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The Role of Social Innovation in Promoting Sustainable Development at Al-Balqa Applied University

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Abstract

This research aimed to identify the impact of social innovation in its dimensions (increasing social capabilities, community need, changes in social relations) on sustainable development in its dimensions (environmental, economic, social, and technological). It also aimed to identify the level of social innovation at Al-Balqa Applied University and the level of sustainable development at the university. The study uses the descriptive analytical approach, with the questionnaire as the study tool.The study sample, which was drawn from the study population in a simple random way, reached (150) faculty members at Al-Balqa Applied University.The results showed that the levels of social innovation and sustainable development at Al-Balqa Applied University were average. The results also showed a statistically significant effect at a significant level ($\alpha \leq 0.05$) for social innovation in terms of its dimensions (increasing social capabilities, societal need, changes in social relations) on sustainable development in terms of its dimensions (environmental, economic, social, and technological) at Al-Balqa Applied University. The research recommended preparing and conducting courses, seminars, and workshops on an ongoing and periodic basis for employees, especially with regard to developments in social innovation.

Keywords: *social innovation, sustainable development, Al-Balqa Applied University.*

Introduction

Current societies are undergoing several social transformations, which have led to significant changes in individual behavior and social structures. This was reflected on the methods and means of achieving sustainable development and showed the need to find more innovative ways and means to achieve sustainable development.

Social innovation is based on meeting social needs using better methods, resources, and technologies instead of traditional solutions to achieve social goals and social interaction between diverse parties.It sheds light on the developments taking place in society on the political, economic, and social dimensions. Social innovation grows through movements related to social issues, within a new environmentbased on social initiatives leading to the

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formation of new ways of social organization and provide modern tools for the design of a new society (Madahi, 2022).

The significance of social initiatives lies in their ability to find solutions to social issues using modern and innovative methods. Because of the change in participatory and practical solutions to social and environmental issues due to modernity or the inadequacy of government or market methods.Hence, value is produced in a less material way and works to achieve actual social demands (Ismail,2022).

Research problem

Social innovation is a crucial pillar for development, providing effective and appropriate solutions to difficult environmental, social, and economic issues. These solutions require fruitful and active collaboration from stakeholders and beneficiaries.Social innovation is characterized by justice, empowerment, well-being, and inclusion. Ensuring the success of implementing social innovation processes requires cooperation between actors, stimulating their motives for social innovation and trying to overcome any challenges that may arise during implementation (Al-Omari, 2022).

The importance of social innovation appears in its ability to confront national, regional, and global challenges, such as climate change, inequality, poverty, unemployment, migration, and integration. Based on that, this study attempts to answer the main question: What is the level of social innovation and its impact on sustainable development at Al-Balqa Applied University?

In light of the main question, a number of questions branch out, as follows:

- What is the relative importance of applying social innovation at Al-Balqa Applied University?

- What is the relative importance of sustainable development at Al-Balqa Applied University?

Objectives of the Research:

This research aims to identify the impact of social innovation (increasing social capabilities, societal need, and changes in social relations) on sustainable development at Al-Balqa Applied University. This goal includes several sub-goals, which are:

- Identifying the level of social innovation at Al-Balqa Applied University.

- Identifying the level of sustainable development at Al-Balqa Applied University.

Significance of the research

The importance of the current research appears through its focus on the role of social innovation in promoting sustainable development at Al-Balqa Applied University. Therefore, the importance of the research can be clarified from a scientific and practical perspective, as follows:

A- Scientific importance: It is expected that this research will be of interest to most researchers, analysts, and those interested in the subject of the research, as it deals with social innovation and its impact on sustainable development. Therefore, this research will present recent results that explain the importance of social innovation: its meaning, elements, and the ability to link all results to real events and evidence. Thus, the researcher hopes that this research will be of considerable importance to researchers and those interested in the subject of the research by obtaining recent results related to the subject.

B- Practical importance: It is represented in knowing the impact of social innovation in its dimensions (increasing social capabilities, societal need, changes in social relations) on sustainable development at Al-Balqa Applied University because of its impact on the private and public sectors, which is considered the mainstay of the economy worldwide. Therefore, we will benefit from applying the results of this research in the work of various

organizations, adding scientific value and providing recommendations based on these results.

Research model:

The research model was prepared by defining the research variables and the elements of each variable, as follows.

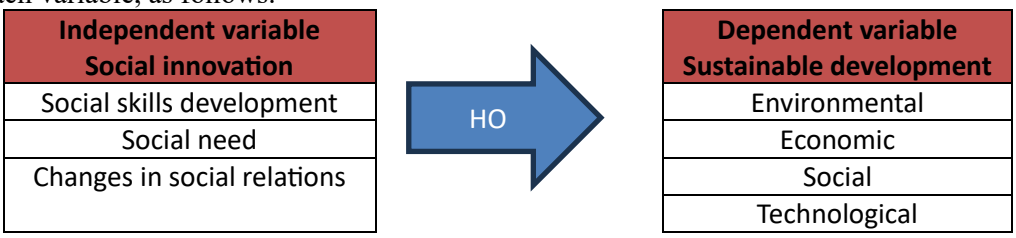

Figure (1) research model: prepared by the researcher based on theoretical literature and review of literature.

Research hypothesis:

The research sought to test the following hypothesis:

H0: There is no statistically significant effect at the significance level ($0.05 \geq \alpha$) of social innovation in its dimensions (increasing social capabilities, societal need, and changes in social relations) on sustainable development in its combined dimensions (environmental, economic, social, and technological) at Balqa Applied University.

Procedural definitions:

Social innovation: Social practices that arise in a new way in order to meet social needs more efficiently than existing practices, as new practices include updates on technologies, methods, and open sources (Al-Omari, 2022).

Procedurally defined: It is the university's response to confront the social problems facing the community in ways that are more modern, efficient, and of better quality than theexisting solutions, or the development of new solutions, which will be measured by the research tool.

Sustainable development: improving the quality of life of an individual or a group. It is a series of quantitative and qualitative variables among a specific group of the population that, over time, will lead to an increase in the standard of living and a change in lifestyle (Jim, 2023).

It is defined procedurallyas the university’s ability to preserve natural resources in all fields (environmental, economic, social, technological), and it will be measured through the research tool.

Research limitations: a set of spatial, temporal, thematic, and human limitations of the research.Each of themis explained below:

Spatial limitations: Al-Balqa Applied University.

Temporal limitations: the period between (2022-2023).

Human limitations: Faculty Members at Al-Balqa Applied University.

Thematiclimitations: Knowledge of the impact of social innovation on sustainable development at Al-Balqa Applied University.

Previous studies and the theoretical framework of the research

The following is a presentation of the most important previous studies, from most recent to the oldest.They are presented in two parts as follows:

Previous studies in Arabic

Ismail (2022) in“Social innovation as an approach to improving the quality of social services in civil society organizations” aimed to determine the effectiveness of social innovation as an approach to improve the quality of social services in civil society organizations. Itis considered one of the analytical descriptive studies. The researcher relied on the comprehensive social survey approach for social workers, specialists, officials, and members of the board of directors of civil society organizations in Ismailia Governorate.The study population reached 98 items, and the research was appliedto7 civil society associations in Ismailia. The results indicatedthe importance of the motives for using social innovation and realizing the importance and tools of social innovation. The findings also indicated the most important obstacles to social innovation in improving the quality of social services in civil society organizations.

Khaloufi and Shared (2020) discussedthe role of social innovation in enhancing the competitiveness of economic institutions.To achieve the objectives of the research, the opinions of 64 directors and managers of a group of economic institutions in Mila were collected and analyzed, by distributing a questionnaire prepared for this purpose that included a set of questions according to the research variables. The axis of social innovation was divided into satisfying human needs that are currently unmet, changes in social relations, and social and political capacity.The study concluded that there is a significant impact relationship of social innovation on the competitiveness of economic institutions.

Al-Mashikhi’s (2019) “Social innovation and its role in improving social sector services” deals with social innovation in terms of concept, which was reviewed through several different aspects and approached from many angles, some of which focused on the nature of innovation and the other on the characteristics of innovation and its organization. The research touched upon the dimensions of social innovation that affect the possibility of achieving it. The most important social innovation platforms contributing to the development and crystallization of ideas were highlighted. The role of social innovation in improving social sector services and its effective contribution to providing solutions and confronting social problems were also highlighted. The research concluded that social innovation is a modern concept that must be adopted as a strategy by policy makers when developing plans because of its importance.

Foreign language studies

Muhammad et.al (2023) aimed to identify the impact of environmental and social growth and governance (ESG)on the sustainable development goals of ASEAN countries. The research extracted secondary data from secondary sources, such as Sustainable Development Goals (SDG) reports and World Development Indicators (WDI) from 1986 to 2020. The current research used Auto Regressive Distributed Lag (ARDL) to test the association between variables. The results highlighted that environmental score, social score, governance score, and economic growth are positively associated with the Sustainable Development Goals of ASEAN countries. The article provides assistance to new researchers on achieving the Sustainable Development Goals and guides policy makers in developing policies related to achieving the Sustainable Development Goals through ESG.

Jim (2023) exploreda university's outcomes in applying the Sustainable Development Goals as an educational framework for understanding global sustainability. Qualitative methodology was used to explore students' perceptions regarding the effectiveness of industrial collaboration and experiential education project-based learning (EEPBL) methods for integrating Sustainable Development Goals learning into a university course. Through thematic analysis of 375 reflective essays and 18 semi-structured interviews, students reported enhanced awareness and knowledge of the Sustainable Development Goals, gained key employability skills, and developed new global perspectives. They found value in industry collaboration and EEPBL to gain a comprehensive understanding of the

Sustainable Development Goals in a business context, and many developed an appreciation for their own agency for future sustainability actions. This research can be presented as an example of an approach to both teaching students about the Sustainable Development Goals and embedding sustainability in their business curricula.

Pansuwonget. al. (2023) aimed to examine capital and competence variables – human capital, social capital, and personal entrepreneurial competencies – in relation to social innovation development and social enterprise growth in a developing country with an emerging social enterprise sector, i.e., Thailand. A hypothetical deductive approach was adopted and a quantitative survey through questionnaire was applied to collect data from the owners/senior management of 103 social enterprises in Thailand. The data were used to test the hypotheses and were analyzed using the partial least squares technique. The results revealed positive direct and indirect (mediated) relationships between human capital, social capital, personal entrepreneurial competencies, development of social innovation, and growth of Thai social enterprises. The Skills and training were major determinants of human capital while social interaction, trust, social identity, and shared knowledge were major determinants of social capital that influenced the development of social innovation. Goal orientation, information seeking, opportunity seeking, persuasion, and self-confidence were the main determinants of entrepreneurial competencies that also influenced the development of social innovation.

The study also revealed the mediating effects of the development of social innovation on the relationships between capital, efficiency, and the growth of social enterprises. The research fills the research gap from a theoretical perspective by identifying the variables of capital and efficiency and their additional determinants that differ from previous literature and that can affect the development of social innovation for social enterprises and where only limited research wasconducted. From an empirical perspective, this research attempts to investigate the associations between these variables and growth indicators in the context of social enterprises in a developing country where the sector is still in its infancy. Thestudy also helps clarify the direct and indirect (intermediate) effects of the development of social innovation in the context of the economic and social achievements of social enterprises.

Crossen-White et.al. (2022) presented the results of a feasibility research from a four-year project funded by the European Union (SAIL project to remain active and independent for longer). The funding stream was Interreg 2Seas, providing opportunities for coastal regions on both sides of the English Channel to work together on complex practical issues. The project focused on enabling older adults to remain active and independent for longer using a social innovation (co-production) approach. Ten experimental projects were developed; each pilot worked with an academic partner to conduct a feasibility study for ten pilots in France, Belgium, the Netherlands, and England. This research presents the barriers and facilitators (using logical models) of the social innovation process with the elderly that have broader relevance in terms of social innovation and its application. The findings informing this research are extensive and this is qualitative longitudinal research as much of the data is collected using an online wiki (supplemented with interviews and documentary analysis) which is a relatively new method of data collection.

However, the consistency of the results when analyzed by three researchers was clear. Empirically, such a complex method was required to study the complexity in implementing social innovation in practice. This project enabled a greater understanding of how social innovation is applied and highlighted contextual issues that could undermine or enable attempts to adopt this approach. For the 10 pilot projects created, there were clearly significant cultural and geographic differences in terms of participation and practical implementation of social innovation. Some of them, as mentioned in this research, are very important for the successful implementation of social innovation in a given environment and may indeed be a strength or a barrier in terms of engagement with local people and agencies.

The development of logical models is a useful approach when the topic under study is complex and is likely to produce a variety of process outcomes. The logical model focuses on the relationships between the resources used to create the intervention and what is produced in terms of outcomes. Thus, for this research, logic models helped provide an evidence-based framework that can support decision-making regarding the most effective use of limited resources to support successful social innovation processes in the future. The logical model for each of the results area presented here could be used in the future to help implement social innovation and to consider improving it in future research.

Social innovation

Nour et al. (2022)indicated that social innovation is a type of innovation that works to achieve social goals in an attempt to find answers to all social problems in order to find the best methods that contribute to providing distinguished services to members of society.Hamad (2021) explains it as providing basic needs that are not available in the market to come up with ideas different from what exists.

It also includes everything that involves a change in the social and institutional system as it helps in providing the comprehensive flexibility of the social systems in society to achieve adaptation processes through interaction between the administrative systems and the available opportunities (Al-Mashaikhi, 2019).Social innovation is also defined as the ability to organize through operations aimed at renewing strategy and plans in organizational behavior and systems, strategic organizational orientation, flexible organization, product improvement, and intelligent work (Kholoufi and Sharet, 2022).

Based on the aforementioned,this research considers that social innovation is a form of increasing social capabilities through a profound change in administrative methods and techniques and ways of organizing them in with more flexibility and qualityto find solutions to the problems facing individuals and organizations in a more efficient and effective manner.

Stages of social innovation

Ismail (2022) and Al-Enezi (2022) organized the stages of social innovation, as follows:

• Diagnosis and analysis:There is difficulty in diagnosing and analyzing social problems as a result of the angle through which the subject is viewed: as a social phenomenon or a problem.There are people who can explore points of imbalance and weakness and pointswhere problems occur and predict their occurrence.Accordingly, the necessary social changes and needs are identified based on the response emerging from the current situation, such as reducing costs or increasing employment opportunities.

• Suggestions and ideas: This stage is summed up in collecting appropriate suggestions and ideas to solve the problem, reach a treatment method, and provide the final solution to the affected party while providing ways to support the increase of social capabilities and creating an appropriate environment to encourage social innovation and the realization and acceptance of new points of view.

• Preparing prototypes that depend on experimenting with the ideas that have been reached and preparing plans and working on testing them through experimental application on a small sample to make any adjustments quickly and easily if needed.Then the best method is chosen from the alternatives available to come up with the ideal and appropriate method for the situation.

• Sustainability: the actual application of the solutions should be within maintaining the sustainability of the proper situation and in a healthy manner and the continuity of developing the basic structures of the models and their periodic improvement in line with the diverse and changing environmental and social needs as a result of the technological and scientific developments.

• Expansion and spread: Similar to innovations in business and technological innovations that spread, social innovation spreads among societies according to similar needs and circumstances, as it is applied on a large scale.

• Replacing and changing existing systems: Social innovation is part of social change and requires replacing old existing systems with new innovative systems according to the needs and available conditions.

Sustainable development

The concept of sustainable development is a new interest that implies preserving the environment and natural resources. This concept came as a result of the expansion actions harmful to the environment and the high level of global pollution.Adhikari and Shrestha (2023) pointed out that sustainable development means the process that meets the needs of society at the present time without harming the ability of future generations to achieve their goals and preserve their resources.

The Brundtland Report issued by the International Commission on Environment and Development in 1987 defined sustainable development as "development that meets the needs of the present without compromising the ability of generations to satisfy their needs" (Lee et.al., 2023).

The Food and Agriculture Organization (FAO) defines sustainable development (adopted in 1989) as: "The protection and management of the natural resource base and the direction of institutional and technological change in a manner that ensures the realization and maintenance of the satisfaction of human needs for future and present generations" (Mokskiet.al., 2023).

Sustainable Development Goals

Hawari (2023) clarifies the goals of sustainable development through the following points:

• Achieving a better quality of life for people: sustainable development works through the planning and implementation of development policies to enhance and develop people's quality of life in social, economic, mental, and spiritual aspects, relying on the quality rather than the quantity of growth in an acceptable, fair, and democratic manner.

• Respect for the natural environment: sustainable development is based on the relationship between human activities and the environment and deals with natural systems as the basis of human life.It can absorb the delicate relationship between the built environment and the natural environment and works to develop this relationship to become a relationship of harmony and integration.

• Enhancing individuals' awareness of existing environmental issues by increasing their awareness of existing environmental issues and developing their sense of responsibility towards these issues and urging them continuously to actively participate in finding appropriate solutions through their participation in the preparation, follow-up, and evaluation of the implementation of projects and programs related to sustainable development.

• Optimum use of resources: sustainable development deals with natural resources as limited resources; therefore, it tries not to destroy or deplete them and employs and uses them in the ideal way.

• Linking the goals of society with modern technology: the process of employing modern technology to serve and achieve the goals of society is done by educating individuals about the importance of various technologies in development and making use of available resources in improving and developing the quality of life and working to achieve its planned goals without any effects and negative risks to the environment.

• Bringing about an appropriate and continuous change in the priorities and needs of the members of the community: in a way compatible with the capabilities of the community

balancing economic and environmental development, controlling all environmental issues and formulating and preparing appropriate solutions.

• Meeting human needs: Human needs are diverse and numerous, including health, housing, education, infrastructure, quality of life, and facilities granted by the government and society while preserving resources for future generations.

The importance of sustainable development

Odeh (2023) and Mohdid (2023) identified to the importance of sustainable development in the following:

• Contributing to defining and preparing strategies for drawing up development policies within a balanced and appropriate future vision.

• Analyzing the political, economic, social, and administrative environment through a comprehensive integrated vision while preserving the available energies and resources.

• Unifying work and joining efforts between the private sector and the government sector on the agreed upon programs and goals that help meet the present and future needs of all segments of society.

• Providing opportunities to participate in the exchange of skills and experiences in training, education, and awareness to encourage innovation and creativity.

Dimensions of sustainable development

The dimensions of sustainable development are (Qasi, 2023; Al-Saadoun, 2023):

First, the environmental dimension: This is through harmonizing economic development with environmental preservation and taking into account the rights of future generations to natural resources, especially depleted ones, through the rational use of these resources, and taking into account the limited ability of the environment to absorb waste.

Second, the economic dimension: Sustainable development in developed countries aims reduce the consumption of natural resources and energy, which is many times greater in rich countries than in poor countries.

Third, the social dimension: Sustainable development includes human development aimed to improve the level of education and healthcare.This is in addition to the element of participation as development must be participatory so that community members participate in making development decisions that affect the quality of their life within foundations based on fairness, justice, equality, and empowerment for marginalized and less fortunate groups.

Fourth, the technological dimension: Sustainable development aims to achieve a rapid transformation in the global and local technological base to a new, more efficient, cleaner technology with a high ability to reduce environmental pollution through the balance between development goals and the restrictions imposed by the environment, so that development is not achieved at the expense of the environment.

The study's empirical framework:

Research Methodology

The researcher relied on the descriptive analytical approach due to its suitability to the nature and objectives of the research. The variables of the research represented by social innovation as an independent variable and sustainable development as a dependent variable were described, and the responses of the members of the research sample from the faculty members at Al-Balqa Applied University to the researchquestionnaire were analyzed to test the hypotheses and answer the questions.

Research population and sample

The research population included all 1520 faculty members at Al-Balqa Applied University, and a simple random strategy was used. An electronic questionnaire was distributed, and 156 questionnaires were retrieved. After checking the retrieved questionnaires, 6 questionnaires with incomplete data were excluded, and accordingly, the questionnaires suitable for analysis were 150 questionnaires.

Data collection methods

The research relied on several methods to collect data:

-Secondary sources: The secondary data related to the research and its variables were collected through books, literature, scientific journals, and previous studies.

- Primary sources: Primary data was collected by conducting field research and relying on a "questionnaire" that was specially developed for the purposes of the present research after reviewing previous studies and literature related to the subject of the research and its variables.

Research tool

The questionnaire was used as a tool for collecting primary data, and the research variables and measures were used as guidance in addition to similar previous sources and studies related to the variables.

Validity of the research tool

To ensure the validity of the research tool, it was presented to a number of faculty members in Jordanian universities for review and to express their opinions on the suitability and clarity of its items and vocabulary for the dimension to which they belong andtheir susceptibility to statistical analysis.Based on their opinions, suggestions, and modifications,a number of items have been modified.As a result, the research tool consisted of (35) items. As for constructive validity, the questionnaire is characterized by constructive validity because its items measure what they were set to measure by calculating a correlation coefficient (Pearson) based on (Sekaran, 2016), as shown in the two tables.

Table (2) Correlation coefficients of the items of the tool within the social innovation axis.

dimension	Item	Correlation coefficient on the axis	Correlation coefficient on the dimension	dimension	Item	Correlation coefficient on the axis	Correlation coefficient on the dimension
Increase social capabilities	1	.737**	.853**	Changes in relationships الإجتماعية	11	.785**	.808**
	2	.681**	.794**		12	.727**	.796**
	3	.733**	.855**		13	.655**	.790**
	4	.727**	.818**		14	.676**	.804**
	5	.583**	.644**		15	.683**	.795**
societal need	6	.663**	.796**				
	7	.689**	.753**				
	8	.691**	.758**				
	9	.667**	.763**				
	10	.721**	.721**				

** The correlation is statistically significant at a significant level of 0.001

It is clear from table 2, that the correlation coefficients of the items on their main dimensions, and on the total axis of the tool that represents social innovation, is positive and statistically significant at a significant level of 0.001.Hence, the indicators of the validity of the tool construction are high and suitable for the purposes of the study.

Table 3: Correlation coefficients of the tool items within the sustainable development axis.

dimension	Item	Correlation coefficient on the axis	Correlation coefficient on the dimension	dimension	Item	Correlation coefficient on the axis	Correlation coefficient on the dimension
Environmental dimension	16	.575**	.683**	Social dimension	26	.684**	.766**
	17	.596**	.722**		27	.729**	.809**
	18	.710**	.832**		28	.789**	.846**
	19	.707**	.817**		29	.710**	.813**
	20	.689**	.779**		30	.775**	.819**
Economic dimension	21	.727**	.807**	technological dimension	31	.789**	.846**
	22	.732**	.859**		32	.727**	.807**
	23	.719**	.892**		33	.732**	.859**
	24	.680**	.823**		34	.707**	.817**
	25	.779**	.887**		35	.689**	.779**

** The correlation is statistically significant at a significant level of 0.001

It is clear from the table above that the correlation coefficients of the items on their main dimensions, and on the total axis of the tool, which represents sustainable development, are positive and statistically significant at a significance level of 0.001.Thus, the tool's construct validity indicators are high and appropriate for the purposes of the research.

Reliability of the research tool

The reliability of the tool used to measure the variables (the questionnaire) was proved by calculating the value of the coefficient (Cronbach's Alpha) using SPSS, where the result is statistically acceptable if the value of the coefficient is greater or equal to (0.60) (Sekaran, 2016).The closer the value is to (1), i.e., 100%, this indicates higher degrees of reliability for the research tool.In view of the results in table (4) below, we find that the general reliability coefficient (alpha Cronbach) for the questionnaire's dimensions is high, reaching (873) for the total items.The reliability of the dimensions ranged separately between (0.811) as a minimum and (.949) as a maximum.This means that the research tool (questionnaire) has high reliability and can be relied upon in the field application of the research.

Table 4: Results of Cronbach's alpha test for the questionnaire items.

dimension	Number of items	coefficient of internal consistency (alpha Cronbach)
social innovation	15	.923
Increasing social capabilities	5	.846
social need	5	.811
Changes in social relationships	5	.857
sustainable development	20	.949
environmental dimension	5	.826
Economic dimension	5	.907
Social dimension	5	.869

technological dimension	5	.868
Total	35	.873

Normal distribution test:

A normal distribution test was performed for the collected data.To make sure that it follows the normal distribution, the skewness and Kurtosis coefficients werecalculated. If the values of skewness and Kurtosis are less than (1.960), this means that the data is normally distributed with a confidence of (95%).Based on the test information shown in table (5) below, the data is normally distributed, as each of the values of the skewness and Kurtosis coefficients were less than (1.960) for all research variables.

Table 5: Normal distribution of skewness and Kurtosis coefficient data.

variable type	variables and dimensions	Skewness coefficient	standard deviation	Skewness svalue	Kurtosis coefficient	standard deviation	Kurtosis value
independent variable	social innovation	.073-	.177	0.412-	.207-	.353	0.586-
	Increasing social capabilities	.337-	.177	1.903	.141-	.353	0.399-
	social need	.127-	.177	0.717-	.351-	.353	0.994-
	Changes in social relationships	.063-	.177	0.355-	.691-	.353	1.957-
dependent variable	sustainable development	.116	.177	0.655	.408-	.353	1.155-
	environmental dimension	.046	.177	0.259	.524-	.353	1.484-
	Economic dimension	.034-	.177	0.1920-	.614-	.353	1.739-
	Social dimension	.236-	.177	1.333-	.144-	.353	0.407-
	technological dimension	.119	.177	0.655	.408-	.353	1.175-

Table (6) One-Sample Kolmogorov-Smirnov Test to show the normal distribution of the research data.

	social innovation	Increasing social capabilities	social need	Changes in social relationships	sustainable development	environmental dimension	Economic dimension	Social dimension	technological dimension
Kolmogorov-Smirnov Z	.482	1.617	1.070	.960	.955	1.135	.949	.985	1.145
Asymp. Sig. (2-tailed)	.974	.011	.202	.316	.321	.152	.329	.287	.316

It can be seen from table 6 that the data follow a normal distribution by calculating the (Kolommogorv-Smirnonz) test.This was achieved as they all ranged from (.482 to 1.617), where the value of (Sig) was larger than (0.05), which is the significance level ($\alpha \leq 0.05$) approved in the case of the statistical treatment of this research (Gujarati, Porter and Sangeetha, 2017).

Presentation of results of data analysis and hypothesis testing.

Description of the demographic characteristics of the study sample

This section describes the demographic characteristics of the research sample, which included gender and years of work experience. Table (7) below shows the distribution of respondents by gender.

1. Gender

Table (7): frequencies and percentages of the study sample by gender.

Gender	Frequency	percentage %
Male	91	60.66
Female	59	39.34
Total	150	100.0

Table (7) shows the distribution of the research sample according to the gender variable; the largest category of the research sample is males, with a percentage of (60.66%), with a number of (91) employees.

2. Years of experience:

Table (8) Frequencies and percentages for the research sample according to years of experience.

Experience	Frequency	percentage %
Less than 10 years	14	9.34
10-15 years	73	48.67
15-20 years	32	21.33
More than 20 years	31	20.66
Total	150	100.0

Table (8) shows research sample individuals according to years of experience. The group from 10-15 years is the largest category with a rate of (48.67%) and a number of (73), while the category less than 10 years had the lowest number, as it reached (14) individuals and a rate of (9.34%).

Arithmetic means and standard deviations

This part reviews the responses of the research sample to the questionnaire items related to the dimensions of social innovation (increasing social capabilities, community need, changes in social relations) as an independent variable, and the dimensions of sustainable development (environmental, economic, social, technological) as a dependent variable, by measuring the arithmetic mean and standard deviation for each item separately.

First: Description of the dimensions of social innovation.

Table (9): Social innovation

Dimensions	Arithmetic mean	Arrangement of the importance of the items	Evaluation level
Increasing social capabilities	2.85	2	average
Community need	2.99	1	average
Changes in social relationships	2.74	3	average
social innovation	2.86		average

Table (9) shows that the level of social innovation at Al-Balqa Applied University was average.The arithmetic mean of the answers of the study sample on social innovation as a whole was (2.86).It is also clear from the table that the arithmetic means of the study sample views on the dimensions of social innovation were with an average evaluation level for all dimensions. The “social need” dimension came in first place with a mean (2.99),with an average evaluation score, while (increasing social capabilities) came second with an arithmetic mean (2.85).In the last rank came “Changes in Social Relations” with an arithmetic mean of (2.74) and average evaluation score.

First: the dimension of ‘ increasing social capabilities.’

Table (10): The arithmetic means and standard deviations of the respondents' answers to the items of (increasing social capabilities).

NO	Items	Arithmetic mean	standard deviation	importance of items	evaluation level
1	The university participate in discourses about the common good	2.94	0.725	1	average
2	The university takes into account the priority in meeting social needs.	2.87	0.711	2	average
3	The university administration accurately determines the social needs.	2.83	0.700	3	average
4	The university allocates sufficient financial support for social innovation.	2.81	0.697	4	average
5	The university works to introduce new solutions to the challenges facing societies.	2.80	0.780	5	average
Overall average		2.85	Average		

Table (10) shows that the general average was (2.85) from the total scale area of the unstructured data, which reflects an average level of importance, according to the respondent's opinion.It can be noticed that item (1), "the university's participation in discourses on the public interest," came first in the ranking with an arithmetic mean of (2.94), which reflects an average level of importance.On the other hand, item (5), which states "the university works to introduce new solutions to the challenges facing societies," got the lowest mean, which reached (2.80), which reflects an average level of importance.

Second: The social need dimension

The social need is one of the dimensions of social innovation; the arithmetic means and standard deviations were calculated for the research sample's responses to the social innovation items at Al-Balqa' Applied University.

Table (11): The arithmetic means and standard deviations of the respondent's answers to the items (social need).

No	Item	Arithmetic mean	standard deviation	importance of item	evaluation level
6	The university interacts with different civil society actors	3.49	0.725	2	Average
7	The university assigns a unit to receive complaints, notes, and suggestions to meet social needs.	3.55	0.711	1	Average
8	The university pays attention to disadvantaged groups in society.	2.86	0.700	3	Average
9	The university interacts with its surroundings with full transparency and clarity	2.74	0.697	4	Average
10	The university contributes to solving some social problems in its work environment	2.56	0.780	5	Average
Overall average		2.99	Average		

Table (11) shows that the general average amounted to (2.99) of the area of the total measure of social need, which reflects an average level of importance according to the respondent's opinion. Item (7), which states that "the university provides a unit to receive complaints, notes, and suggestions to meet the social need," came in the first place with an arithmetic mean of (3.55), which reflects an average level of importance.On the other hand, item (10), "the university contributes to solving some social problems in its work environment," got the lowest arithmetic mean (2.56), which reflects an average level of importance.

Third: change in social relations

Table (12): The arithmetic means and standard deviations of the respondent's answers to the items (Changes in Social Relationships).

No	item	Arithmetic mean	standard deviation	Arrange the importance of the items	evaluation level
11	The universityseeks toincrease itsoutput byinnovating anew process ortechnology	2.55	0.805	4	average
12	The university strives to create new jobopportunities by innovating lines/majors	2.86	0.831	2	average
13	The university provides, through its products and services, practical solutions of value to society.	2.54	0.793	5	average
14	The university responds to social demands in society.	2.70	0.916	3	average
15	The university seeks to apply the best human relations with the natural environment and society	3.10	0.757	1	average
Total changes in social relations		2.74	Average		

Table (12) shows that the general average was (2.74) of the total scale area of the semi-structured data, which reflects an average level of importance according to the respondent's opinion.Item (15), stating "The university seeks to apply the best human relations with the natural environment and society," came in the first place with an arithmetic mean of (3.10), which reflects an average level of importance.On the other hand, item (13), which states, "The university provides, through its products and services, practical solutions of value to society." got the lowest arithmetic mean (2.54), which reflects an average level of importance.

Description of the dimensions of sustainable development (the dependent variable).

The dependent variable in the research is sustainable development.Thus, to determine the relative importance of sustainable development in its dimensions (environmental dimension, economic dimension, social dimension),and to answer the second research question: What is the relative importance of sustainable development at Al-Balqa Applied University?Arithmetic means and standard deviations were calculated to identify the answers of the research sample regarding the level of sustainable development at Al-Balqa Applied University.

Table (13) The arithmetic means and standard deviations of the research sample's responses to the dimensions of sustainable development.

Dimensions	Arithmetic mean	Arrangement of importance of items	Evaluation level
Environmental dimension	3.60	1	average
Economic dimension	3.34	3	average
Social dimension	3.43	2	average
Technological dimension	3.34	4	average
Overall average	3.46	average	

Table (13) above shows that the level of sustainable development at Al-Balqa Applied University is average.as the general average of the answers of the research sample on the field of sustainable development as a whole was (3.4638).It is clear from the table that the arithmetic means of the study sample's opinion on the dimensions of sustainable development ranged between (3.6053-3.3457) with an average evaluation score for all dimensions.The "environmental dimension" came in the first rank with a mean of (3.6053), with an average evaluation score, while the "technological dimension" came last, with a mean of (3.3401) and an average evaluation score.

In order to identify the importance of each dimension of sustainable development at Al-Balqa Applied University according to itsitems, the arithmetic means and standard deviations were calculated, and the resultsare presented below.

The environmental dimension

The environmental dimension is one of the dimensions of sustainable development.The arithmetic means and standard deviations were calculated for the responses of the research sample on the items of the environmental dimension at Al-Balqa Applied University.

Table (14): The arithmetic means and standard deviations of the respondent's answers to the items (environmental dimension).

NO	Items	Arithmetic mean	standard deviation	Arrangement of importance of items	evaluation level
16	The university rationalizes the consumption of energy and encourages the use of renewable energy	3.42	.96450	1	Average
17	The university places environment friendly funding initiatives at the top of its priorities.	3.27	1.06880	5	Average
18	The university increases the ability of its employees and students to realize the importance of time and invest it appropriately in the digital work environment.	3.27	1.03835	4	Average
19	The university helps its employees employ advanced technological techniques in creating solutions to environmental problems.	3.34	1.01910	3	Average
20	The university develops environmental awareness among students and employees to interact positively with its environment.	3.42	1.04396	2	Average
Overall average		3.60	.73925	Average	

It is clear from Table (14) that the general average was (3.60) of the total area of the recruitment and selection scale, which reflects an average level of importance, according to the respondents' view. It is also noted that item (16) "The university Rationalizing the consumption of used energy and encouraging the use of renewable energy" came in the first place with an arithmetic mean of (3.42).On the other hand, item (17), stating "the university places environment friendly financing initiatives at the top of its priorities," got the lowest arithmetic mean of (3.27), which reflects an average level of importance.

Economic dimension

The economic dimension is one of the dimensions of sustainable development, and the arithmetic means and standard deviations were calculated for the research sample's responses to the items of the dimension at Al-Balqa Applied University.

Table No. (14): Arithmetic means and standard deviations of the respondent's answers to the items (the economic dimension).

No	item	Arithmetic mean	standard deviation	Arrangement of importance of items	evaluation level
21	The university uses modern means and technologies to develop work	3.42	.964	1	Average
22	The university works to ensure that its economic growth coincides with the economic environment	3.34	1.019	3	Average
23	The university works to motivate students to receive technical skills to help them find suitable job opportunities.	3.27	1.038	4	Average
24	The university has a pivotal role in supporting the desired economic reform policies and programs in society.	3.42	1.043	2	Average
25	The university will use the capital more efficiently to improve its financial budget.	3.27	1.068	5	Average
Overall average		3.34	.877	Average	

Table (15) above shows that the general average amounted to (3.3479) of the area of the total scale of the economic dimension, which reflects an average level of importance, according to the respondents.It is noted that Item (21), which states that "the university uses modern means and technologies to develop work."It came in the first place with an arithmetic average of (3.4255), which reflects an average level of importance. On the other hand, item (25) which states "the university uses capital more efficiently to improve its financial budget" got the lowest arithmetic average, which amounted to (3.2766), which reflects average level of importance.

Social dimension

The social dimension is one of the dimensions of sustainable development.The arithmetic means and standard deviations were found for the responses of the research sample on the items of sustainable development at Al-Balqa Applied University.

Table No. (16): Arithmetic means and standard deviations of the respondent's answers to the items (Social Dimension).

NO	Item	Arithmetic mean	standard deviation	Arrangement of importance of items	evaluation level
26	The university works to improve the level of educational service for students.	3.52	1.031	2	Average
27	The university improves the level of healthcare provided to its members	3.56	.964	1	Average
28	The university improves the level of social justice for its members	3.40	1.057	3	Average
29	The university offers its members opportunities for integration, empowerment, and continuous participation.	3.39	1.041	4	Average
30	The university works to continuously improve its level of good governance	3.30	1.074	5	Average
Overall average		3.43	.838	Average	

Table (16) shows that the overall average was (3.43) from the area of the total scale of the social dimension, which reflects an average level of importance from the point of view of the respondents.It is noted that item (27), which states: "The university works to improve the level of health are provided to its members," came in the first rank with an arithmetic mean of (3.56), which reflects an average level of importance.On the other hand, item (30) "the university works to improve its level of good governance," got the lowest mean of (3.30), which reflects an average level of importance.

Technological dimension

The technological dimension is one of the dimensions of sustainable development. The arithmetic means and standard deviations were calculated for the responses of the research sample on the items of sustainable development at Al-Balqa Applied University.

Table (16): The arithmetic means and standard deviations of the respondent's answers to the items (the technological dimension).

No	Item	Arithmetic mean	standard deviation	Arrangement of importance of items	evaluation level
31	The university provides educational opportunities through modern technologies.	3.52	1.031	2	Average
32	The university uses the cleanest, most efficient, and most competent technology to reduce pollution.	3.56	.964	1	Average
33	The university provides workers with the opportunity to use e-mail in actual participation and exchange of experiences.	3.40	1.057	3	Average
34	The university provides modern means and programs for digital training.	3.39	1.041	4	Average
35	The university sought to establish effective professional learning communities capable of using modern technology.	3.30	1.074	5	Average
Overall average		3.43	.838	Average	

It appears from Table (17) above that the total average was (3.43) of the area of the overall scale of the technological dimension, reflecting an average level of importance, according to the respondent's opinion.It is noted that item (32), which states "the university provides educational opportunities through modern technologies," came first with an arithmetic mean of (3.56), which reflects an average level of importance. On the other hand, item (35) - "the university seeks to establish effective professional learning communities capable of using modern technology" - got the lowest arithmetic mean of (3.30), which reflects an average level of importance.

Testing the research hypothesis

The research hypotheses were tested using the simple regression analysis, which is based on testing the effect of one independent variable on one dependent variable, and the multiple regression analysis, which is based on testing the effect of two or more independent variables on one dependent variable, as shown below.

Ho1: There is no statistically significant effect at a significant level ($\alpha \leq 0.05$) of social innovation in terms of its dimensions (increasing social capabilities, community need, changes in social relations) on sustainable development in terms of its combined dimensions (environmental, economic, social, technological) at Al-Balqa Applied University.

Before testing the hypotheses and conducting regression analysis, it is necessary to test the suitability of the data for statistical analysis and the absence of multicollinearity between the independent variables. Hence, the data was subjected to a multicollinearity test, which calculates two important indicators:

- Variance Inflation Factor (VIF): There is inflation if the value of (VIF) is equal to 10 or more.

- Tolerance: The value must be 0.1 or more.

Model	Collinearity Statistics	
	VIF	Tolerance
Increasing social capabilities	2.153	.464
Social need	2.634	.380
Changes in social relationships	2.170	.461

Table No. (18) Summary of the linear model of the relationship between social innovation and sustainable development.

Model Summary[b]					
Durbin-Watson	Std. Error of the Estimate	Adjusted R Square	R Square	R	Model
1.884	.49032	.546	.553	.744[a]	1

ANOVA[a]						
Sig.	F	Mean Square	Df	Sum of Squares	Model	
.000[b]	76.027	18.278	3	54.835	Regression	1
		.240	184	44.237	Residual	
			187	99.071	Total	

Coefficients[a]						
Sig.	t	Standardized Coefficients	Unstandardized Coefficients		Model	
		Beta	Std. Error	B		
.003	2.999	.217	.075	.226	Increase social capabilities	1
.153	1.435	.115	.083	.119	Community need	
.000	6.788	.493	.070	.475	Changes in social relationships	

a. Dependent Variable: sustainable development

Table (18) shows a direct correlation to test the main hypothesis. There is no statistically significant effect at a significant level ($\alpha \leq 0.05$) of social innovation in terms of its dimensions (increasing social capabilities, community need, changes in social relations) on sustainable development in terms of its dimensions (environmental, economic, social, technological) at Al-Balqa Applied University.The value of the correlation coefficient (R) was (.744a), which is a statistically significant value that indicates a statistically significant correlation between the independent variables and the dependent variable.The value of (R-square) is (.553), which is a statistically significant value that explains the ability of social innovation dimensions to influence sustainable development, as the statistical significance coefficient showed (0.000).Thus, the dimensions of social innovation explain (55.3%) of the change occurring in sustainable development.

The value of the (F) test was (76.027) with statistical significance (0.00).It is a statistically significant value indicating a discrepancy in the ability of the independent variables to influence the dependent variable. From the coefficients table, it is shown that the values of (B) in the dimension of increasing social capabilities amounted to (.226), and that the value of (t) is (2.999) at a level of significance (.003).This indicates that the dimension is significant, and that the value of (B) in the social need dimension reached (.119); also, the value of (t) is (1.435) with a significance level of (.153). This implies that the dimension is

not significant, the value of (B)in the dimension of changes in social relations reached (.475), and the value of (t) reached (6.788) with a significance level of (.000).

This means that the dimension is significant. Therefore, the main hypothesis is rejected by the zero formula and the alternative formula is accepted, which states that there is a statistically significant effect at a significant level ($\alpha \leq 0.05$) of social innovation in terms of its dimensions (increased social capabilities, community need, changes in social relations) on sustainable development in terms of its dimensions (the environmental dimension, the economic dimension, the social dimension, and the technological dimension) at Al-Balqa Applied University.

Findings and recommendations

Results:

The results showed that the level of social innovation at Al-Balqa Applied University was average. It is also evident from the findings that the arithmetic means of the research sample member's views on the dimensions of social innovation came as follows.The dimension of "Social need" came first with an average evaluation, followed by the dimension of "increasing social capabilities" with an average evaluation.The "changes in social relations" came in the last rank with an average evaluation score. This may be due to the degree of importance of social innovation and its diligentimplementation through the practice of all services related to social innovation becauseoftheir importance in obtaining the service, while ensuring appropriate analysis of the internal and external environment of the university.

The results also showed that the level of sustainable development at Al-Balqa Applied University was average. The environmental dimension came first with an average evaluation score; the social dimension came second with an average evaluation score, while the "economic dimension" came last also with an average evaluation score; finally, the technological dimension came with average evaluation, as well.This can be explained by the nature of the university's work and its effort to raise its performance through sustainable development and its level of performance. Therefore, sustainable development leads to raising the level of the university's work in a manner consistent with its vision and goals, which is reflected in the preservation of resources.

The results also showed a statistically significant effect at a significant level ($\alpha \leq 0.05$) of social innovation in terms of its dimensions (increasing social capabilities, community need, changes in social relations) on sustainable development in terms of its dimensions (environmental, economic, social, technological) in Balqa Applied University.This indicates that the university depends on integrating environmental protection systems from pollution in managing the activities of all its operations, starting with all stages, in order to achieve environmental sustainability, through an appropriate and reliable analysis of its social capabilities, social needs, and changes in social relations through various methods, such as community partnership with the private sector and local community.

Recommendations

Based on the findings, the research recommends the following:

-Preparing and conducting the necessary courses, seminars, and workshops on an ongoing and periodic basis for employees, especially with regard to developments in the field of social innovation.

-Promoting sustainable development at Al-Balqa Applied University through raising the efficiency of the environmental dimension operations for employees and increasing the courses offered to them in the field of performance development, and sustainable work to preserve natural resources.

- Conducting future studies on social innovation and its implications for sustainable development in various sectors, such as insurance companies, private hospitals, and pharmaceutical factories.

- Conducting future studies that clarify the role of social innovation in crisis management.

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