

# The Impact of Comprehensive Innovation on Sustainable Performance in Small and Medium-Sized Jordanian Companies

Mounira Ben Arab<sup>1</sup>, Lina Awni Mustafa Nasir<sup>2</sup>

## Abstract

*The study aimed to investigate the impact of comprehensive innovation on sustainable performance in small and medium-sized companies. To achieve this study's objectives, a descriptive-analytical approach was used. An electronic questionnaire was distributed to a sample of individuals, and a random selection method was applied to choose a group of small and medium-sized companies in Jordan, with a sample size of 310 companies. The study found that comprehensive innovation, including technological, organizational, marketing, and green innovation, has a positive and significant impact on sustainable performance in Jordanian small and medium-sized companies. There is a positive and significant relationship between comprehensive innovation and sustainable performance. The researcher recommends that companies provide a wide range of options to assist customers in making purchasing decisions.*

**Keywords:** *Comprehensive Innovation, Sustainable Performance, Jordanian Companies, Small and Medium-Sized*

## INTRODUCTION

The dynamics of the market dictate that organizations can maintain their uniqueness by finding resources that enable continuous competitive advantage. In this case, innovation is essential for business growth, adaptation to rapid changes in customer needs and requirements, and ensuring organizational competitiveness.

Innovation is the fundamental mechanism for competition within organizations, and most organizational failures result from innovative marketing problems, especially during the introduction of innovations to the market. Innovation is crucial for an organization's success, stability, and ability to remain competitive, especially in today's rapidly changing and highly competitive business environment (Attia, 2021).

Many organizations strive to ensure their survival and continuity within the current reality by achieving competitive positions in a competitive environment. Through continuous monitoring, organizations determine the effectiveness of strategic management in closing the gaps between planned and actual performance. Organizations now focus on values that contribute to the sustainability of business performance and the triple bottom line (economic, social, and environmental

sustainability). Sustainability is a three-dimensional concept that includes economic, environmental, and social sustainability. It can only be achieved by balancing these dimensions and sustainably interacting with them. The success of organizations is linked to achieving the overall dimensions and not just financial results. They are looking for capabilities in their human resources that distinguish the organization from others, enabling it to survive, continue, grow, and achieve sustainable performance (Al-Mawajdeh, 2019).

The performance of companies varies in competitive business environments and reflects the priorities of companies to processes that enable them to stay in the job market. These processes include perception, opportunity identification, readiness for new technologies, willingness to enter the market with new products, and willingness to take new risks (Al-Sabbatin, 2020).

## Statement of the Problem

The topic of innovation and entrepreneurship holds a prominent position for all small and medium-sized companies. It is the primary perspective for competitiveness in markets and plays a significant role in economic

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<sup>1</sup> Department of Finance, High Institute of Management, university of Tunis, E-mail: M.benarab@dau.edu.sa, Mounirabenarab1962@gmail.com

<sup>2</sup> High Institute of Management, university of Tunis, E-mail: leenanaser@hotmail.com

and social development. Innovation also plays a crucial role in creating employment opportunities for youth, in addition to supporting productivity levels, competitiveness, and ensuring the sustainability of economic growth.

By reviewing some previous studies, a research gap has been identified. The researcher found that many previous studies focused on these companies but did not examine comprehensive innovation and its direct impact on sustainable performance in all dimensions. For example, the study by Al-Hayari in 2019 focused on the dimensions of comprehensive innovation in organizational performance but did not cover all dimensions. Additionally, the study by Abdel-Razzaq and Ben Ali in 2014 focused on the impact of marketing innovation on sustaining competitive advantage but did not consider the other dimensions of comprehensive innovation and the dimensions of sustainable performance. Meanwhile, the study by Hannoun and Al-Mousawi in 2023 aimed to improve the level of sustainable performance for green technological innovation units. These dimensions were studied from different perspectives, highlighting the research problem of this study, which seeks to address this research gap by analyzing the impact of comprehensive innovation on sustainable performance in all its dimensions.

### **Research Questions**

1. What is the level of comprehensive innovation in small and medium-sized companies?
2. What is the level of sustainable performance in small and medium-sized companies?
3. Does comprehensive innovation in all its dimensions (technological, organizational, marketing, green innovation) have an impact on sustainable performance in all its dimensions (economic performance, social performance, environmental performance)?
4. Is there a significant relationship between comprehensive innovation in all its dimensions (technological, organizational, marketing, green innovation) and sustainable performance in all its dimensions (economic performance, social performance, environmental performance)?

### **Research Objectives**

The main objective of this study is to build a model that illustrates the impact of comprehensive innovation in its dimensions on sustainable performance in small and medium-sized companies. From this main objective, the following sub-objectives emerge:

1. To understand the importance of integrated innovation management and sustainable performance for small and medium-sized companies.

Additionally, to determine the effect of comprehensive innovation on sustainable performance and reveal the relationship between comprehensive innovation and sustainable performance in small and medium-sized companies

2. To obtain results and recommendations that guide decision-makers in improving the performance of small and medium-sized companies and developing their capabilities in sustainable performance.

### **Significance of the Study**

This study is significant in two aspects:

1. **Theoretical Aspect:**

This study delves deeper into research and investigation in studies that focus on the core variables (comprehensive innovation and sustainable performance). Furthermore, it contributes to the body of knowledge, enriching information, and advancing scientific research.

2. **Practical Aspect:**

The study concentrates on the importance of the results of the relationship between comprehensive innovation dimensions and sustainable performance, identifying the strongest correlation aspects. Moreover, it addresses the positive aspects of implementing these findings and rectifies any negative aspects through appropriate actions.

## **Study Concepts**

### **Innovation:**

Innovation is defined as a company's desire to support creativity in developing products and services, relying on new products, and then placing them in the market (Al-Dhahabi, 2017). Procedurally, innovation involves improving a new service or technology in a better, easier, more practical, and feasible way.

### **Technological Innovation:**

It is defined as the necessary or originated change that covers new products and new technical methods, technological changes, and modern technical methods (Abu Shaqeer, 2013).

### **Organizational Innovation:**

This refers to improvements or new ideas undertaken by medium and small-sized companies to directly or indirectly add value to the work environment. It is a crucial factor in the success and competitiveness of companies in work environments and in achieving economic strength. It can take several forms, such as innovation in management, technological innovation, and additional innovation (Al-Kaabi, 2016).

### **Marketing Innovation:**

Marketing innovation involves creating new sales strategies that differ from existing sales methods and strategies. It encompasses all product-related activities from the manufacturer to the end user (Al-Amir and Jassim, 2023).

### **Green Innovation:**

Green innovation is defined as an innovation that enhances the environmental performance of a small and medium-sized company's production and consumption activities. All new and more efficient processes are considered environmental innovations (Drewazi and Smar, 2019).

### **Sustainable Performance:**

Sustainable performance refers to the interaction between an organization's business performance, social performance, economic performance, and environmental performance. Operationally, it signifies an organization's ability to achieve its business goals, increase value for stakeholders, and consider long-term economic, environmental, and social responsibility.

### **Social Performance:**

Social performance is one of the most critical aspects of sustainability. It relates to people's mindset, their thought processes, as well as goals, living standards, fairness, social dialogue, delegation of responsibilities, and culture protection.

### **Economic Performance:**

Economic sustainability means sustained growth, development, and stability in financial performance.

### **Environmental Performance:**

Environmental performance is defined as the continued preservation and protection of natural resources, avoiding pollution of those resources (Al-Mawajdeh, 2019).

Study Limitation

### **Temporal Limitation:**

The research was conducted in the second semester of the academic year 2022/2023.

### **Spatial Limitation: Jordan.**

### **Subject Matter Limitation:**

The research is limited to examining the impact of comprehensive innovation on the sustainable performance of small and medium-sized companies.

### **Human Limitation:**

The study is limited to small and medium-sized companies in Jordan.

Theoretical Framework and Previous Studies:

### **Comprehensive Innovation:**

Comprehensive innovation encompasses various forms of innovation, including technological, organizational, marketing, and green innovation. Joseph Schumpeter was the first to propose the theory of economic innovation in the 20th century. He explained that innovation is the foundation of economic organization in general and industrial organization in particular. Comprehensive innovation relies on long-term efficiency strategies to gain a competitive advantage (Al-Dhahabi, 2017).

### **Innovation as a Process:**

Innovation is defined as the development of new ideas through their perception, acquisition, and their application within the work environment (Halal and Arabab, 2020).

### **Importance of Innovation:**

The importance of innovation lies in its role in adapting to contemporary system challenges, developing the commercial market, and maintaining competitiveness in the business environment. For the private sector, innovation is essential to keep pace with the evolving trends to avoid the emergence of new competitors. It is only through innovation that technological competitive capabilities can be maintained. In the public sector, innovation is essential to focus on capabilities and performance (Al-Dhahabi, 2017).

## **LITERATURE REVIEW**

### **The Importance of Comprehensive Innovation**

Innovation holds significant importance for the continuous existence of organizations as it is one of the fundamental factors for an organization to adapt and evolve to keep pace with constantly changing markets and technologies. There is always a risk of new competitors emerging,

necessitating organizations to keep up with developments, and this can only be achieved through innovation. In the public sector, demand is continually present, and governments strive to manage demands that often exceed their resources, requiring enhanced efficiency and performance, which, in turn, calls for innovation in performance. The survival of companies and organizations depends on the implementation of new and innovative ideas, which increases the organization's competitive advantage. This is affirmed by the economist Joseph Schumpeter, who referred to it as the "superior tree" that organizations can shelter under (Alhayari, 2019).

### **Dimensions of Comprehensive Innovation**

#### **1. Green Innovation:**

Green innovation involves the development of new methods, work processes, or production techniques that are more environmentally friendly and contribute to reducing negative environmental impacts. One of the

benefits of green innovation is that it enables companies to receive rewards for environmentally sustainable products. It also enhances their competitive strength and improves environmental management performance. Green innovation involves a powerful engine for sharing information and innovative processes across different departments within a company, as well as gaining knowledge through collaboration with partners, enhancing learning outcomes, and creative processes (Touahri, 2023).

## **2. Technological Innovation:**

Technological innovation is a powerful driver of economic development, gaining increased importance by enhancing productivity through the introduction of advanced technological methods, creating more efficient products, and thereby increasing competitiveness. Technological innovation's advantage lies in ensuring the emergence of new industrial capabilities or system introductions. It also has the ability to make production equipment meet changing market needs and accommodate new changes, leading to national production and development. Allowing growth rates to exceed resource utilization rates, technological innovation helps replace natural capital with human-made capital, improving efficiency, economy, and capital preservation (Bou-Shqeir, 2013).

## **3. Marketing Innovation:**

Marketing innovation complements the unique features of new products and services through transformation and communication, including packaging, pricing, and other aspects. Consequently, it enhances their performance in the market. Positive collaboration can be obtained through innovation by integrating various elements of innovation to achieve better results for the company (Abdul Razzaq & Ben Ali, 2014).

## **Sustainable Performance**

The increased focus on development only occurred after World War II, with the concept of development entering the realm of underdeveloped countries. Initially, development was centered on how underdeveloped countries could progress to the level of industrialized nations. However, as economic thought evolved, the focus shifted primarily to the phenomenon and concept of economic growth. In the period from 1950-1960, development was considered a series of consecutive economic growth stages that all countries must pass through. It was believed that the primary foundation for development was a combination of savings, investment, and foreign aid to enable third-world countries to progress on the path of economic growth. This economic development pursued by advanced countries became synonymous with rapid overall economic growth. At the beginning of the 1970s, the concept of development underwent significant changes. In addition to its economic and social dimensions, new terms were introduced to the development literature, the most important being sustainable development. Sustainable development has become one of the most important terms in development literature, evolving over time to focus less on intergenerational needs and more on a comprehensive approach linking economic development, social integration, and environmental sustainability. It has become apparent that the global challenge of sustainability lies in the complex interrelation of environmental, social, and economic development (Abdelghani & Mohammed, 2020).

Sustainable performance is defined as the approach adopted by organizations in their business activities to create value in both the short and long term while considering economic, environmental, and social aspects. The importance of sustainable performance is based on the significant responsibility placed on major institutions in the global economy. Therefore, achieving sustainable performance has become imperative as it represents a third state of integration between results and daily business decisions. For organizations, it marks a new phase in which they transform into entities that serve environmental, social, and economic interests while protecting stakeholders. Among the benefits of sustainable performance is creativity in generating products, activities, and practices in new markets. This enables sustainable organizations to distinguish themselves from others. Sustainable performance helps reduce energy consumption, natural resource waste, and environmental pollution, improving living standards in the communities they operate in and attracting and retaining top employees (Alqurashi, 2017).

This is a modern concept in the fields of environment and development. It represents a new approach to economic development as an alternative to traditional development approaches. It takes into consideration environmental and social problems. The new concept aims to improve the quality of human life by living within the capacity of the surrounding ecological systems. Sustainable development emphasizes the fundamental importance of environmental care in economic development (Slimani & Houari, 2018).

### **The Importance of Sustainable Performance**

Organizations that embrace sustainable performance recognize the importance of preserving non-renewable resources and production requirements, as well as the growing focus on environmental and sustainability issues. Adopting the concept of sustainability helps organizations gain a competitive edge, increase future development opportunities, protect the environment, and achieve the material gains they seek. Organizations also care about long-term sustainable performance by balancing economic performance on one hand and social and environmental performance on the other. This offers numerous benefits, including creating sustainable business models, demonstrating customer value, and enhancing social responsibility. It helps balance the interests of shareholders and other stakeholders within the organization. Focusing on sustainable performance improves individuals' quality of life while enabling future generations to benefit from natural resources and the environment. It assists organizations in translating their goals into specific practices across environmental, social, and economic areas, as well as in monitoring and measuring their sustainable performance through various performance indicators (Abu Raya et al., 2023).

### **Dimensions of Sustainable Performance**

#### **Economic Performance:**

This dimension reflects the surplus achieved by the organization through maximizing its business results, and reducing resource usage, and can be measured through operational and financial results. In terms of operational results, economic performance is related to the organization's ability to reduce costs related to resource acquisition, energy consumption, waste management, and environmental fines. Financially, economic performance is linked to the organization's ability to maximize profits, sales growth, return on investment, and return on assets (Afum et al., 2020).

#### **Social Performance:**

This dimension encompasses social activities that the organization engages in to meet the needs of individuals within and outside the organization. It is divided into internal and external performance. Internal performance is related to contributors and employees, while external performance is linked to customers, the local community, and the government. Social performance is measured by ensuring the health and safety of employees, training and support for their future, fairness in rewards and wage distribution, contribution to job opportunities, and support for various projects in society (Al-Awaqly, 2021).

#### **Environmental Performance:**

This dimension indicates the efforts made by the organization to minimize the impact of its operations and products on the natural environment. Environmental performance reflects the efficiency of environmental management systems adopted by the organization to protect the environment, focusing on production and operational activities that reduce negative environmental effects and waste. It is measured by indicators such as optimal resource utilization, waste reduction, reduction in the use of hazardous materials, recycling, and pollution prevention, as well as the application of environmental management system policies and procedures (Khan et al., 2021).

#### **Previous Studies:**

This section of the study includes previous research conducted in recent years related to the current study's topics. These studies are relevant to the current study, and they were used to support the research problem,

build its model, develop the theoretical framework, construct the survey tool, and compare the results of the current study with some results from these studies.

### **Arab Studies:**

Hanoun and Al-Mousawi (2023) aimed to improve the level of sustainable performance of economic units, especially industrial ones, by relying on green technological innovation. The study evaluated the extent to which these economic units adopted sustainable strategies in their current and future plans and assessed their use of green technology in their production and operational processes. The results showed that adopting sustainable strategies and green technology can lead to several sustainable benefits, such as saving natural resources, improving resource efficiency, avoiding pollution in production processes, recycling waste, and creating a supportive environment for innovative ideas. It also contributes to long-term green development that positively affects both the environment and society.

-Al-Hayari (2019) aimed to examine the impact of comprehensive innovation management on organizational development. The study involved all administrative workers in small and medium-sized Jordanian industrial companies. The results indicated a statistically significant effect of the dimensions of comprehensive innovation management (strategic, technical, managerial, and marketing) on organizational development, highlighting the importance of innovation management for improving organizational performance.

- Barkani (2017) addressed the impact of applying innovative marketing on improving marketing performance in the Operational Directorate of Telecommunications in Oum El Bouaghi. The study used a questionnaire as the main data collection tool and found a positive impact of innovative marketing on increasing the organization's sales and profits, as well as enhancing its marketing performance in general. This underscores the importance of innovative marketing and the need for it in economic organizations as a factor in improving marketing performance and, consequently, succeeding and excelling in the competitive environment.

The study conducted by Abdul Razzaq and Ben Ali (2014) focused on presenting marketing innovation as one of the latest forms of innovation that can lead to the sustainability of competitive advantage, especially when coupled with product innovation. The paper also explored the dynamics of marketing innovation at all stages of the industry life cycle. Furthermore, it examined the implications of marketing innovation on the sustainability of competitive advantage and company performance. The study revealed that positive collaboration between marketing innovation and product innovation leads to a greater competitive advantage, indicating that the success of a company can result from either of them individually. Finally, the study emphasized that innovation for sustainability, with its multidimensional nature, serves as a key new element for sustainable competitive advantage in today's rapidly changing environment.

On the other hand, the research by Dhaif Allah and Mansouriya (2014) addressed the increasing need for economic institutions to enhance their products and establish a competitive position in both local and global markets, especially in the current competitive and economically complex environment. Within this competitive framework, technological innovation has become one of the most crucial activities to reduce costs and improve production efficiency while differentiating a company's products from those of its competitors. This necessitates the protection and effective management of technological innovation to create a sustainable competitive advantage. As a case study, they selected the pharmaceutical branch "Ain Beida Factory" in Algeria, which achieved highly positive results by producing a variety of high-quality medicines and effectively managing costs, thereby enhancing its competitiveness in both local and global pharmaceutical markets.

Regarding foreign studies, Zighan et al.'s study in 2023 aims to address sustainable innovation in small and medium-sized enterprises (SMEs) and the driving factors for sustainable innovation development. The study's results reveal that SMEs have various approaches to understanding sustainable innovation, leading to different methods for integrating sustainable innovation into their operations. The study emphasizes that sustainable innovation may not be a fixed concept in SMEs due to its vague boundaries and varying interpretations. External and internal factors play a fundamental role in driving sustainable innovation in SMEs, particularly organizational culture, company capabilities, collaboration and integration within work teams, alignment with

goals, activity formulation, cohesion, and commitment to corporate objectives. These factors may conflict, reinforce each other, and have a positive impact on sustainable innovation in SMEs.

The study by Imran et al. (2021) investigates the impact of big data on green innovation, which, in turn, leads to sustainable performance. The study selected a sample of 373 participants from the services sector in Oman through purposive sampling. According to the results, big data has a significant and positive impact on green innovation. Additionally, green innovation influences sustainable performance. It's worth noting that this article is among the pioneering studies that present this path model and use multidimensional structures for big data. The article also discusses theoretical contributions, future research directions, and their associated implications.

Malesios et al.'s study (2020) aims to answer the question of how waste-free practices, wave innovation, environmental and social practices, sustainability, and economic performance are interconnected. Using structural equation modeling to test hypotheses, the study reveals that waste-free practices and wave innovation facilitate both sustainability and economic performance. Wave innovation mediates the relationship between waste-free practices and sustainable performance. Furthermore, although corporate social responsibility practices mediate the relationship between waste-free practices and sustainable performance, they only mediate within the framework of wave innovation to achieve sustainable performance.

## **RESEARCH METHODOLOGY**

To answer the study's questions and achieve its objectives, the study followed a descriptive-analytical methodology, which was suitable for the nature of this study to uncover the impact of comprehensive innovation on the sustainable performance of small and medium-sized enterprises (SMEs).

### **Study Population and Sample**

The study's population consisted of all medium and small-sized companies in Jordan. A random sample of 310 companies was selected for the study.

### **Study Tool:**

The Impact of Comprehensive Innovation on Sustainable Performance in Jordanian Small and Medium-Sized Companies.

Various scientific research tools are employed for data collection and analysis. Based on the nature of the data to be collected and the study's methodology, the most suitable tool to achieve its objectives is a questionnaire. This questionnaire was designed after reviewing relevant literature, scientific research methods, and field studies related to the study's subject. The questionnaire consisted of 33 items. Respondents provided answers on a five-point Likert scale, with the following gradations: (Strongly Agree, given a score of 5; Agree, given 4; Neutral, given 3; Disagree, given 2; Strongly Disagree, given 1). All items were positively oriented towards obtaining an objective judgment of the sample individuals' response averages. The responses of the study participants were categorized into three levels as follows: Low Level, ranging from 1.00 to 2.33; Medium Level, ranging from 2.34 to 3.67; High Level, ranging from 3.68 to 5.00. This categorization was established using the statistical criterion of the scale, calculated using the following equation:  $(5 - 1) / 3 = 1.33$ , with the result then added to the end of each category.

### **Validity and Reliability of the Questionnaire:**

#### **Face Validity:**

To verify the content validity of the questionnaire, it was presented to a panel of five experts to gauge their opinions regarding the questionnaire's comprehensiveness, clarity, and inclusivity. This process included evaluating how well the questionnaire items collectively represent the study's objectives. Based on the experts' recommendations, some questions were modified and rephrased, and a number of questions were removed. Additionally, some questions were rewritten for direct and concise reference to their intended content. This process ensured face validity.



**Construct Validity:**

The scale was applied to a sample of 25 companies outside the target study sample to assess construct validity. The reliability indices were calculated using the Pearson correlation coefficient, with values ranging from 0.49 to 0.91. All correlation coefficients were considered acceptable both educationally and statistically. As a result, none of these items were deleted, indicating that all questionnaire items measure the intended constructs, thus reflecting construct validity.

**Reliability of the Study Tool:**

For the purpose of calculating the internal consistency reliability of the study tool, Cronbach's Alpha coefficient was used, relying on the data from the initial application to the survey sample. To calculate the test-retest reliability, the tool was re-administered to the survey sample using a test-retest method with a two-week interval between the first and second applications. Pearson correlation coefficients were employed to assess the relationship between the first and second applications for the survey sample, as detailed in Table (1).

**Table 1.** Internal Consistency and Test-Retest Reliability Coefficients for the Study Tool.

Dimension	Test-Retest Reliability	Cronbach's Alpha
Technological Innovation	0.830	0.91
Organizational Innovation	0.821	0.793
Marketing Innovation	0.791	0.768
Green Innovation	0.810	0.861
Social Performance	0.712	0.761
Economic Performance	0.851	0.871
Environmental Performance	0.850	0.812
Overall Tool	0.893	0.832

Table (1) displays the values of internal consistency reliability for the entire tool (Cronbach's Alpha = 0.832) and the test-retest reliability coefficient (0.893). The values for all dimensions exceed 0.7, indicating that the questionnaire is valid for statistical analysis purposes.

**Statistical Analysis:**

The data were statistically processed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including means and standard deviations, were calculated for the sample respondents' responses to the scale items. Multiple Linear Regression analysis was used to answer the study's questions, and Pearson correlation was employed to identify relationships between variables.

**RESULTS AND DISCUSSION**

**Results Related to Research Question 1:** To answer the study's question, the arithmetic means and standard deviations of all dimensions of comprehensive innovation were calculated.

**Dimension 1:** Technological Innovation **Table (2):** Arithmetic Means and Standard Deviations for Dimension 1.

Relative Importance	Ranking	Standard Deviation	Mean	Statement
Medium	2	1.11672	3.0111	The company's management keeps up with all technological developments related to its field of work.
Medium	5	0.87410	2.3333	The company's management relies on modern technology to develop its products (goods or services) provided to its customers.
Medium	1	0.84866	3.1000	The company is keen on training employees in modern techniques.
Medium	3	1.44741	2.9222	The company has a technological infrastructure for generating new creative ideas.
Medium	4	0.93376	2.7333	The technology used by the company has simplified its procedures for providing services to its customers.
		0.40230	2.8200	Total

Table (2) shows the analysis of the sample respondents' answers for the position, with arithmetic means ranging from 2.33 to 3.10. Paragraph 3, stating that "The company is keen on training employees in modern techniques," had the highest arithmetic mean with a standard deviation of 0.84, indicating a medium level. Paragraph 2, which states "The company's management relies on modern technology to develop its products (goods or services) provided to its customers," had the lowest arithmetic mean with a standard deviation of 0.87, also

indicating a medium level. The total arithmetic mean was 2.82, with a standard deviation of 0.4, indicating a medium level.

**Dimension 2: Organizational Innovation Table (3): Arithmetic Means and Standard Deviations for Dimension 2.**

Relative Importance	Ranking	Standard Deviation	Mean	Statement
High	1	1.01	4.19	The authority in the company is decentralized, and power is delegated.
High	4	0.99	4.04	The company makes radical changes (introduction or cancellation) in its organizational structures.
High	2	0.97	4.12	The company's management is keen on involving employees in the process of making administrative decisions.
High	5	0.988	3.93	The company's management adopts new policies in the field of recruitment, rewards, and incentives.
High	3	0.971	4.05	The company's management encourages employees to accept and adapt to change.
		0.985	4.06	Total

Relative Importance	Ranking	Standard Deviation	Mean	Statement
Low	4	1.08	2.467	The company's management works to redesign production processes to reduce waste.
Medium	5	0.839	2.322	The company's management encourages employees to submit environmentally friendly innovative projects.
Low	6	1.481	2.13	The company's management seeks to balance the cost of environmental conservation with the product's set price.
Medium	2	0.802	2.72	The company's management applies international standards to its operations, such as ISO 14001 for environmental management systems.
Medium	1	0.877	2.811	The company's management designs products to be recyclable.
Medium	3	0.828	2.678	The company's management aims to innovate its operations while adhering to environmental, social, and ethical standards.
Medium		0.956	2.74	Total

Table (3) presents the analysis of sample respondents' answers for the second dimension, with arithmetic means ranging from 3.93 to 4.19. Paragraph 1, stating that "The authority in the company is decentralized, and power is delegated," had the highest arithmetic mean with a standard deviation of 1.01, indicating a high level.

Paragraph 5, which states "The company's management adopts new policies in the field of recruitment, rewards, and incentives," had the lowest arithmetic mean with a standard deviation of 0.988, also indicating a high level. The total arithmetic mean was 4.06, with a standard deviation of 0.985, indicating a high level.

**Table 4. Arithmetic Means and Standard Deviations for the Fourth Dimension: Green Innovation.**

Relative Importance	Ranking	Standard Deviation	Mean	Statement
Low	4	1.50	2.26	The organization's e-business model includes large purchases that support the organization's economic value economies of scale.
Low	2	1.81	2.32	The organization's e-business model builds channels with suppliers.
Low	3	1.41	2.29	The organization's website helps achieve electronic economic value.
Medium	1	0.96	2.88	The organization's e-business model helps in obtaining cheap raw materials.
Medium		1.57	2.43	Total

**Table 5.**

Relative Importance	Ranking	Standard Deviation	Mean	Statement
High	1	0.924	3.967	The organization contributes to civil improvement processes.
Medium	2	0.94	2.8	The organization supports anti-corruption initiatives and human rights standards.
Medium	3	0.852	2.71	The organization contributes to social developmental trust.
Low	4	0.86	2.45	The organization contributes to the development of social policies, including education.
Medium		0.884	2.98	Total

Table (5) presents the analysis of the sample respondents' answers for the green innovation dimension, with arithmetic means ranging from 2.13 to 2.81. Paragraph 5, which states "The company's management designs products to be recyclable," had the highest arithmetic mean with a standard deviation of 0.877, indicating a medium level. Paragraph 3, stating that "The company's management seeks to balance the cost of environmental conservation with the product's set price," had the lowest arithmetic mean with a standard deviation of 1.481, indicating a low level. The total arithmetic mean was 2.74, with a standard deviation of 0.956, indicating a medium level.

**Results Related to Research Question 2:** Arithmetic means and standard deviations were calculated for all dimensions of sustainable performance.

### **Dimension 1: Economic Performance Table (6): Arithmetic Means and Standard Deviations for Dimension 1**

Table (6) shows the analysis of the sample respondents' answers for the economic dimension, with arithmetic means ranging from 2.26 to 2.88. Paragraph 1, stating that "The organization's e-business model includes large purchases that support the organization's economic value economies of scale," had the highest arithmetic mean with a standard deviation of 0.96, indicating a medium level. Paragraph 4, which states "The organization's e-business model helps in obtaining cheap raw materials," had the lowest arithmetic mean with a standard deviation of 1.57, also indicating a medium level. The total arithmetic mean was 2.43, with a standard deviation of 1.57, indicating a medium level.

### **Dimension 2: Social Performance Table (7): Arithmetic Means and Standard Deviations for Dimension 2.**

Table (7) presents the analysis of the sample respondents' answers for the social dimension, with arithmetic means ranging from 2.45 to 3.967. Paragraph 1, stating that "The organization contributes to civil improvement processes," had the highest arithmetic mean with a standard deviation of 0.924, indicating a high level. Paragraph 4, which states "The organization contributes to the development of social policies, including education," had the lowest arithmetic mean with a standard deviation of 0.86, indicating a low level. The total arithmetic mean was 2.98, with a standard deviation of 0.884, indicating a medium level.

### **Dimension 3: Environmental Performance Table 8. Arithmetic Means and Standard Deviations for Dimension 3**

Relative Importance	Ranking	Standard Deviation	Mean	Statement
Medium	3	1.07	3.64	The organization uses efficient mechanisms for fuel consumption.
High	1	0.925	3.93	E-business activities in the organization help in waste management.
High	2	0.894	3.86	E-business activities in the organization support material recycling.
High		0.961	3.81	Total

Table (8) shows the analysis of the sample respondents' answers for the environmental dimension, with arithmetic means ranging from 3.64 to 3.93. Paragraph 2, stating that "E-business activities in the organization help in waste management," had the highest arithmetic mean with a standard deviation of 0.925, indicating a high level. Paragraph 1, which states "The organization uses efficient mechanisms in fuel consumption," had the lowest arithmetic mean with a standard deviation of 1.07, indicating a medium level. The total arithmetic mean was 3.81, with a standard deviation of 0.961, indicating a high level.

**Table (9)** Indicates the validity of the multiple linear regression test for the statistically significant impact of comprehensive innovation, with its dimensions represented by (technological innovation, organizational innovation, marketing innovation, green innovation), on improving economic performance.

**Table 9.**

Dimension	B	Standard Deviation	Beta	T-Value	Significance Level
Technological Innovation	0.275	0.157	0.325	2.361	0.002
Organizational Innovation	0.214	0.125	0.452	1.397	0.033
Marketing Innovation	0.197	0.214	0.391	1.975	0.034
Green Innovation	0.127	0.167	0.269	1.274	0.026

The correlation coefficient ( $R=0.753$ ) suggests a statistically significant relationship between comprehensive innovation and economic performance. The coefficient of determination ( $R^2=0.721$ ) indicates that comprehensive innovation explains 72.1% of the variance in economic performance, with the remaining variance attributed to other unmodeled variables. Additionally, the F-statistic is 13.257 at a significance level of 0.000 (Sig=), confirming the statistical significance of the regression at a significance level of 0.05 ( $\alpha$ ).

**Table 10.** Presents the multiple regression analysis of the role of comprehensive innovation in supporting environmental performance:

Dimension	B	Standard Deviation	Beta	T-Value	Significance Level
Technological Innovation	0.275	0.157	0.325	2.361	0.002
Organizational Innovation	0.214	0.125	0.452	1.397	0.033
Marketing Innovation	0.197	0.214	0.391	1.975	0.034
Green Innovation	0.127	0.167	0.269	1.274	0.026

The table indicates the validity of the multiple linear regression test for the statistically significant impact of comprehensive innovation, with its dimensions represented in improving environmental performance. The correlation coefficient ( $R=0.753$ ) suggests a statistically significant relationship between comprehensive innovation and environmental performance. The coefficient of determination ( $R^2=0.523$ ) indicates that comprehensive innovation explains 52.3% of the variance in environmental performance, with the remaining variance attributed to other unmodeled variables. Additionally, the F-statistic is 19.37, degrees of freedom (DF) is 3, and Sig is 0.007, indicating the statistical significance of the regression.

**Table 11.** Presents the multiple regression analysis of the role of comprehensive innovation in supporting social performance:

Dimension	B	Standard Deviation	Beta	T-Value	Significance Level
Technological Innovation	0.326	0.114	0.234	1.367	0.002
Organizational Innovation	0.269	0.129	0.336	1.241	0.014
Marketing Innovation	0.374	0.155	0.314	1.001	0.009
Green Innovation	0.214	0.378	0.247	1.209	0.025

The table indicates the validity of the multiple linear regression test for the statistically significant impact of comprehensive innovation, with its dimensions represented in improving social performance. The correlation coefficient ( $R=0.475$ ) suggests a statistically significant relationship between comprehensive innovation and social performance. The coefficient of determination ( $R^2=0.403$ ) indicates that comprehensive innovation explains 40.3% of the variance in social performance, with the remaining variance attributed to other unmodeled variables. Additionally, the F-statistic is 10.369, degrees of freedom (DF) is 3, and Sig is 0.011, indicating the statistical significance of the regression.

In both cases, the tables demonstrate the validity of the multiple linear regression test, showing statistically significant relationships between comprehensive innovation and environmental performance as well as social performance. The Pearson correlation coefficient (0.458) in Table (12) indicates a moderately positive relationship between comprehensive innovation and sustainable performance, with a significance level of 0.001.

## CONCLUSION

The aim of this study was to investigate the impact of comprehensive innovation on sustainable performance in medium and small-sized Jordanian companies. To achieve the study's objectives, a descriptive-analytical approach was employed.

The study found that the levels of comprehensive innovation dimensions were mostly moderate, with the exception of organizational innovation, which was rated as high. This result aligns with a study by Al-Hayari (2019), which also found moderate ratings for comprehensive innovation dimensions in technological innovation, strategic innovation, and administrative innovation, but a high rating for technological innovation.

The results also indicated that the levels of sustainable performance dimensions were moderate in the social and economic dimensions, while the environmental dimension showed a high level of performance. This finding differs from the study by Al-Mawajdeh (2019), which reported high ratings for all dimensions of sustainable performance.

Furthermore, the study demonstrated a significant positive relationship between comprehensive innovation dimensions (technological innovation, organizational innovation, marketing innovation, green innovation) and sustainable performance in small and medium-sized companies. There is a negative relationship between comprehensive innovation and sustainable performance. These findings align with a study by Imran et al. (2021), which indicated a positive impact of green innovation on sustainable performance. The study also agrees with the findings of Dhaifallah and Mansari (2014), which highlighted that technological innovation is one of the most important activities that enhance company efficiency, competitiveness, and resource sustainability. Additionally, Abdelrazak and Ben Ali (2014) found that marketing innovation has an impact on the sustainability of competitive advantages and performance in a company. Moreover, the study is consistent with the study by Al-Mawajdeh (2019), which found a strong relationship between information technology and sustainable performance, indicating that information technology has an influence on supporting sustainable performance in e-business organizations.

The researcher recommends that marketing plans be based on the results of market research and that companies adopt innovative promotional strategies that differentiate them from their competitors when promoting their products. Additionally, companies should provide electronic marketing services to their customers through their websites and offer a wide range of options to assist customers in making purchasing decisions.

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