was tested.

The structural validity of the measurement model was tested using structures' convergent and discriminant validity. The measurement model was examined before testing the structural model using the fitness indices, regression weights, and modification indices (MI). Within this context, given the results obtained from CFA (Confirmatory Factor Analysis), the measurement model was found to have the fitness index values of $\chi^2/df=2.757$, GFI=0.851, AGFI=0.823, IFI: 0.940, TLI=0.933, CFI=0.940, and RMSEA=.062. Since the results obtained from the measurement model were at an acceptable fitness level (Mishra and Datta, 2011; Schermelleh-Engel, Moosbrugger, and Müller, 2003), the model was found to fit the data. The fitness results of the model are presented in Table 3.

Table 3. Results of measurement model*

Constructs	Standardised loadings	CR	AVE	Cronbach's Alpha
Marketing Innovation				
MRI1	0.871			
MRI2	0.892			
MRI3	0.890	0.950	0.791	0.952
MRI4	0.874			
MRI5	0.918			
Process Innovation				
PRI1	0.914			
PRI2	0.861	0.891	0.673	0.882
PRI3	0.689			
PRI4	0.801			
Organisational Innovation				
ORI1	0.822			
ORI2	0.813			
ORI3	0.797	0.886	0.608	0.896
ORI4	0.730			
ORI5	0.734			
Product Innovation				
PDI1	0.797	0.943	0.702	0.941

Continued Table 3

Constructs	Standardised loadings	CR	AVE	Cronbach's Alpha
PDI2	0.864			
PDI3	0.846			
PDI4	0.769			
PDI5	0.863			
PDI6	0.874			
PDI7	0.846			
Organisational Sustainability				
ORS1	0.686			
ORS2	0.591			
ORS3	0.886			
ORS4	0.633			
ORS5	0.860	0.912	0.514	0.911
ORS6	0.792			
ORS7	0.701			
ORS8	0.702			
ORS9	0.677			
OS10	0.570			
χ^2**/df**: 1155.222/419 = 2.757 **CFI**: 0.940 **GFI:** 0.851 **AGFI:** 0.823 **IFI:** 0.940 **TLI:** 0.933 **RMSEA**: 0.062				

df = Degrees of freedom; GFI = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index; TLI = Tucker–Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation

**CR (Composite Reliability)= $(\sum\lambda)^2 / [(\sum\lambda)^2 + \sum e]$; AVE= (Average Variance Extracted): $\sum \lambda^2 / [\sum\lambda^2 + \sum e]$; e=1- λ^2.*

Sources: developed by authors.

The fitness index values presented in Table 3 showed that the model fits the data well. Thus, the structural validity of the scales was tested using convergent validity and discriminant validity. Convergent validity was tested by first assessing the factor loads of each structure. The standardised factor loads of each variable were higher than 0.50, proving the convergence validity (Hair et al., 2010:710). Moreover, all structures' Average Variance Extracted (AVE) values were higher than 0.50. Thus, the convergent validity was met (Fornell and Larcker, 1981). AVE values higher than 0.50 also indicate that inner consistency is achieved (Berthon et al., 2005; Fornell and Larcker, 1981).

In this study, convergent validity was also examined by using Composite Reliability (CR) and AVE. Given the results presented in Table 3, since it was determined for each structure that the AVE value was higher than 0.5 (AVE>0.5) and CR values were higher than AVE (CR>AVE), then it was determined that convergent validity was achieved (Hair et al., 2010).

This study tested discriminant validity using free and constrained models (Zait and Bertea, 2011; Rönkkö and Cho, 2020). The «unconstrained model», where inter-structure correlations are freed, and the "constrained model", where the correlations between all structures are fixed to "1", were compared for discriminant validity (Bagozzi et al., 1991). The hypothesis for this test is H_0: $\Phi_{ij}=1$, where Φ_{ij} refers to the inter-structure correlations coefficients. χ^2 and df values of constrained and unconstrained models are presented in Table 4.

Table 4. Discriminant validity results

Models	χ^2	Degrees of freedom (df)
Constrained model	1454,785	429
Unconstrained model	1155.242	419
$\Delta\chi^2$ *	**299.543**	
Δdf **		**10**

** χ2 difference between constrained and unconstrained models*

*** Difference between constrained and unconstrained models' degrees of freedom*

Sources: developed by authors.

Given the results presented in Table 4, the H_0 hypothesis was rejected since $\Delta\chi^2$ =299.543 value was higher than the table of probabilities for the chi-squared (χ^2) distribution value $_{10}\chi_{20,05}$ = 18.307. This finding shows that the discriminant validity of the model was achieved.

The internal consistencies of the structures were tested using Cronbach's alpha (α), CR, and AVE statistics. Given the results presented in Table 3, α and CR values were found to be higher than 0.70 for each structure.

These values are higher than the levels indicating the reliability of the structures (Hair et al., 2010:710). Moreover, AVE values were also found to be higher than 0.50. At this point, it can be stated that each structure is internally consistent. In other words, all the structures were found to be reliable.

After the measurement model's structural validity and reliability tests, the study hypotheses were analysed using Structural Equation Modelling (SEM) and Maximum-Likelihood Estimation methods. The fitness indices of the study model were examined, and the results shown in Table 5 suggest that the model has a good fit for the data.

Table 5. Research model (YEM) fitness indices

χ^2/df	GFI	AGFI	IFI	TLI	CFI	RMSEA
1155.222/199= 2.757	0.851	0.823	0.940	0.933	0.940	0.062

Sources: developed by authors.

The standardised estimations of the model are illustrated in Figure 2, and the hypothesis test results are presented in Table 6.

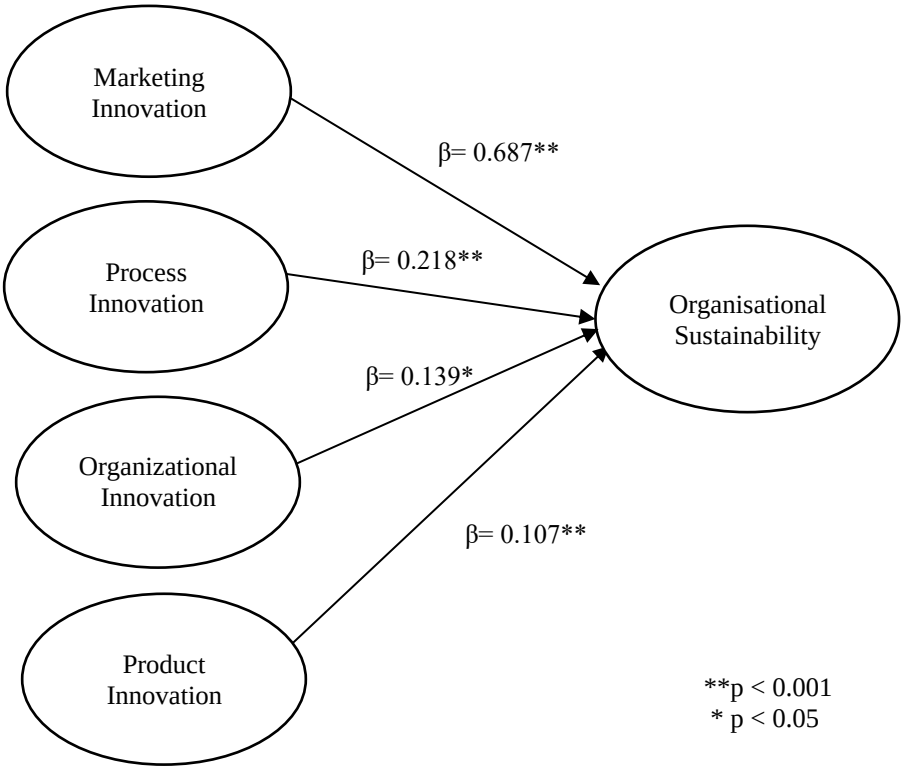

Figure 2. Parameter estimates of the structural model

Sources: developed by authors.

The results showed that marketing innovation's effects on organisational sustainability were statistically significant (β=0.687; p<0.001). This finding indicates that the H_1 hypothesis was validated. Marketing innovation was found to be the capability that has the highest effect on organisational sustainability. This might be because of the expectation that innovations to be made in marketing will directly contribute to sales revenue. Furthermore, the fact that marketing innovation has the fastest effect on sales when compared to other innovative capabilities makes it highly significant for managers. Since the effect of process innovation on organisational sustainability was statistically significant (β=0.218; p<0.001), the H_2 hypothesis was also accepted. The effect of process innovation on organisational sustainability was not as high as marketing innovation, but it was determined to have a higher effect when compared to organisational and product innovations. Innovations in business processes allow businesses to be more effective and efficient and also positively affect their competitive power. To achieve organisational sustainability, it is crucial to quickly and easily adapt to changing conditions. Managers try to achieve organisational sustainability by responding to rapidly changing external environments and market conditions by using innovations in business processes. Therefore, businesses can become more flexible and robust. Moreover, the results revealed that the effects of

organisational innovation on organisational sustainability were statistically significant (β=0.139; p<0.05), and the H_3 hypothesis was accepted. In order to achieve organisational sustainability, it is necessary for innovative ideas to emerge and be properly implemented within the organisation. Establishing a structure where all employees can freely express their innovative ideas is important. It wouldn't be possible to respond to changing conditions by having poor organisational innovation capability. Considering that the organisation's administration will conduct all innovation processes, it becomes easier to understand the effect of organisational innovation on organisational sustainability. The results showed that product innovation's effects on organisational sustainability were statistically significant (β=0.107; p<0.001), and the H_4 hypothesis was accepted. The effect of product innovation on organisational sustainability is relatively lower when compared to other innovation capabilities, but it is still significant. This might be because managers might perceive product innovation to be more challenging in comparison to other innovation capabilities because product innovation requires extensive research and development efforts. These efforts require both a long time and high costs.

Table 6. Hypothesis test results

Hypotheses			Std. Reg. Weights (β)	C.R.*	p	Hypothesis Result	R^2
MRI	→	ORS	0.687	10.138	< 0.001	H_1 Accepted	0.862
PRI	→	ORS	0.218	5.162	< 0.001	H_2 Accepted	
ORI	→	ORS	0.139	2.103	< 0.05	H_3 Accepted	
PDI	→	ORS	0.107	3.718	< 0.001	H_4 Accepted	

**C.R.: Critical Ratio*

Sources: developed by authors.

Examining the standardised regression weights from the aspect of relative effects, it was determined that the variable having the highest level of impact on organisational sustainability was marketing innovation, followed by process innovation, organisational innovation, and product innovation, respectively. It had a much higher level of effect in comparison to the other three variables. R^2 value in Table 6 indicates that 86.2% of the variance in organisational sustainability was explained by marketing innovation, process innovation, organisational innovation, and product innovation.

Conclusion. Adapting to varying business and environmental conditions and gaining sustainable competitive advantage is of vital importance for businesses. Claiming that businesses can turn their resources into productive outputs might gain competitive advantage, the Theory of the Growth of the Firm is the origin of the resource-based approach. Then, the studies emphasising the proper use and quality of business resources (Wernerfelt, 1984; Barney, 1991) could offer solutions for businesses to gain competitive advantages when the change could be faster. However, the fact that new capabilities should be developed in order to gain competitive advantage in dynamic markets, in which the change is very fast, was first explained by Teece et al. in the year 1997 with the concept of dynamic capabilities. The dynamic capabilities perspective, which suggests the structuring of business resources per the environmental conditions, considers the ability of a business operating in a rapidly changing business or market environment to innovate in the context of adapting or restructuring its internal and external resources to the relevant business and/or market environment (Teece et al., 1997). The common point of the studies in the literature is that businesses could gain a sustainable competitive advantage by effectively and efficiently using their resources. One of the main ways to achieve this goal is to make innovations in the fundamental functions, which incorporate businesses' organisational and managerial processes, such as marketing, production, and R&D. Hence, besides improving their fundamental resources, businesses would also gain organisational sustainability. Therefore, the present study examined the effect of the innovation capabilities of SMEs operating in an emerging economy on their organisational sustainability. Based on this effect, the effects of marketing, process, organisational, and product innovation capabilities, which constitute the innovation capabilities on organisational sustainability, were investigated.

The results achieved here showed that marketing, process, organisational, and product innovation capabilities, which constituted the innovation capabilities and were examined in the present study, had a statistically significant effect on organisational sustainability (p<0.05). Thus, the hypothesis H_1, H_2, H_3, and H_4 were accepted. Considering the results for each innovation capability, it can be seen that the capability having the highest effect on organisational sustainability was the marketing innovation (β=0.687; p<0.001). This finding suggests that the marketing innovation capability is an important instrument in order to gain

sustainable competitive advantage in the industry. Hence, it was determined that businesses with the marketing innovation capability could achieve organisational sustainability by analysing the marketing mix's components in accordance with customer's needs and demands. These results are similar to those Mariadoss et al. (2011) and Hanaysha et al. (2022) reported.

Another result achieved here is that the process innovation capability of businesses has a statistically significant effect on organisational sustainability (β=0.218; $p<0.001$). Based on this result, it can be interpreted that the changes and improvements made by businesses in their business processes would increase productivity, efficiency, and competitive power. Process innovation involves the capability to change operational methods, equipment used, and also business practices. Process innovation mainly aims to minimise the production costs among all units or items, as well as increase their product and/or service quality and create a higher level of customer satisfaction (Gunday et al., 2011). Businesses focus on process innovation to ensure the speed of service delivery and offer added value to their customers by using efficient systems and applications (Lawson & Samson, 2001). Furthermore, businesses having process innovation increase their sustainable performance, and they can also have opportunities to develop long-term strategies. For this reason, product innovation plays a key role for businesses in designing and implementing new technologies in order to achieve environmental sustainability (Hanaysha et al., 2022). In their study, Rauter et al. (2019) emphasised that product innovation is an important factor in ensuring businesses achieve their sustainability objectives. Hanaysha et al. (2022), in their study, found that process innovation had a positive effect on business sustainability. The results reported by Rauter et al. (2019) and Hanaysha et al. (2022) are in parallel with those reported in the present study.

In this study, the effect of organisational innovation capabilities on organisational sustainability was statistically significant and positive (β=0.139; $p<0.05$). This finding is important for organisational sustainability because organisational innovation capability is considered to be a critical factor for long-term success. This is mainly because organisational innovation capability lays the foundation for a business to create a more innovative culture, more efficiently manage innovations, increase productivity, and gain sustainable competitive advantages. On the other hand, organisational innovation capabilities can also increase the efficiency of operations by providing innovative ideas and processes. Resources are used more effectively. This capability might also contribute to the establishment of an organisational culture in which employees are more enthusiastic about sharing innovative opinions about organisational sustainability with top management.

Finally, the effect of product innovation on organisational sustainability was also found to be statistically significant (β=0.107; $p<0.001$). This finding also indicates a structure contributing to establishing new markets and developing new products, as stated by Xie and Wang (2020), and to sustainability practices of businesses, as emphasised by De Medeiros et al. (2014). In the relevant literature, product innovation has generally been considered one of the most important organisational capabilities and is described as a business' capability to create a new or upgraded product that can meet the needs of the target market (Damanpour, 1991; Hanaysha, 2020). Within this context, the results achieved here showed that product innovation capability is closely related to a business's level of sustainability practices and, consequently, the level of organisational sustainability. Considering the studies in the relevant literature, Al Othman and Sohaib (2016) claimed in their study that product innovation is one of the main determinants of sustainable development. In their study, Eggert et al. (2014) revealed that product innovation capability is necessary to increase business performance and gain sustainable competitive advantage. Rauter et al. (2019) reported a positive relationship between product innovation and organisational sustainability, whereas Hanaysha et al. (2022) claimed in their study on SMEs that product innovation had a positive effect on business sustainability. From this perspective, the results achieved here are in corroboration with those reported in the literature.

The present study aims to measure the effect of the innovation capabilities of SMEs operating in an emerging economy on their organisational sustainability. The results showed that marketing, process, organisational, and product innovations had a significant effect on organisational sustainability. Among the innovation capabilities, marketing innovation had a stronger effect in comparison to other innovation capabilities. This might be because of two reasons. The first reason is that marketing innovation capability can be developed at a lower cost in comparison to the others. The reason for considering this cost to be lower is the structure of marketing beginning before the production and continuing after the sales. On the other hand, significant research and development expenses should be borne in order to make product innovation. Process and organisational innovations might require significant observations, calculations, and time. However, marketing innovation can be developed by working on feedback from both non-business and business-related sources, particularly employees within the department, fed by the marketing information system. The second

reason is that businesses at the SME level tend to pay more importance to short-term objectives in comparison to long-term objectives. The most important reason for this is that the fragile structure of emerging economies such as Turkey makes it difficult for SMEs operating in those countries to make long-term plans. Therefore, the most important achievement to gain in the short term is sales. From the perspective of executives, the easiest way to increase sales in a short period is the improvements in marketing capability in comparison to other capabilities. In an environment where access to funds is difficult, and there is a liquidity shortage, the efforts made in order to develop product, process, and organisational innovation capabilities might be considered to be unrealistic and imaginary by business executives.

The executives participating in the present study believe that all innovation capabilities would positively affect organisational sustainability, but among those capabilities, marketing innovation would have the highest effect, and product innovation would have the lowest. This thought might be because of the executives' belief that all other activities would be meaningless if the products were not sold. This belief, as a result of a short-term perspective, causes an orientation to the capability, which would offer the fastest outcome rather than improving all the capabilities of businesses.

It is important to identify which innovation capabilities affect the organisational sustainability of SMEs in countries having an advanced production atmosphere, stable economies, and high ease of conducting business and which ones should be discussed in future studies. Therefore, in future studies, not only organisational sustainability but also organisational social responsibility, responsible production, sustainable living spaces, and other topics that contribute to sustainable development and can be directly related to businesses should be addressed. On the other hand, as reported in the literature, innovation capabilities have been examined with different sub-dimensions in various studies. Therefore, in future studies, the effects of innovation capabilities on organisational sustainability can be examined by considering the capabilities such as technological innovation, logistics innovation, and resource allocation. In the present study, organisational sustainability was measured as a one-dimensional structure, and the effects of innovation capabilities were investigated in this context. Examining organisational sustainability in depth, it can be seen that organisational sustainability consists of three fundamental dimensions that are economic, environmental, and social sustainability. Considering these three dimensions in future studies might significantly contribute to the analysis of the effects of innovation capabilities. Since the present study focused on SMEs in the manufacturing sector, service businesses were excluded from the sample. However, since service and manufacturing businesses have different industrial dynamics and assuming that innovation capabilities may differ for both sectors, it is important for future studies to investigate the service businesses, which also have an important place in emerging economies. Moreover, comparing the innovation capabilities and organisational sustainability of both sectors would be useful in determining the sectoral differences.

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Вплив інноваційної спроможності на організаційну стійкість: на прикладі країн, що розвиваються

Роль бізнесу в забезпеченні сталого розвитку набуває дедалі більшого значення разом зі зростанням швидкості технологічного прогресу, а також економічними наслідками зміни клімату, пандемій, катастроф і воєн. Спроможність підприємств адаптуватися до умов навколишнього середовища, ефективно використовувати свої ресурси та перетворювати їх на виробничі результати вважається критично важливим фактором у досягненні стійкої конкурентної переваги. Тому метою даного дослідження було визначити вплив маркетингових, процесних, організаційних та продуктових інноваційних можливостей підприємств на корпоративну стійкість. Вибірку дослідження сформовано на основі опитування керівників 452 малих та середніх підприємств в країнах з перехідною економікою (Туреччині) з використанням методу невипадкової квотної вибірки. Під час збору даних було проведено опитування виробничих фірм, що працюють у провінціях Коджаелі, Сакарья, Дюзче, Ялова та Болу в регіоні TR42 у Східному Мармуровому регіоні, який є важливим промисловим регіоном Туреччини. У статті використано програмний продукт SPSS для визначення описової статистики, а також AMOS – для отримання вивідних економіко-математичних результатів. У цьому контексті для перевірки причинно-наслідкових зв'язків організаційної стійкості зі змінними, що становлять інноваційну спроможність, було використано коваріаційне моделювання структурних рівнянь (SEM). Отримані результати свідчать про те, що маркетингова, процесна, корпоративна та продуктова інноваційна спроможність має вплив на підвищення організаційної стійкості. Крім того, результати вказують на те, що маркетингова інноваційна спроможність має більший вплив на організаційну стійкість, ніж інші складові інноваційної спроможності. Це дослідження пропонує важливі інтерпретації та висновки для підприємств, які працюють в економіці, що розвивається, на рівні малих та середніх підприємств, щоб покращити свої цілі сталого розвитку з точки зору ефективності використання ресурсів, спроможності та адаптації до навколишнього природнього середовища.

Ключові слова: сталість, організаційна стійкість, інноваційна спроможність, економіка, розвиток.