





Evaluating the impact of business incubators on promoting growth and creativity in women's projects in Jordan

 **Abdel Karim Fawwaz AlBataineh¹⁺**

 **Ayman Saleh Mustafa Harb²**

 **Ahmad Hisham Alnajjar³**

 **Read Shawkat Alhaj⁴**

^{1,4}Department of Finance and Banking, University of Petra, Jordan.

¹Email: aalbataineh@uop.edu.jo

⁴Email: ralhaj@uop.edu.jo

²Department of Accounting, Zarqa University, Jordan.

²Email: aharb@zu.edu.jo

³Department of Financial Technology, University of Petra, Jordan.

³Email: ahmad.alnajjar@uop.edu.jo



(+ Corresponding author)

ABSTRACT

Article History

Received: 18 March 2024

Revised: 22 August 2024

Accepted: 9 September 2024

Published: 25 September 2024

Keywords

Business incubators
Economic modernization
Jordan
Promoting growth and creativity
Sustainable development
Women's empowerment
Women's projects.

The goals of the vision included economic modernization and, based on the royal directives, the necessity of doubling Jordanian women's participation in the labor market, not in order to improve the annual growth rate but in order to invest in achieving gender parity with economic participation and women's empowerment. Despite the presence of many obstacles to achieving this, the Jordanian government has legislated laws that help remove these obstacles, but they still need to be activated at the level of all activities, including equality between wages between males and females, etc. The study concluded with the necessity of activating the role of business incubators to empower women's economic, political, health, educational, etc. role, with the necessity of investment and equality in the use of human capital, especially females, after rehabilitation and training, especially in the areas where women live, in order to achieve growth and creativity. The focus is on academic education only; it led to an increase in the unemployment rate among females in Jordan, and this helped them migrate from villages to the city in search of a better job opportunity. Therefore, the government's intention to transform education into two tracks: academic, vocational, and industrial, will give women an incentive to enter into a new challenge and give them an opportunity for creativity through coordination with business incubators to develop entrepreneurial projects and enable women to achieve sustainable development.

Contribution/Originality: This study focuses only on the impact of business incubators on women's projects in rural Jordan and shows several strategies for investment decisions and legislative reformation designed to buttress women's entrepreneurship with an underlying economic argument. This study combines reliability testing with a deep dive into demographics to best evaluate incubator effectiveness.

1. INTRODUCTION

Jordan enjoys a geographical location in the middle of the continents of Asia and Europe and is characterized by political and security stability in an environment surrounded by disputes and conflicts. The Jordanian state is also oriented to open free markets and facilities that help encourage investment, which helps to reach global markets, and what distinguishes Jordan is the trained and qualified human cadre, which is highly efficient, which is essential to achieve economic stability, especially since the female birth rate is greater than male births in the near

future and the focus remains on the male component in Jordanian society without giving a real opportunity to invest in the female component in the near future.

In the article [Al-Isas \(2022\)](#) the Jordanian government in 2015, through Vision 2030, pledged to bridge the gender gap and raise the rate of Jordanian women's participation in all political, economic, educational, health fields, etc. through local and international programs, as Jordan ranks 131st among 156 countries in the gender gap index for the year 2021, noting that in 2018 it ranked 138 out of 140 countries, where Jordanian women face challenges and difficulties in several fields, especially economic and entrepreneurship, as the percentage of economically inactive women is 85% despite the decline. Percentage of uneducated women; the unemployment rate among educated women is 78% who hold a bachelor's degree. In this study, we must examine the reasons why women do not participate effectively in the economic field and negatively affect sustainable development projects ([Department of Statistics Gender Indicators, 2021](#)).

Perhaps one of the most important challenges is the increasing percentage of women borrowing from lending institutions, as they face many cases of default, but one of the most important reasons is also the inequality between the sexes, as 4.7% of women business owners are out of the number of business owners, and 28% is the number of female subscribers. When social security is excluded from the number of subscribers, the economic participation rate for females is 17.7% while for males it is 59.4%, and the percentage of women earning as wages is 94.7%. Perhaps the increase in this percentage is due to the lower wages of females than males, as the average wage of females is 446 dinars, while that of males is 499 dinars, meaning that the difference is 53 dinars in favor of males ([Department of General Statistics Statistical Yearbook, 2021](#)).

In a report by the International Labor Organization, the Jordanian women's participation rate in the labor market reached 14%. The Jordanian Minister of State for Legal Affairs said that the weakness of women's economic empowerment is considered the main stumbling block, and that there are attempts to create projects in rural areas in Jordan, as this helps in sustainable development, such as water, electricity, and agricultural projects etc. ([Amawi, 2022](#)).

Therefore, this study aims to foster parity between men and women, particularly in sustainable projects and entrepreneurship within rural communities, where customs and traditions still pose a significant barrier to women's involvement in this field. Perhaps this study helps guide government policies through effective programmers to develop women's projects in rural areas with major projects that support their areas without the need to migrate to major cities to search for opportunities, and this comes through motivating females to education, training, and awareness of the importance of their role in society and stimulating the Jordanian economy.

One of the reasons for not developing the role of women in entrepreneurship projects is the lack of a clear understanding of the importance of business incubators and the logistical services they provide, whether through financing, training, technical support, or others.

We must also identify the real reasons for the lack of economic empowerment of Jordanian women and the achievement of job opportunities for women, whether social or economic reasons, with the importance of clarifying the factors affecting the relationship between sustainable development and the role of business incubators.

There is also an issue of insufficient attention to sustainability projects for Jordanian women in rural areas compared to other areas of the economy. There is a lack of research that explores the impact of business incubators on these projects in rural areas. This lack of research may hinder efforts to promote sustainable projects for women in these areas and develop the role of women in local development.

1.1. Hypotheses

H0.1: There is no statistically significant effect at the level $(0.05 \geq \alpha)$ of supporting business incubators for women's projects in promoting the growth and creativity of these projects in the Jordanian market.

HO.2: There is no statistically significant effect at the level ($0.05 \geq \alpha$) of funding and training in promoting growth and creativity in women's projects in Jordan.

HO.3: There is no statistically significant effect at the level ($0.05 \geq \alpha$) of supporting business incubators for women's projects through the presence of financing and training in promoting growth and creativity among women in Jordan.

1.2. Study Variables

Independent variable:

1- Business incubators.

2- Financing and training.

Dependent variables: Growth and creativity.

2. LITERATURE REVIEW

As for the study [Mohammed \(2023\)](#) it recommended the necessity of localizing sustainable development in Palestinian society and the importance of sustainable development for small projects through business incubators. We need to educate the community about the nature of sustainable projects, include them in a local community awareness program, and established foundations and laws that facilitate the implementation of these projects. Development in a positive manner, with the need to involve stakeholders in the planning process in a broader manner, supports awareness and contributes to effective education, and concludes partnerships, agreements, and cooperation with the private sector to effectively enhance the role of women. As for the study [Areej \(2022\)](#) the study found that the role of society in supporting women entrepreneurs in the Abha region of Saudi Arabia is moderate. The study focused on the role of social support in enhancing the role of women in sustainable projects and recommended the necessity of spreading culture and awareness of entrepreneurship among women in Saudi Arabian women in order to enhance the return. Saudi universities must engage in promoting education and awareness among students to amplify the role of women in entrepreneurship, emphasizing the crucial role of the family in achieving this.

As for the study by [Bahaaeldeen and Abed Elfatah \(2022\)](#) it talked about the life difficulties facing Palestinian women in light of the occupation and the struggle of Palestinian women to improve the level of political, social, and economic life. The study also concluded that study plays a crucial role in enhancing the role of women in Palestinian society and their participation in leadership positions, whether in the government, municipalities, unions, or associations. The development of education and technology has helped increase women's contribution to their participation in sustainable projects that are concerned with infrastructure, water, and agriculture in particular. The study also talked about an attempt to abolish some legislation and laws that distinguish between men and women in society, especially in various fields. Professionals for the study [Nasr \(2022\)](#). The study focused on the importance of entrepreneurial education in achieving community leadership and sustainable development by providing the basic components of community leadership. The study emphasized the role of universities in applying entrepreneurial education and providing the necessary services such as cognitive, educational, community, and technological services in order to achieve sustainable development. Individuals achieve continuous prosperity when they possess the ability to engage in distinguished entrepreneurship and prioritize the significant role of women, particularly in leading sustainable projects. As for the study by [Hashem and Bargal \(2020\)](#) it talked about rural development projects in Egypt and the importance of women's role in them, especially in dairy production, indicators of economic efficiency, and the obstacles that Egyptian women face in the countryside in managing small projects.

The study emphasized the importance of technology courses. Modern labor force, especially women, due to their major role in business incubators for small projects in dairy production, with the need to provide financial support and secure easy-to-pay loans without interest and complex conditions. The study also suggested that

specialized associations should continue their awareness-raising and education efforts to foster the development of sustainable projects. And to enhance the role of women in its study Hanan (2019) it called for the need to empower women in all political, economic, social, educational, and health fields. The study was able to develop a measurement model to estimate the cumulative empowerment index for women in Arab countries. The study recommended utilizing human capital in both ways to achieve sustainable development and attract significant investments. In order to improve economic growth, it is necessary to take in to account the reasons for the low participation of women in all fields. As for the study by Al Wleيدات and Al-Kharouf (2019) on the motives that made Jordanian women in the Madaba region turn to small projects, the difficulties they faced, the reasons that prompted them to search for financial financing, and what is the social and economic impact that these projects had in the countryside of the city of Madaba, the study called for the importance of forming. Business incubators for small projects in the countryside, conducting special training courses in administrative and financial matters, and helping to organize local and international exhibitions to help promote Jordanian women's businesses in the countryside.

As for the study Rahman and Ahmed (2018) the researcher talked about the sustainable strategic plan for Egypt in 2030, which is centered on an open and productive society to achieve well-being, security, and stability for society by setting the basic pillars of this development in order to achieve a balance of social, economic, and environmental development, which reflects this by reducing unemployment. Egypt's population growth is contributing to poverty. Among the results of the study is that business incubators are considered an essential pillar for the success of sustainable development projects, especially those led by Egyptian women to take their role in entrepreneurship, according to the study's findings. As for the study Al-Zeinetal (2017) it recommended the importance of small projects and their ability to adapt to the changes and requirements of the times. Small projects are considered one of the modern innovations in creating a competitive advantage and keeping pace with economic, environmental, social, and technological changes through business incubators, which are considered a pillar adopted by developed countries for small projects. The study also aimed to activate business incubators to fulfill their strategic role in supporting small enterprises, while also removing any obstacles that hinder their effectiveness, particularly in assisting Algerian women in achieving leadership roles in the economic field.

3. STUDY METHODOLOGY

Methods: means Method is the technique or way that is used to discover truth based on a set of fixed general rules regarding gathering and analyzing information for producing scientific results (Al-Dulaimi & Ali, 2020). A descriptive study design was employed. Another key point for this approach is that data should be collected from a sample, and then it gets arranged, measured quantitatively, and displayed by using frequency tables. This method compiles the data and analyses them with measures of central tendency and dispersion (Cooper & Schindler, 2014). The study also utilized the exploratory approach, which assists in elucidating (clarifying) the nature of the problem by defining its circumstances, elements, and dimensions, establishing their connections, scrutinizing, quantifying, and interpreting the data, and formulating a comprehensive yet precise depiction of the issue or phenomenon. This aids in the generalization of the extracted information. And offer ideas and remedies to deal with those (Sekaran & Bougie, 2020). The study then adopted the inferential approach, which is concerned with techniques that use representative sample selection to infer the existence of results in a statistical population and subsequently produce quantitative data. This goal of this method is to establish a database that allows for the interference of properties or connections related to the information. As the primary focus of the interpretation process is inferential analysis, we can assume that the sample and the original population share the same characteristics (Cooper & Schindler, 2014).

3.1. Study Population and Sample

The study population consists of all Jordanian women who work or are project owners in Jordan. As for the study sample, it was drawn via an online questionnaire and published via Google Form using the "Snowball

Sampling” method, and in this type of sampling. Some individuals are identified to participate, and they are asked to identify other individuals interested in the topic to participate in order to reach the largest number of participants. This method is used when it is difficult to reach the community (Nasrallah, 2016) and (492) questionnaires were received, all of which are suitable for statistical analysis, and this number. Representative and appropriate for the study population based on the sampling table and within the allowable margin of error for data accuracy (0.05) developed by Sekaran and Bougie (2020) which shows that a sample size of more than (384) observations represents any statistical population.

3.2. Stability of the Study Tool

Cronbach's Alpha was relied upon to measure the internal consistency of the study's paragraphs, the results of which are shown in Table 1.

Table 1. Reliability test using the value of the Cronbach alpha coefficient.

Variable type	Independent		Dependent	Overall index
Variables	Business incubators	Financing and training	Growth and creativity	
Cronbach alpha	12	8	8	28
Number of paragraphs	0.890	0.810	0.803	0.923

Table 1 makes it evident that the study tool's items had an internal consistency coefficient (Cronbach Alpha Coefficient) ranging from 80.3% to 89%, with a degree of reliability of 92.3% for every item. According to Creswell and Creswell (2018) the study tool's minimum reliability coefficient (Cronbach Alpha) is 0.70. Value closer to (1), or 100% indicate higher degrees of reliability. As a result, every internal consistency coefficient shown in the preceding table represents a reliable indicator.

3.3. The Normal Distribution Test

The skewness coefficient's value was extracted. The distribution's symmetry is assessed using this test. A value that is not within the range of (± 1) signifies a highly skewed distribution. Kurtosis's value was extracted. If the kurtosis value is less than (± 1.96) at the 0.05 level, the distribution is considered normal (Hair, Black, Babin, Anderson, & Tatham, 2018).

Table 2. Normal distribution of data based on the Skewness & Kurtosis test.

Variables	Business incubators	Financing and training	Growth and creativity
Skewness	-0.439	-0.559	-0.440
Kurtosis	0.452	0.295	0.594

Based on the test data shown in Table 2, it is clear that the distribution of the data was normal, as the Skewness values did not fall outside the range of (± 1) and the Kurtosis value did not exceed (± 1.96) at the level of (0.05).

3.4. Multicollinearity Test

Multicollinearity means the presence of a strong and significant correlation between two or more independent variables, and it is considered one of the most important negative effects resulting from the presence of multicollinearity between independent variables. This correlation or multicollinearity leads to the lack of independence in the regression coefficients, as well as exhaustion in extracting variance. On the dependent variable and the lack of reliability of these coefficients (Amer, 2018) Linear interference between independent variables is identified and discovered through the Variance Inflation Factor (VIF) for each of the independent variables, so that if the value of (VIF) is less than (5), it can be judged that there is no linear duality, by dividing (1) by the inflation

factor. (VIF) shows the result of the permissible variance (tolerance). If its value does not exceed (1) and is greater than (0.2), it also indicates non-linearity (Hair et al., 2018). By examining the correlation matrix (Pearson) between the independent variables in second procedure, we can judge that there is no high correlation between them. If the value of the correlation coefficient does not exceed (0.80), this leads to the absence of linear pairs between the independent variables (Gujarati, Porter, & Gunasekar, 2017).

Table 3. Results of the multicollinearity test.

Variables	Business incubators	Financing and training	Inflation factor (VIF)	Allowable variance
Business incubators	1		1.485	0.674
Financing and training	0.571	1	1.485	0.674

It is clear from the results of Table 3 that the value of the inflation factor (VIF) is less than (5) for each of the independent variables, and the value of the allowable variance factor is greater than (0.2) and does not exceed (1), as this is an indication that there is no problem of multicollinearity. It is clear that the value of the correlation coefficient between business incubators, financing, and training was (0.571) and does not exceed (0.80), and therefore the values are considered appropriate for conducting statistical analysis.

3.5. Autocorrelation Test

This test, which is based on Table 4, verifies that there is no autocorrelation in the data, which impairs the regression model's predictive power. This is confirmed using the Durbin-Watson test, whose value is restricted to a range of 0 to 4. A value between 1.5 to 2.5 means that there is no autocorrelation problem and is acceptable, and Table 4 displays the test's results, which clearly show that the Durbin-Watson value determined for the study hypotheses was greater than (1.5) and less than (2.5). 5 and less than 2.5 at the 0.05 level, suggesting that autocorrelation is not present and that the multiple regression model can be used with it (Tabachnick & Fidell, 2018).

Table 4. Results of the autocorrelation test (D-W) for the study hypothesis.

Hypothesis	Ho.1	Ho.2	Ho.3
Calculated D-W value	1.706	1.789	1.739
The result	There is no autocorrelation problem		

3.6. Description of the Demographic Data of the Study Sample Members

Table 5 shows the results of the frequency and percentage of demographic data for the sample members' answers.

Table 5. Description of demographic data.

Variable	Category	Repetition	Percentage
The age	Less than 25 years old	38	%7.7
	From 25 years to 35 years	165	%33.5
	From 36 years to 45 years	172	%35
	From 46 years to 55 years	96	%19.5
	More than 55 years old	21	%4.3
	The total	492	100%
Qualification	Diploma	70	%14.2
	Bachelor's	277	%56.3
	Higher diploma	25	%5.1
	Master's	62	%12.6

Variable	Category	Repetition	Percentage
	Ph.D.	28	%5.7
	Other than that,	30	%6.1
	The total	492	100%
Marital status	Married	282	%57.3
	Widow	26	%5.3
	Divorced	45	%9.1
	Single	139	%28.3
	The total	492	100%
Monthly income	Less than 260 dinars	89	%18.1
	From 260 dinars to 349 dinars	50	%10.2
	From 349 dinars to 499 dinars	216	%43.9
	From 350 dinars to 649 dinars	94	%19.1
	More than 650 dinars	43	%8.7
	The total	492	100%
Years of experience	Less than 5 years	104	%21.1
	From 5 years to 10 years	153	%31.1
	From 10 years to 15 years	134	%27.2
	More than 15 years	101	%20.5
	The total	492	100%
Nature of the activity	Industrial	18	%3.7
	Agricultural	21	%4.3
	Commerce	25	%5.1
	Education	309	%62.8
	Communications and technology	46	%9.3
	Healthy	43	%8.7
	Energy	13	%2.6
	Financial and insurance	17	%3.5
	The total	492	100%

Table 5 reveals that the highest percentage (35%) of Jordanian women working or business owners within the study sample range in age from 36 years to 45 years, and their number is (172), while (4.3%) of the sample members are over the age of 55. years old, and their number is (21). We note that (56.3%) of the sample members' academic qualifications are a bachelor's degree, and their number is (277), while (5.1%) are (25) have their academic qualifications are a high diploma. It turned out that (57.3%) of the sample members are married, and their number is (282), while (5.3%) of the sample members are widows, and their number is (26) We also note that (43.9%) of the sample's monthly income ranges from 350 dinars to 499 dinars, and their number is (216), while (8.7%) whose monthly income ranges from 650 dinars or more, and their number is (43). It was found that (31.1%) of the Jordanian women working or entrepreneurs within the study sample had experience ranging from 5 years to less than 10 years, and their number was (153), while (20.5%) had more than 15 years of experience, and their number was (101). We note that the vast majority of the sample members, whose nature of activity is educational, is (309), with a percentage of (62.8%), while (2.6%) of the sample members, whose nature of activity is in the energy field, is (13).

3.7. Description of the Variables of the Study Tool

To find out what Jordanian women working or project owners thought about the study's variables, the standard deviations, arithmetic mean, rank, relative weight, and degree of agreement were examined and computed. We calculated the degree of relative agreement using the following equation: Category length is equal to the alternative's upper and lower bounds times the number of levels, or $5-1/3 = 1.33$. The arithmetic mean is classified

as being in the low rating range if it falls between (1-2.33); in the medium rating range if it ranges between (2.34-3.66); and in the high rating range if it exceeds (3.66). With gratitude (Subedi, 2016).

3.8. Descriptive Statistics Results

1) Results of descriptive statistics for the independent variable (business incubators):

Table 6 displays the arithmetic mean, standard deviation, relative weight, degree of importance, and rank of the answers of participants within the study sample towards the variable (business incubators), which was measured based on (12) items.

Table 6. Arithmetic mean, standard deviation, rank, relative weight, and degree of agreement for the business incubators variable.

A	Paragraph	Mean	Standard deviation	Relative weight %	The level	Rank
1	Business incubators provide technological consulting for the project with high efficiency to market the project through social media and modern technology	3.86	0.812	77.2	High	2
2	Business incubators conduct training courses and workshops on marketing sustainable projects	3.73	0.915	74.6	High	7
3	Business incubators, with their experience, help solve most of the problems facing the project or the problems that hinder the sustainability of the project.	3.85	0.840	77	High	3
4	Business incubators act as intermediaries to help market the project based on their expertise and relationships with local, regional, or international institutions.	3.64	0.768	72.8	Middle	11
5	Business incubators are aware of the quality of products and services provided by the project, which helps in the sustainability of the project	3.66	0.774	73.2	Middle	10
6	Business incubators, in coordination with specialists, develop a promotional plan for the project's products through local and international exhibitions	3.69	0.765	73.8	High	8
7	Business incubators put all their scientific expertise through conferences and seminars acquired in the project to achieve sustainable development	3.87	0.842	77.4	High	1
8	Business incubators assist project owners familiarize themselves with all local and international laws and legislation to assist in marketing and support to achieve sustainable development.	3.62	0.930	72.4	Middle	12
9	Business incubators provide adequate study of marketing costs for entrepreneurs	3.69	0.855	73.8	High	9
10	Incubators provide the necessary marketing advice to support the project	3.74	0.876	74.8	High	5
11	Business incubators provide all technical support for the project through their expertise to the project owners and the local community surrounding the project through education and awareness.	3.85	0.880	77	High	4
12	Business incubators are adequately informed of the needs of the local, regional, or global market for the project	3.73	0.896	74.6	High	6
Overall index of business incubators		3.74	0.570	74.8%	High	

From Table 6, it is clear that the “independent variable (business incubators)” achieved an arithmetic mean of (3.74) and a relative weight of (74.8%) of the total index area. It reflects a high level of relative importance, based on the answers of the study sample members, with a standard deviation. It was (0.570), as Paragraph (7), states “I achieved “the first rank” with an arithmetic mean of (3.87) and a standard deviation of (0.842) and “a high” degree of

relative importance, while Paragraph (8) achieved the last rank, with an arithmetic mean (3.62) with a standard deviation of (0.930) and a moderate degree of relative importance.

3.9. Results of Descriptive Statistics for the Independent Variable (Financing and Training)

Table 7 shows the arithmetic mean, standard deviation, relative weight, degree of importance, and rank for the responses of participants within the study sample towards the variable (financing and training), which was measured based on (8) items.

Table 7. Arithmetic mean, standard deviation, rank, relative weight, and degree of agreement for the financing and training variable.

B	Paragraph	Mean	Standard deviation	Relative %weight	The level	Rank
1	It supports providing courses on modern technology related to the nature of the project's work to help competition and sustainability	3.86	0.829	77.2	High	4
2	The importance of providing financial consulting services before and after starting the project	3.89	0.875	77.8	High	3
3	Do you agree on the necessity of holding seminars and conferences for specialized experts to benefit from their expertise?	3.83	0.942	76.6	High	6
4	The importance of providing workshops for workers in your project at all levels to increase efficiency and effectiveness to achieve sustainable development	3.80	0.968	76	High	8
5	It is necessary to review all the facilities provided for the appropriate financing of the project, whether from local, regional or international bodies, and the resulting fines	3.95	0.905	79	High	2
6	It supports the necessity of providing courses on the importance of quality and competitiveness at the local and international levels	3.83	0.984	76.6	High	7
7	It is necessary to provide training workshops in the same field of sector or industry	3.85	0.900	77	High	5
8	It is necessary to develop a plan for the economic feasibility of your sustainable project	3.97	0.847	79.4	High	1
Overall index of financing and training		3.87	0.595	77.4%	High	

From Table 7 we note that the "independent variable (financing and training)" achieved an arithmetic mean of (3.87) and the relative weight reached (77.4%) of the total index area, which reflects a high level of relative importance based on the answers of the study sample members, with a standard deviation of (0.595), as Paragraph (8), which states achieved "first place" with an arithmetic mean of (3.97) and a standard deviation of (0.847) and a high degree of relative importance, while Paragraph (4) achieved last rank, which states with an arithmetic mean of (3.80). The standard deviation was (0.968), indicating a significant level of relative importance.

2) The results of the descriptive statistics were obtained for the dependent variable (growth and creativity): -

As shown in Table 8, the arithmetic mean, standard deviation, relative weight, degree of importance, and rank of the answers of participants within the study sample towards the variable (growth and creativity), which was measured based on (8) items.

From Table 8, it is clear that "the dependent variable (growth and creativity)" achieved an arithmetic mean of (3.85) and the relative weight reached (77%) of the total index area. It reflects a high level of relative importance, based on the answers of the study sample members, with a standard deviation of (0.546), as Paragraph (8), which states achieved first place with an arithmetic mean (4.05) and a standard deviation of (0.815) and a high degree of relative importance, while Paragraph (6) achieved last rank, which states with an arithmetic mean (0.546). The score of 3.53, with a standard deviation (0.918), indicates a moderate level of relative significance.

Table 8. Arithmetic mean, standard deviation, rank, relative weight, and degree of agreement for the growth and creativity variable.

C	Paragraph	Mean	Standard deviation	Relative %weight	The level	Rank
1	Agree on the need for project owners to be informed of the laws and legislation pertaining to each industry in order to know how to benefit from those laws and legislation for growth and creativity	3.64	0.818	72.8	Middle	7
2	Do you support that laws and legislation hinder Jordanian women's progress towards creativity, growth, and sustainability	3.99	0.777	79.8	High	2
3	It supports the need to pay attention to the use of social media for all employees in your project to help in growth, creativity, and competitiveness	3.96	0.798	79.2	High	4
4	You support the importance of conducting courses for all employees in your project to raise awareness of the importance of growth and creativity to achieve competitiveness and sustainability with specialized experts	3.91	0.841	78.2	High	5
5	It confirms that all employees in your project have the awareness and culture required for growth, creativity, and innovation	3.98	0.914	79.6	High	3
6	Agree that the government helps Jordanian women remove all obstacles that prevent women from being empowered to grow and innovate in sustainable entrepreneurial projects	3.53	0.918	70.6	Middle	8
7	Agree that growth and creativity lie in the areas (cities or villages) of the original project owners more than in other areas, as their areas are optimally exploited to achieve growth, creativity, and sustainability	3.72	0.843	74.4	High	6
8	The necessity of holding conferences for all project owners in the same industry for growth, creativity, competition, and sustainability	4.05	0.815	81	High	1
Overall index of growth and creativity		3.85	0.546	77%	High	

4. RESULTS OF TESTING THE STUDY HYPOTHESES

HO.1: "There is no statistically significant effect at the level ($0.05 \geq \alpha$) of supporting business incubators for women's projects in promoting the growth and creativity of these projects in the Jordanian market."

The first hypothesis was subjected to simple linear regression analysis, and the following results were reached:

The presence of a statistically significant impact of business incubators in promoting growth and creativity in women's projects in Jordan is indicated by the value of T-value (16.846), which is greater than its tabular value of (1.96) and significant at the level of significance ($\alpha \leq 0.05$), and it is noted that the value of "correlation coefficient $R = (60.6\%)$ " indicates a strong relationship between the two variables. The value of the coefficient of determination ($0.367 = R^2$) indicates that business incubators explained (36.7%) of the variation in growth and creativity in women's enterprises in Jordan. As shown in Table 9.

HO.2: "There is no statistically significant effect at the level ($0.05 \geq \alpha$) of financing and training in promoting growth and creativity in women's projects in Jordan."

The second hypothesis was subjected to simple linear regression analysis, and the following results were reached:

Table 9. Results of the simple linear regression model of the impact of business incubators in promoting growth and creativity.

Hypothesis	Model summery			ANOVA					Coefficient				Result HO
	R	R ²	Adj R ²	F	F. sig.	DF	Constant	B	Std. error	T calculated	T tabulation	T. sig.	
H _{0.1}	0.606	0.367	0.365	283.795	0.00	491	1.676	0.580	0.034	16.846	1.96	0.00	Reject

Table 10. Results of the simple linear regression model of the effect of funding and training in promoting growth and creativity.

Hypothesis	Model summery			ANOVA					Coefficient				Result HO
	R	R ²	Adj R ²	F	F. sig.	DF	Constant	B	Std. error	T ^l calculated	T tabulation	T. sig.	
H _{0.2}	0.664	0.440	0.439	385.410	0.00	491	1.489	0.609	0.031	19.632	1.96	0.00	Reject

Table 11. Results of the multiple linear regression model for business incubators, financing, and training on growth and creativity.

Hypothesis	Model summery			ANOVA					Coefficient				
	R	R ²	Adj R ²	F	F sig.	DF	Constant	Statement	B	Std. error	Beta	T	T. sig
H _{0.3}	0.719	0.516	0.514	261.108	0.00	2	0.966	Business incubators	0.322	0.037	0.336	8.776	0.00
						489		Financing and training	0.433	0.035	0.471	12.302	0.00
Value of (F) tabulation=3.00								Value of (T) tabulation=1.96					

The existence of a statistically significant effect of funding and training in promoting growth and creativity in women's enterprises in Jordan is evidenced by the value of T (19.632), which is greater than its tabular value of (1.96) and significant at the level of significance ($\alpha \leq 0.05$), and it is noted that the value of the correlation coefficient $R = (66.4\%)$, indicating a strong relationship between the two variables. The value of the coefficient of determination ($0.440 = R^2$) indicates that (funding and training) explained (44%) of the variation in growth and creativity in women's enterprises in Jordan. As shown in [Table 10](#).

HO.3: There is no statistically significant effect at the level ($\alpha \geq 0.05$) of supporting business incubators for women's projects through the presence of financing and training in promoting growth and creativity in women's projects in Jordan.

The second hypothesis was subjected to multiple linear regression analysis, and the following results were reached:

The value of (F. sig) equal to (0.00), which is less than (0.05), as well as the value of (F) indicate that there is "a statistically significant impact of business incubators, financing, and training in promoting growth and creativity" in women's projects in Jordan, according to [Table 11's](#) results. The calculated amount of 261.108 exceeds the tabulated value of 3.00. There is a strong correlation between the variables, as indicated by the correlation coefficient (R) value and its equality (71.9%). The value of (R^2) and its equality reached (0.516), meaning that business, financing, and training incubators were able to account for 51.6% of the variance in fostering growth and creativity in women's projects in Jordan. The value of (R^2) and its equality reached (0.516), meaning that business, financing, and training incubators were able to account for 51.6% of the variance in fostering growth and creativity in women's projects in Jordan. The coefficients table results for this hypothesis clearly show that the dimension (financing and training) has the largest effect on the dependent variable (promoting growth and creativity in women's projects in Jordan), with its "beta coefficient" reaching a value of $\beta = 0.433$. The value of (T) further supports this effect. At a significance level of $\text{Sig} = 0.00$, the calculated value (12.302) exceeds the tabular value (1.96). In terms of impact, it ranked second only to business incubators, with a "beta" coefficient of $\beta = 0.322$. This effect is supported by the calculated (T) value of 8.776, which is higher than its tabulated value and at a significant level ($\text{Sig} = 0.00$). As a result, we reject the null hypothesis (HO) and accept the alternative hypothesis (Ha), since it has been demonstrated that funding and training for women's projects in Jordanian business incubators have a statistically significant impact at the level ($0.05 \geq \alpha$) on the growth and creativity of these projects.

5. RESULTS AND DISCUSSION

The results confirmed the importance of business incubators in enhancing the role of women in Jordan through the programs and plans that they prepare and contribute to, especially with regard to women in small projects in villages and small cities, in order to achieve sustainable development in the environment in which they live, in order to benefit from the resources and resources available in the country, especially in the fields of agriculture, tourism, health, technology, and food industries. The study also concluded the importance of preparation, qualification, training, and financing for women, whether entrepreneurs or workers, in order to achieve growth and creativity, along with the importance of activating all the laws and legislation that have been amended in Jordan to empower women economically in Jordan, and following up and evaluating these laws and legislation from time to time to remove the obstacles that prevent entrepreneurship for women and enhance their role in society, especially women who are breadwinners for their families and who seek to improve the standard of living and who need family and community support. Therefore, equal treatment between the sexes must be followed and ensured, especially in wages, in most industries, especially education, where there is a wide gap in wages between males and females, according to a report ([Department of General Statistics Statistical Yearbook, 2021](#)).

To achieve growth and creativity, we must invest in human resources with the necessary qualifications, focusing on vocational education rather than just academics, developing skills, providing capabilities, and overcoming obstacles such as legal, legislative, and procedural barriers to achievement. Therefore, business incubators help. It provides a solid ground for achieving growth and creativity through sustainable projects, by providing training, financing, logistical support, and investment in the environment in which Jordanian women live, which is considered the basis for growth and

creativity. However, there is creativity in discovering, cultivating, and developing it if we allow project owners or workers to move away from routine orders and procedures to explore... We felt liberated and unburdened! The role of business incubators must be strengthened and made mandatory in all projects related to entrepreneurship projects, especially for women, because it will be an impregnable fortress in empowering women economically, developing their performance, and enhancing their role in society to make appropriate decisions in all fields and levels and in various activities to break the discrimination between females and males in most sectors. Especially since there are many successes of Jordanian businesswomen who have proven their worth in entrepreneurship, but this percentage is negligible for the business sector, as shown in the study and according to approved government statistics.

6. CONCLUSION

1) The need to achieve societal justice between males and females in the use of human capital and sustainable development is paramount.

2) It is crucial to remove all obstacles related to activating the laws and legislation recently approved by the Jordanian government.

3) The necessity of working on community awareness and education about the role of Jordanian women in building the family and society, and that they are the main driver in this through conferences, seminars, and meetings with specialists and experts, whether project owners or working women. According to the statistics of the [Jordanian Statistics Department \(2021\)](#) Jordanian women owning and managing their projects does not exceed 7%, while for men it reaches 93%, and the regional concentration of these projects comes in the central region 68%, the north 23% and the south 9%.

4) 80% of inventions, innovations, and creativity in the Western world come from companies and 20% from individuals, but in Arab society the percentages are the opposite. Therefore, by strengthening the role of incubators in supporting small and medium enterprises, it will work to achieve growth and creativity and serve sustainable projects in all fields and activities.

5) In the light of the availability of information transparency, achieving social justice between the sexes in Jordan and Arab society has become necessary. Perhaps the high percentage of female appointments, according to the [Jordanian Service Bureau Report \(2021\)](#) is good evidence, but most of it is in the field of education. Despite this, there is high unemployment due to the large number of female graduates, but there are areas where the percentage of appointments is negligible.

6) Despite the Jordanian economic conditions, the Jordanian government is trying with all its capabilities to overcome obstacles and supports the empowerment of women politically, economically, financially, socially, and technologically, and this is through indicators issued by official authorities. Rather, it is also trying to improve its international indicators, as Jordan is ranked 78th on the Global Innovation and Creativity Index for the year 2022. Regardless of the economic conditions, it is crucial to leverage the available resources and sources, particularly qualified and trained females, for the benefit of society.

Funding: This study received no specific financial support.

Institutional Review Board Statement: The Ethical Committee of the University of Petra, Jordan has granted approval for this study (Ref. No. 86).

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERENCES

- Al-Dulaimi, & Ali, A. R. (2020). *Scientific research, its foundations and methods* (2nd ed.). Amman, Jordan: Dar Al-Radwan for Publishing and Distribution.
- Al-Isas, H. (2022). *Jordan news agency*. Retrieved from <https://petra.gov.jo/Include/Main.jsp?lang=en>

- Al-Zeinetal. (2017). *Business incubators: A mechanism for achieving sustainability for small and medium enterprises as an entrepreneurial project*. Retrieved from <http://search.mandumah.com/Record/1093427>
- Al Wleيدات, O., & Al-Kharouf, A. (2019). The role of small projects in employment of rural women in Madaba governorate. *Dirasat Journal of Human and Social Sciences*, 46(1), 15-47. <https://doi.org/10.21608/ajas.2019.66218>
- Amawi, A. (2022). *Women's empowerment strategy report in the economic modernization vision, a detailed study*. Retrieved from https://www.pm.gov.jo/EBV4.0/Root_Storage/AR/EB_Story_Board/Woman_gov_reform.pdf
- Amer. (2018). *Structural equation modeling for psychological and social sciences, foundations, applications and issues, part two Riyadh*. Saudi Arabia: Naif University Publishing House.
- Areej. (2022). The impact of social support for women on supporting entrepreneurship for Saudi women. *An Empirical Study on the City of Abha*, 6(2), 61-85. <https://doi.org/10.26389/ajsrp.r250621>
- Bahaaeldeen, A. k., & Abed Elfatah, M. A. E. (2022). The role of Palestinian women in social and political change. *Journal of Scientific Development for Studies and Research*, 3(12), 129-148. <https://doi.org/10.61212/jsd/95>
- Cooper, D., & Schindler, P. (2014). *Business research methods* (12th ed.). New York: McGraw-Hill.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative and mixed methods approaches*. Los Angeles: Sage.
- Department of General Statistics Statistical Yearbook. (2021). *Department of general statistics, statistical yearbook*. Retrieved from https://dosweb.dos.gov.jo/ar/products/statistical-year_book2021
- Department of Statistics Gender Indicators. (2021). *Department of statistics, gender indicators*. Retrieved from <https://dosweb.dos.gov.jo/ar/population/gender-indicators>
- Gujarati, D., Porter, D., & Gunasekar, S. (2017). *Basic econometrics* (5th ed.). USA New York: The Mc Graw- Hill Gunasekar.
- Hair, J., F., Black, W. C., Babin, B. J., Anderson, R., E., & Tatham, R., L. (2018). *Multivariate data analysis* (8th ed.). England: Cengage Learning EMEA.
- Hanan, N. (2019). *Determinants of women in Arab countries*, 46(1). Retrieved from <http://search.mandumah.com/Record/932275>
- Hashem, D. I., & Bargal, E. S. A. (2020). The role of women in improving the added value of dairy products in El-Behira governorate. *Alexandria Science Exchange Journal*, 41(July-September), 241-254.
- Jordanian Service Bureau Report. (2021). *Jordanian service bureau report*. Retrieved from <https://staging.jordan.gov.jo/wps/portal/Home/GovernmentEntities/Agencies/Agency/Civil>
- Jordanian Statistics Department. (2021). *Jordanian statistics department*. Retrieved from <https://dosweb.dos.gov.jo/ar/labourforce/employment-and-unemployment>
- Mohammed. (2023). Localizing sustainable development goals in strategic development planning procedures. *Case Study: Local Development Planning Manual for the Palestinian Cities and Towns*, 37(8), 1491-1526.
- Nasr, N. (2022). *Entrepreneurial education in Egyptian universities: An introduction to developing community leadership to achieve a sustainable competitive advantage*. Retrieved from <http://search.mandumah.com/Record/1277807>
- Nasrallah, O. (2016). *Basics of scientific research methods and their application*. Amman, Jordan: Dar Wael for Publishing and Distribution.
- Rahman, A., & Ahmed. (2018). Business incubators as a mechanism for achieving sustainability of community development programs and projects. *Egyptian Association of Social Workers - Social Service Journal*, 60(5), 179-237.
- Sekaran, U., & Bougie, R. (2020). *Research methods for business: A skill building approach* (8th ed.). New York: John Wiley & Sons.
- Subedi, B. P. (2016). Using likert type data in social science research: Confusion, issues and challenges. *International Journal of Contemporary Applied Sciences*, 3(2), 36-49.
- Tabachnick, B., & Fidell, L. (2018). *Using multivariate statistics* (7th ed.). Northridge: California State University.

Views and opinions expressed in this article are the views and opinions of the author(s), International Journal of Management and Sustainability shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.