

# The Reality of Achieving Sustainability in Technical Colleges Operating in the Gaza Strip

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**Abstract:** The objectives of the study were to identify the reality of sustainability in technical colleges. The variables of sustainability included three main dimensions (innovation, processes, and community environmental aspects). The analytical descriptive method was used in the study. A questionnaire consisting of (39) items was randomly distributed to the technical colleges in the Gaza Strip. The population of the study consists of (289) employees of the colleges mentioned, the response rate was (79.2%).

The results showed that the technical colleges achieved a high level of sustainability in their operations with a total weight of 73.33% where the field (environmental aspects of society) came first and with relative weight (73.97%), in the second place came the field (creativity and innovation) and relative weight (73.10%), finally, the field of operations came in third and last place with relative weight (72.92%). The results confirmed that there were differences between technical colleges in achieving sustainability, with the highest sustainability colleges being UCAS and least sustainable (CCA). The results showed that there were no differences between colleges in achieving sustainability according to the variable number of years of service.

The researchers propose a number of recommendations, the most important of which is to increase attention to the dimensions of sustainability because of their role in the development and sustainability of technical education through enhancing and improving operations in technical colleges. Urging senior management and decision-makers to work in technical colleges to create, innovate, reward, and support their creators. There is a need to work on continuity and improve the environmental aspects of society and the creation of new and innovative ways to support and develop the environment of the community.

**Keywords:** Creativity and Innovation, Processes, Environmental Aspects of the Community, Technical Colleges, Achieving Sustainability, Gaza, Palestine.

## 1. INTRODUCTION

Higher education is of great importance because of its role in pumping outputs that are responsible for the advancement of society and the burden of the development process. The outputs of higher education institutions will determine the future of the economy and development. Hence, these institutions should review their programs and plans continuously. In order to make these plans and programs appropriate to the requirements of the labor market, and these institutions must assume their primary role in preparing individuals and build their skills to keep pace with changes and development. Therefore, we must support the process of sustainable education, which in turn contributes to the promotion of education development and the dissemination and deepening of knowledge, and contributes to the development of modern programs and plans for education. Promote and encourage development in the educational process.

The main objective of introducing sustainability into education is to ensure the sustainability of sustainable development in the country at its roots with a gradual process. Follow-up to the strategy is a key issue in this process. Sustainability in education plays an important role in raising awareness of the need for sustainable development and mobilizing the youth generation to achieve this goal.

Over the past decades, we have seen growing international interest in including the concept of sustainability in education to build a future generation capable of dealing with sustainable development. One of the key strategic objectives of sustainability is to focus on the lives of future generations and quality of life. Thus creating a society capable of understanding and working to protect our natural resources. The requirements of sustainability require educating the younger generation in a way that enables them to play a leading role in sustaining the sustainability strategy. Education for Sustainable Development (ESD) needs a clear local strategy and is part of the global network that helps achieve this goal as many countries around the world have integrated sustainability into their educational systems. There are a large number of experiences that can be used to improve the learning potential to create a ready-made youth generation to build high sustainability knowledge and support a culture of local sustainability. Many international and national organizations are actively pursuing and supporting this strategy.

Sustainability can be achieved only by establishing a strong trust relationship with customers and the community. Sustainability is one of the most modern disciplines that attempt to bridge and bridge the gap between social sciences,

civil engineering and environmental science and integrate them with technology in the future.

There are many concepts that we can call sustainability, which can make defining corporate values a challenge in business. Sustainability is not just about preserving the environment or about stable financial performance, but it also means sticking to multiple principles. A positive indicator is the opportunity for successful implementation as the interest in realizing the concept of sustainability already exists among employers, and job seekers want to join socially responsible companies in their business. The present study is intended to identify the reality of sustainability in technical colleges.

## 2. THE GENERAL FRAMEWORK OF THE STUDY

### 2.1 PROBLEM STATEMENT

The problem of the study is the increasing number of universities and colleges in the Gaza Strip, which requires that there be a conscious leadership capable of harnessing all the possibilities to try to continue and keep up with the universities and colleges of the world and to achieve excellence and sustainability in all fields. Based on the above, the problem of the study is determined by the following question:

**Q1-** What is the reality of achieving sustainability in the technical colleges operating in Gaza Strip?

### 2.2 RESEARCH OBJECTIVES

The study aims to achieve the following objectives:

1. Highlighting the concept of sustainability, identifying its components, and clarifying the nature of its work.
2. Put forward the most important and sustainable issues to solve the problems facing technical education.
3. Examine the level of sustainability in technical colleges in the Gaza Strip.
4. To promote technical education and enhance its function in the service of society.
5. Identify the differences in sustainability among the technical colleges in the Gaza Strip
6. Outcomes and recommendations contribute to the development and resolution of problems facing technical education.
7. The conclusion of the conclusions and recommendations of the administrative leaders in the higher education institutions in general and the technical colleges in particular may contribute to improving their performance and motivating them towards achieving sustainability, which contributes to the development of technical education.

### 2.3 RESEARCH IMPORTANCE

The importance of this study stems from the following points:

1. To draw attention to the need to achieve sustainability, and to emphasize the dissemination of culture and follow-up applications in technical colleges.
2. To see the reality of technical colleges, their sustainability and monitoring the strengths and weaknesses of their applications in these institutions.
3. To enrich the Arab academic arena with new research studies and partnerships in the fields of administrative development.

### 2.4 RESEARCH HYPOTHESIS

In order to provide an appropriate answer to the questions posed, the study seeks to test the validity of the following hypotheses:

**H01:** There is a high level of sustainability in technical colleges in the Gaza Strip.

**H02:** There are statistically significant differences at the level of a  $\leq 0.05$  in the dimensions of sustainability depending on the macro variable.

**H03:** There are statistically significant differences at the level of a  $\leq 0.05$  in the dimensions of sustainability depending on the variable number of years of service.

### 2.5 RESEARCH LIMITS AND SCOPE

1. **Subject Limit (Academic):** The study was limited in its objective to study the reality of achieving sustainability in the technical colleges operating in the Gaza Strip
2. **Human Limit:** The study was conducted on the responses of workers in the technical colleges under study.
3. **Institutional Limit:** This study was conducted on the major technical colleges in the Gaza governorates in the State of Palestine.
4. **The spatial limit:** The spatial limit was limited to technical colleges in the Gaza Strip (Palestine Technical College - Deir Al Balah, University College of Science and Technology, Gaza Training Community College (GTC), Al-Azhar University College of Applied Sciences, Al-Aqsa Society College).
5. **Time Limits:** The study was conducted and preliminary data were collected on technical colleges and statistical analyzes conducted during the year (2018). So it represents the reality at this time.

### 2.6 RESEARCH TERMINOLOGY

- **Technician:** A person who occupies a middle position between the engineer and the technologist on the one hand and the skilled worker on the other. He has the task of applying the technical practices. He has the scientific knowledge, professional skills and technical expertise that helps him to diagnose the problems and develop the details. He is responsible for transforming the engineer designs into an integrated production process (Al-Shahry, 1995). The task of the technical team is the middle jobs in the production sites and intermediate administrative works and they form the mainstay of the

production and service process because they are professionally considered as the operational working link between the various categories of specialists of engineers, trade and others and among the categories of technical workers who work in all the institutions on which the economy is based (Al-Saeed, 2006).

- **Technical colleges:** are regular educational institutions with duration of between 2-3 years after high school and without first-degree students (Mustafa, 2001). Technical colleges have recently been interested in analytical abilities and innovative skills as well as more Modern technologies, adaptation, operation and maintenance, and the training of technicians to absorb the rapid and complex transformations in order to meet the needs of the production and service sectors. Hence, many countries have started to award university degrees and masters and doctorate degrees such faculty's High technology in the United Arab Emirates, which grants bachelor's degree in Engineering Technology (Al-Issa, 2004).
- **Technical Education:** This is the type of formal higher education that includes educational preparation and imparting the skills and technical knowledge that are carried out by regular educational institutions not less than two years after secondary school to prepare a workforce in different disciplines (Al-Abd, 2001).  
**The researchers defines technical education as:** education that earns individuals the knowledge, skills and trends that qualify them to join the labor market in a technical work and study two years after high school.
- **Sustainability:** Sustainability is defined as the sustainability of project results after completion (JICA, 2004). The Sustainability Standard reflects whether the benefits for the target groups after the completion of external funding (2004, PCM)
- **Operational definition of sustainability:** Sustainability is the ability of technical colleges to work as far as possible by adopting creativity and innovation within their processes and focusing on the environmental aspects of society.

### 3. LITERATURE REVIEW

- Study of (El Talla et al., 2017) aimed to identify the reality of technical education in Palestine. The analytical descriptive method was used in the study. A questionnaire which consisted of 41 paragraphs was distributed randomly to the technical colleges in Gaza Strip. Random sample of (275) employees of these colleges were used, and the response rate was (74.5%). The results showed a high degree of approval for the dimensions of technical education with a relative weight of 76.07%. The ranking and relative weight was as follows: Technical education institutions: 79.51%, graduates of technical education 75.75%, Labor market and local community 72.96%. The researchers propose a number of recommendations, the most important of which is: the need to pay attention to technical education in line with the National Strategic Plan for Higher Education by moving towards technical education. The importance of offering special courses in all technical education programs in these colleges. The researchers urged more future studies that address the same variables as the current study and apply them to other sectors.
- Study of (El Talla et al., 2017) aimed to identify the creative environment and its relation to the graceful management of the technical colleges operating in Gaza Strip. The analytical descriptive method was used through a questionnaire which was randomly distributed to 289 employees of the technical colleges in Gaza Strip with a total number of (1168) employees and a response rate equal to (79.2%) of the sample study. The results showed a high degree of approval for the dimensions of the creative environment with a relative weight of (75.19%). It also showed a high level of creative environment where the ranking and relative weight was as follows: Fluency (76.86%), Sensation of problems (74.89%), Flexibility (74.59%) and originality (74.41%). The results showed that the technical colleges achieved a high level of agile management with a relative weight of 76.69% and a high level of agile management. (79.56%), responding to customer requirements (79.14%), reducing costs (75.68%), maximizing competitiveness and profitability (74.59%), Improve service (74.52%), and the results showed a statistically significant difference relationship between the dimensions of the creative environment and management in agile technical colleges in Gaza Strip. The researchers suggested a number of recommendations, the most important of which is the need to enhance the dimensions of the creative environment by working to improve the abilities of the faculties in fluency, flexibility, originality, sensitivity to problems and the importance of increasing attention to the dimensions of achieving the graceful management because of their role in the development of technical education departments and sustainability. Develop agile management mechanisms and applications in terms of reducing waste, reducing costs, improving service, responding to customer requirements, and maximizing competitiveness and profitability, commensurate with the capabilities of these colleges.
- Study of (Abu Naser et al., 2017) aimed to identify the technical education and its role in promoting entrepreneurship in Gaza Strip. The analytical descriptive method was used in the study. A questionnaire was composed of (41) items and distributed randomly by the technical colleges in Gaza Strip using stratified random sample of (275) employees from the mentioned colleges, and the response rate was (74.5%). The results showed a high degree of approval for the dimensions of technical education with a relative

weight of 76.07%. The ranking and relative weights were as follows: Technical education institutions: 79.51%, graduates of technical education 75.75% Labor market and local community 72.96%. The results of the study showed that the technical colleges achieved a high level of promotion of entrepreneurship with a relative weight of 73.45%. Where the ranking and relative weights were as follows: competitive assault (76.65%), creative orientation (74.96%), preparedness (74.07%) and risk (68.39%). The results also confirmed a statistically significant relationship between the dimensions of technical education and the promotion of entrepreneurship in technical colleges in Gaza Strip. The results also confirmed a statistically significant impact of technical education on the promotion of entrepreneurship in the technical colleges in Gaza Strip. The researchers proposed a number of recommendations, the most important: the need to go to technical education because of its role in the promotion of entrepreneurship, the importance of linking technical education and promoting entrepreneurship to the Palestinian society in general and the Gaza Strip in particular, the need to pay attention to technical education in line with the National Strategic Plan for Higher Education by moving towards technical education, and the importance of urging decision-makers in technical colleges to promote interest in leadership and to put their own courses in all technical education programs in these colleges. The researchers urged further studies of the same variables as the current study of entrepreneurship and their application to other sectors.

➤ Study of (Abu Naser et al., 2017) aimed to identify the social networks and their role in achieving the effectiveness of electronic marketing for technical colleges in the Gaza Strip, which included variables of social networks and their role in electronic marketing, as well as the recognition of the existence of differences of statistical significance in the attitudes of respondents towards the variables of the study, and using a descriptive analytical approach in the study. A questionnaire of 50 items was randomly distributed among the technical colleges in Gaza Strip. The sample of the study was composed of (275) employees of these colleges. The response rate was 74.5%. The results showed a high degree of approval for the dimensions of social networks and a relative weight (74.15%). There is a high level of social networking areas (site management (74.91%), content of the site: (73.38%)). The technical colleges achieved a high level of use of electronic marketing, where the total relative weight (70.24%). There is a high level of e-marketing (Electronic advertising (71.75%), electronic promotion (74.75%), news groups (66.03%), and communication with the audience (student) (68.73%)). There is a statistically significant relationship between the organization's smart

dimensions and sustainability in the technical colleges in Gaza Strip. The results also confirmed that there is a statistically significant impact of social networks in e-marketing in the technical colleges in Gaza Strip. The researchers proposed a number of recommendations, the most important of which are: Adopting dealing with the various social media sites as a reality on the Palestinian and Arab technical colleges, using them in accordance with the objectives of the technical colleges. The need to direct marketing through social networks and the exploitation of this network in marketing through them, the follow-up of the pages of the colleges and open the door of dialogue, communication, and respond to all inquiries. Technical colleges should put electronic marketing in their strategic marketing plan.

➤ Study of (El Talla et al., 2017) aimed to identify technical colleges as smart organizations and their relation to sustainability. The variables of smart organizations included: "Strategic vision, culture of merit and excellence, incentive system" and its relation to sustainability, which included three main dimensions (innovation, processes, and environmental aspects of the community). The questionnaire was composed of (39) items, which were randomly distributed to the technical colleges in the Gaza Strip. The sample of the study consisted of 289 employees from the mentioned colleges. The response rate was (79.2%). The results showed a high degree of approval for the dimensions of the smart organization and relative weight (71.42%) according to the perspective of the employees of the technical colleges in the Gaza Strip. Where the field (culture of merit and skill) ranked first and with relative weight (73.76%), followed by strategic vision and relative weight (72.62%), and finally came the area (incentive program) in the third and last place and a relative weight (67.91%). The results of the study showed that the technical colleges achieved a level high in sustainability in its operations with total relative weight (73.33%). Where the field (environmental aspects of society) came first and with relative weight (73.97%), followed by innovation and relative weight (73.10%), and finally came the field (operations) ranked third and last and relative weight (72.92%). The results confirmed a statistically significant relationship between the organization's smart dimensions and sustainability in the technical colleges in the Gaza Strip. The researchers propose a number of recommendations, the most important of which are: to enhance the dimensions of the smart organization in the technical colleges by improving the incentive program, developing the strategic vision and then supporting the culture of merit and skill. And increasing attention to the dimensions of achieving sustainability because of their role in the development and sustainability of technical education through the promotion and improvement of operations in technical colleges. He urged senior management and

decision-makers to work in technical colleges to create, innovate and reward and support their creators.

- A study of (Al-Kasasbeh et al., 2016) which aimed to study the impact of intelligent organization characteristics: a clear strategic vision, a culture of merit, and a supportive incentive system, on social and environmental performance. The results confirm that the level of importance of respondents' perceptions of the elements of the characteristics of smart organization in Jordan Phosphate Mines Company is medium. The importance of respondents' perceptions of the elements of social performance was moderate, with the exception of paragraphs relating to the introduction of assistance to poor families in the community, respect for society, customs and traditions, contribution to training university students and provision of health care for the company, employees and their families. And that the level of importance of respondents' perceptions about the elements of environmental performance is moderate. And that there is no statistical impact of the clear strategic vision and culture of merit on the social performance and environmental performance of the Jordanian phosphate mining company. And that there is a statistical impact of the system of incentives supporting the social and environmental performance of Jordan Phosphate Mines Company.
- A study of (Al-Taei et al., 2016) which aims to identify the relationship and impact between the management of wisdom through its dimensions (knowledge, meditation, conscience) and the sustainability of organizations through their dimensions (competitive advantage, legitimacy, social responsibility). The research problem identified a major question as to whether there is a role to manage the wisdom of the sustainability of organizations. The research community was one of the leaders at Kufa University. The random sample was chosen in 38 university leaders. The results of the study confirm the results that wisdom represents the summit of investment knowledge and it represents diligence within the space of knowledge is not limited, and specifically in the spaces of the knowledge gap in which there is no clear text. And the importance of reflection and insight into the issue of the hierarchical relation of data, information, knowledge, and wisdom. And to develop them on an objective basis, which maximizes the use of the advantages of the two sides in the process of thinking and in administrative applications.
- A study of (Pharaoh et al., 2015) which aims to answer a number of intellectual and practical questions, most notably the nature of the relationship between the strategy of entrepreneurship and construction in the mobile telecommunications companies in Iraq? Are managers aware of their importance based on their priorities? And what is its influential role in developing the model of its smart organizations. Where he aimed to

answer these questions by clarifying the conceptual implications of these variables.

#### 4. THE THEORETICAL FRAMEWORK OF THE STUDY

##### Achieving sustainability

The term sustainability has become widespread and can be applied almost to every aspect of life on earth, from the local to the global level and over different time periods. Wetlands and safe forests are examples of sustainable ecosystems. Hidden biochemical cycles redistribute water, oxygen, nitrogen and carbon in the living and non-living systems of the world, and have secured a lasting life for millions of years. But with the increasing number of people, the population of this land, natural ecosystems have declined and the change in the balance of natural cycles has had a negative impact on both humans and other living systems (Earth Policy Institute Natural Systems, 2009). The sustainability criterion is defined as the sustainability of project outcomes after completion. The second is dynamic sustainability. It is concerned with using or adapting the project results according to a different context or changing environment from the target groups or other groups, so that its permanence reflects the project's ability to survive and survive. (JICA, 2004). The sustainability criterion reflects whether the benefits to the target groups will continue after the end External financing (2004, PCM).

The European Project Management Manual 2004 (PCM) shows that sustainability analysis focuses on the following aspects:

- The extent to which partners have the objectives and achievements of the project and whether they have been coordinated with them throughout the implementation of the project.
- The adequacy of the project budget to achieve project outputs and objectives.
- The extent to which project activities are aligned with socio-cultural factors.
- The extent to which cross-cutting issues such as gender justice and good governance are taken into account.
- Extent of the ability to manage available technology without the need for external assistance
- The extent of institutional sustainability that reflects the level of commitment of partners and the integration of the project within its structure.
- The extent of financial sustainability that reflects the ability of target groups to afford the cost of post-financing services.

For JICA (2004), the sustainability analysis reflects the following issues:

- The same grant policy (assistance) continues after the end of cooperation with partners. Preparation of legal instructions and regulations for the grant.
- For projects targeting pilot sites (a pilot sample from a particular site to test a goal), real efforts are made to generalize the experiment throughout the region.

- The partner institution has the efficiency and organizational capacity to carry out the activities and thus achieve the desired impact after the end of cooperation between the assistance and the partner party.
- The sense of ownership of the project has already been realized by the implementing institution from the moment before the start of the project.
- The budget for the project is guaranteed and insured (including operating expenses).
- The extent to which successful budget considerations have been taken by the target country (implemented for the project) may increase the budget required in the future during project implementation.
- Ways of using technology in the project are acceptable.
- The management and maintenance plan of the equipment used in the project is appropriate.
- The project contains a mechanism for dissemination and dissemination of the project.
- For projects targeting experimental sites, technology is used as a component that can be deployed on other sites.
- The persistent impact may be hindered by a lack of consideration for both women and the poor and socially sensitive classes.
- The potential impact (utilization) of persistent environmental considerations may be hindered.
- Any factors that may prevent sustainability of the project.

The sustainability criterion measures the sustainability of the project after it is completed and focuses on two types of sustainability: institutional sustainability, which reflects the level of the organization's commitment to the continuation and integration of projects within its structure; and second, financial sustainability that reflects the ability of target groups to afford post-funding services.

**5. FIELD STUDY**

**STUDY PROCEDURES**

**First- Study Approach:**

This study is based on the analytical descriptive approach to describe and describe the phenomenon to be studied as it exists. In fact, researchers in this approach are considering the study of tools, phenomena and practices existing and available for study and measurement as they are, without the intervention of the researchers in their course, and researchers can interact with them and describe them and analyze them scientifically and objectively.

The study relies on two basic types of data:

1. **Initial Data:** The study was carried out in the field by distributing questionnaires to study the vocabulary of the study, collecting and gathering the necessary information in the subject of the study, and then unloading and analyzing it using the statistical program (SPSS) and using the appropriate statistical tests in order to arrive at indications of value and indicators that support the subject of the study. And some personal interviews conducted by the researchers with those involved in order to obtain some undocumented data in writing and to clarify some views.
2. **Secondary data:** through the review of books, periodicals, special publications, scientific and professional journals related to the subject of the study, and any references contribute to enrich the study in a scientific way, and the researchers through the use of secondary sources in the study to identify the foundations and scientific methods sound in writing studies, A general overview of the latest developments that took place in the field of study.

**Second- Study Population:**

The study population consists of all the staff working in technical colleges in the Gaza Strip (Palestine Technical College - Deir Al Balah, University College of Science and Technology, Gaza Training Community College, Al-Azhar College of Studies, University College of Applied Sciences, Al-Aqsa Society College). The study population may be (1168) of the employees of the technical colleges under study as follows:

**Table 1:** Illustrates the study population

The College	Number Of Employees	The Ratio%
Palestine Technical College	193	%16.52
University College of Science and Technology	204	%17.47
Gaza Training Community College	119	%10.19
College of Intermediate Studies- Al-Azhar	184	%15.75
University College of Applied Sciences	335	%28.68
Al-Aqsa Society College	133	%11.39
<b>Total</b>	1168	%100

**Source:** Prepared by researchers by reference to the statistical book and the annual statistical guide for Palestinian higher education institutions, Ministry of Education and Higher Education (2016)

**Third- The study sample:**

1. A survey sample was used by the researchers to verify the validity and reliability of these tools. The sample size was 32 employees.
2. The sample is random and consists of (289) employees of these colleges. The response rate was 79.2%.

**Table 2:** Distribution of respondents from the sample of the study

Personal Data	Category	The Number	The Ratio%
Number of Years of Service	Less Than 5 Years	18	%7.86
	5-10 Years	80	%34.9
	10 Years And Over	131	%57.2
	<b>Total</b>	229	%100
The college	Palestine Technical College	30	%13
	University College of Science and Technology	22	%10
	Gaza Training Community College	31	%13.5
	College of Intermediate Studies- Al-Azhar	48	%21
	University College of Applied Sciences	46	%20
	Al-Aqsa Society College	52	%22.5
	<b>Total</b>	229	%100

**Table 2 shows that:**

As for the variable number of years of service, the category was less than 5 years (7.86%). The category was 5-10 years (34.9%), and 10% or more, at (57.2%), this was the highest category, indicating the recent technical colleges in Gaza Strip. As well as the efforts of these colleges to attract as many qualified as possible to achieve the objectives of technical colleges.

As for the college variable, Al-Aqsa Society was ranked first by (22.5%) as it is a government college. The general orientation of the Ministry of Education is the orientation towards technical education. Therefore, we find that there is a keenness from the Ministry to provide government colleges with the needs of staff, and the Faculty of Intermediate Studies - Al-Azhar ranked second (21%), the University College of Applied Sciences came third (20%), followed by the Gaza Community Training Society, followed by the fourth (13.5%), then the Technical College of Palestine, which received a percentage (13%), thus, the University College of Science and Technology ranked second (10%).

**Fourthly- Study tool:**

Since the nature of hypotheses and the variables included in them are the ones that control the selection of the appropriate

**Table 3:** The degrees of the five-dimensional Likert scale

Response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Class	1	2	3	4	5

**Validate the measure:** The researchers calculated the validity of the meter in the following ways:

1. **Virtual honesty:** The researchers verified the authenticity of the tool ostensibly by presenting it to a group of PhD holders in Business Administration (8). The apparent honesty indicates the general appearance of the test in terms of its relevance to the subjects, the relevance of the phrase to the field, and the clarity of the wording and instructions.

Accordingly, the researchers have prepared a scale for the study that fits its objectives and hypotheses, which is the measure of the smart organizations in the technical colleges in the Gaza Strip. The process of designing and preparing the study scale has gone through several stages and steps:

1. See the literature of sustainability, and previous studies to work on the subject of the current study.
2. Collect and define scale paragraphs.
3. Formulation of diagnostic statements in proportion to the study sample.
4. Set the meter instructions.
5. How to correct the meter.
6. Conduct a study of stability and honesty of the scale.

**How to correct the meter:**

The five-dimensional Likert scale was used to measure respondents' responses to the questionnaire sections according to the following table:

The five-dimensional Likert scale was used to measure respondents' responses to the questionnaire sections according to the following table:

2. **Internal consistency:** The researchers calculated the validity of the internal consistency of the scale by finding the correlation coefficients between each field and the total score of the scale. The researchers conducted honesty and persistence on a sample of 32 employees by finding correlation coefficients for each paragraph in the field to which they belong. The following tables:

**Table 4:** Validity coefficients for each paragraph with the total score of its field in the sustainability scale

Creativity And Innovation			Processes			Environmental Aspects Of Society		
Paragraph Number	Honesty Coefficient	Level Of Significance	Paragraph Number	Honesty Coefficient	Level Of Significance	Paragraph Number	Honesty Coefficient	Level Of Significance
1	0.872	0.01	1	0.782	0.01	1	0.892	0.01
2	0.882	0.01	2	0.647	0.01	2	0.761	0.01
3	0.844	0.01	3	0.746	0.01	3	0.921	0.01
4	0.788	0.01	4	0.685	0.01	4	0.773	0.01
5	0.770	0.01	5	0.726	0.01	5	0.897	0.01
6	0.856	0.01	6	0.655	0.01	6	0.812	0.01

**Stability of the scale:**

The concept of stability means the ability of the test to give the same grades or values to the same individual or individuals if the measurement process is repeated. To ensure the stability of the scale, the researchers used the following methods:

1. **The method of split-half:** by calculating the correlation coefficient between the individual questions and marital questions, and obtained the stability coefficients shown in the following table.

**Table 5:** Sustainability Stability Factor

No.	Field	Number of Item	Correlation Coefficient Before Adjustment	Correlation Coefficient After Adjustment	Level Of Significance
1.	Creativity And Innovation	6	0.907	0.951	Sig. at 0.01
2.	Processes	6	0.639	0.779	Sig. at 0.01
3.	Environmental Aspects Of Society	6	0.803	0.891	Sig. at 0.01

From the previous table, it is clear that the stability coefficients in all midterm segments were high, indicating that the questionnaire has a high degree of stability.

2. **Alpha Cronbach's coefficient of persistence:** The researchers performed alpha-cronbach's persistence coefficient between the terms of each field separately, as shown in the following table:

**Table 6:** Shows the coefficients of alpha-Cronbach's stability for each dimension of the agile management scale

No.	Field	Coefficient Of Alpha-Cronbach Stability
1.	Creativity And Innovation	0.914
2.	Processes	0.794
3.	Environmental Aspects Of Society	0.918

The overall correlation coefficient (0.935), which is a high stability coefficient, indicates strength and validity of the scale. The researchers noted that the coefficients of the coefficients Pearson's correlations correlate with the results of alpha-cronbach's persistence coefficient.

**Fifthly- Statistical Methods:**

The computer was used in the statistical processing, especially the statistical packages program (SPSS), where all the data obtained by the researchers and then the results were extracted through the scientific equations necessary for this and the most important used in this study:

1. Averages, frequencies, standard deviations and percentages.
2. Spearman Brown's correlation coefficient for the equal half - division, and the Cronbach alpha factor to determine the stability of the resolution.
3. Pearson correlation coefficient to measure the relationship between variables.
4. Test T test for differences between averages.
5. One way Anova test

**Test the study hypotheses**

In order to answer the study questions and where the five-likert scale was used in the preparation of the study

instrument, the study adopted the following table to judge the trend when using the pentagram.

**Table 7: Scale of measurements used in this study**

Method / The Level	SMA	Relative weight%
<b>Very Low</b>	Less than (1.80)	Less than 36.00%
<b>Low</b>	From (1.80): (2.59)	From 36.00: 51.90%
<b>Medium</b>	From (2.60): (3.39)	From 52.00: 67.90%
<b>High</b>	From (3.40): (4.19)	From 68.00: 83.90%
<b>Very High</b>	Greater than (4.20)	Greater than 84.00%

**The first hypothesis test, which states:  
There is a high level of sustainability in technical colleges in the Gaza Strip.**

To test this hypothesis, the researchers resorted to frequencies, averages, standard deviation, percentages and order. The results were as shown in the following tables:

**Table 8: Frequency, Mean, Standard Deviation, Percentages, Order, and Value of "T" Responses of Sample Members in the Field of Creative and Innovation**

No.	Item	Arithmetic Mean	Standard Deviation	"T" Value	Relative Weight%	Item Order	Morality P- Value
1.	Creativity and innovation are used to develop new learning styles and services.	3.73	0.841	13.146	74.60%	1	0.000
2.	The College encourages creative creativity in the quality and diversity of services provided	3.67	0.940	10.707	73.40%	3	0.000
3.	The college is interested in completing the work according to the comprehensive quality system and standard specifications.	3.68	0.951	10.865	73.60%	2	0.000
4.	Priority of opportunities for improvement and additional and creative changes is identified.	3.64	0.943	10.231	72.80%	5	0.000
5.	Creative and innovative talents are being stimulated for employees and students to help with new improvements.	3.56	0.909	9.224	71.20%	6	0.000
6.	The College offers a quality educational process.	3.66	0.985	10.042	73.20%	4	0.000
<b>Total Domain</b>		3.6548	0.81736	12.097	73.10%		0.000

The tabular value of "T" is at a degree of freedom (228) and at the level of significance (0.05) = 1.65

The tabular value of "T" is at the degree of freedom (228) and at the level of significance (0.01) = 2.34

Table (8) shows that the value of the calculated "T" is greater than the value of "T" in all the paragraphs for creativity and innovation, thus, there is a statistical significance of the relative weight of these paragraphs, the first paragraph (creativity and innovation in the development of new styles of education and services) was ranked first with a relative weight of (74.60%), while the fifth paragraph (creative and innovative talents for employees and students to help new improvements) was ranked last in relative weight (71.20%), the overall degree of creativity and innovation has gained relative weight and value (73.10%) which is a high degree, that is, there is a high level of creativity and innovation in the technical colleges under study. The researchers explain

this result because, due to technological development and the emergence of new areas of work, colleges must develop new academic programs to suit this development and the needs of the renewable labor market. For example, mobile phone specialties and automatic control have emerged as new specialties in some technical colleges in the Gaza Strip. The colleges also strive to maintain their reputation and excellence by improving their services, and where most colleges have formed special units of quality in them, and colleges have begun using creative methods to serve their services through the means of modern technology.

**Table 9:** Frequency, Mean, Standard Deviation, Percentages, Order and Value of "T" of Respondents' Responses in Operations

No.	Item	Arithmetic Mean	Standard Deviation	"T" Value	Relative Weight%	Item Order	Morality P- Value
1.	The processes necessary to implement the College's policy and strategy and achieve its objectives are identified and designed.	3.67	0.871	11.629	73.40%	3	0.000
2.	The powers and responsibilities are clearly defined in the completion of operations.	3.74	0.868	12.795	74.80%	1	0.000
3.	Improve processes in innovative ways to generate value for students and beneficiaries.	3.61	0.914	9.971	72.20%	5	0.000
4.	Processes, teaching methods, and new management methods are discovered and implemented	3.66	0.844	11.800	73.20%	4	0.000
5.	Designing and developing academic programs and internal services according to students' needs.	3.70	0.867	12.090	74.00%	2	0.000
6.	Students and the labor market are involved in the design of processes and programs.	3.50	1.038	7.304	70.00%	6	0.000
<b>Total Domain</b>		3.6462	0.76047	12.831	72.92%		0.000

The tabular value of "T" is at a degree of freedom (228) and at the level of significance (0.05) = 1.65

The tabular value of "T" is at the degree of freedom (228) and at the level of significance (0.01) = 2.34

Table (9) shows that the value of the calculated "T" is greater than the T value in all the paragraphs of the field of operations. Thus, there is a statistical significance of the relative weight of these paragraphs. The second paragraph (Clearly defined powers and responsibilities in the completion of operations) on the first place with a relative weight reached (74.80%), while the sixth paragraph (students and the labor market in the design of processes and programs) was ranked last with relative weight (70.00%), the overall score for the field of operations has a relative weight

of (72.92%) which is high, ie, there is a high level of operations in the technical colleges under study. The researchers explain this result that the colleges operate from their strategic vision to meet the challenges and competition in their work to perform their operations in a manner that suits these challenges in order to achieve the strategic vision, in order to obtain excellent technical education outputs, we must focus on the operations by clearly defining the responsibilities in their completion and designing academic programs suited to the needs of the labor market.

**Table 10:** Frequency, Mean, Standard Deviation, Percentages, Order, and Value of "T" of Responses of Sample Members in the Environmental Aspects of the Community

No.	Item	Arithmetic Mean	Standard Deviation	"T" Value	Relative Weight%	Item Order	Morality P- Value
1.	The College works to improve and maintain the community environment.	3.75	0.914	15.523	75.00%	4	0.000
2.	The College offers educational programs that are suitable for students' aspirations and the job market and are of good reputation.	3.79	0.886	11.213	75.80%	2	0.000
3.	The college deals transparently with the local community.	3.81	0.808	9.604	76.20%	1	0.000
4.	The College provides public facilities, research and service centers that serve the community well.	3.45	1.093	10.003	69.00%	6	0.000
5.	Mutual trust is built between the university on the one hand and students and stakeholders on the other.	3.65	0.936	9.604	73.00%	5	0.000

6.	The College has good relations with suppliers and partners.	3.78	0.882	10.003	75.60%	3	0.000
<b>Total Domain</b>		3.6984	0.77631	12.703	73.97%		0.000

The tabular value of "T" is at a degree of freedom (228) and at the level of significance (0.05) = 1.65

The tabular value of "T" is at the degree of freedom (228) and at the level of significance (0.01) = 2.34

Table (10) shows that the value of the calculated T is greater than the T value in all paragraphs for the environmental aspects of the community, thus, there is a statistical significance of the relative weight of these paragraphs, so the third paragraph (dealing with the transparency of the college with the community) ranked first with a relative weight of (72.20%), while the fourth paragraph (the availability of the college public facilities and research centers and services that serve the community well) in the last place with a relative weight (69.00%), the total score for the environmental aspects of the community has a relative weight and value (73.97%) which is high, ie, there is a high level in the environmental aspects of the community in the technical colleges under study. The researchers explain this result that as a result of the intense competition between

technical colleges in a limited area, the colleges have resorted to networking with civil society organizations and the labor market through partnerships, continuous education services and other research services. Some colleges have concluded agreements with the Federation of Industries, in addition to establishing the Palestinian Employment Fund, which examines the needs of the labor market from technical education, it provides support for the establishment of development projects in these colleges, in addition to the TVET training programs, which are supported by several local and donor agencies such as the Ministry of Higher Education, the Ministry of Labor, Islamic Relief, the German Development Fund and others.

**Table 11:** Frequency, Mean, Standard Deviation, Percentage, Order, and Value of "T" of the Responses of Sample Members in All Fields and the College Degree Scale (Sustainability)

No.	Item	Arithmetic Mean	Standard Deviation	"T" Value	Relative Weight%	Item Order	Morality P- Value
1.	Creativity And Innovation	3.6548	0.81736	12.097	73.10%	2	0.000
2.	Processes	3.6462	0.76047	12.831	72.92%	3	0.000
3.	Environmental Aspects Of Society	3.6984	0.77631	13.584	73.97%	1	0.000
<b>Overall Degree To Achieve Sustainability</b>		3.6665	0.73244	13.740	73.33%		0.000

The tabular value of "T" is at a degree of freedom (228) and at the level of significance (0.05) = 1.65

The tabular value of "T" is at the degree of freedom (228) and at the level of significance (0.01) = 2.34

Table (11) shows that in all fields the calculated "T" value is greater than the "T" value of the table, therefore, there is a statistical significance of the relative weight of these areas, so the first field (environmental aspects of society) ranked first with a relative weight of (73.97%), while the field of (creativity and innovation) ranked second with relative weight (73.10%), while the field (operations) came in last place with a relative weight of (72.92%), the overall score for achieving sustainability has a relative weight and value (73.33%) which is a high degree, that is, there is a high level of sustainability in the technical colleges under study, and this indicates the validity of the second hypothesis. The researchers explain this result that the colleges and in their quest for sustainability and growth and in particular in light of the establishment of several private colleges competing in

the recent period works on Trix on the service of the community and the labor market, in addition to innovation, innovation and improvement in their operations, thus achieving sustainability.

The results were consistent with Al-Taei et al. (2016), which showed a high level of sustainability in the surveyed universities.

**The second hypothesis test, which states:**

**H02: There are statistically significant differences at the level of a <= 0.05 in the dimensions of sustainability depending on the macro variable.**

To test this hypothesis, the analysis of mono-variance was used as in the following table:

**Table 12:** Analysis of the single variation of one way Anova to find differences in achieving sustainability according to the macro change

		Sum of Squares	df	Mean Square	F	Sig.
creativity and innovation	Between Groups	19.177	5	3.835	6.427	.000
	Within Groups	132.477	222	.597		
	<b>Total</b>	151.654	227			
Processes	Between Groups	15.310	5	3.062	5.862	.000
	Within Groups	115.967	222	.522		
	<b>Total</b>	131.278	227			
Environmental aspects of society	Between Groups	24.671	5	4.934	9.769	.000
	Within Groups	112.132	222	.505		
	<b>Total</b>	136.803	227			
Overall degree to achieve sustainability	Between Groups	19.320	5	3.864	8.372	.000
	Within Groups	102.458	222	.462		
	<b>Total</b>	121.778	227			

The following table shows the existence of statistically significant differences according to the macro variable in the dimensions of the creative environment in all dimensions

and the overall grade except after the elasticity. This confirms the validity of the hypothesis in general.

**Table 13:** Results of the LSD test for the direction of differences and their significance in creativity and innovation due to the macro variable

College	CIS	UCAS	CCA	PTC	GTC
<b>CIS</b>	-				
<b>UCAS</b>	0.461933*	-			
<b>CCA</b>	-0.420731*	-0.882664*	-		
<b>PTC</b>	-0.004492	-0.466425*	0.416239*	-	
<b>GTC</b>	0.006978	-0.454956*	0.427709*	0.011470	-
<b>CST</b>	0.085912	-0.376021	0.506643*	0.090404	0.078935

\* Sig. at level of significance (0.05)

From the previous table, there are differences in creativity and innovation between the University College of Applied Sciences (UCAS), the CIS, the CCA, the GTC and the Palestinian Technical College (PTC) for UCAS. The results showed that there were differences between CIS and CCA in

favor of CIS and differences between PTC and CCA for PTC. GTC and CCA differences between GTC and GTC. (CST) and (CCA) for CST.

**Table 14:** Results of the LSD test for the direction of differences and their significance in the after operations due to the macro variable

College	CIS	UCAS	CCA	PTC	GTC
<b>CIS</b>	-				
<b>UCAS</b>	0.404456*	-			
<b>CCA</b>	-0.375477*	-0.779933*	-		
<b>PTC</b>	0.117258	-0.287198	0.492735*	-	
<b>GTC</b>	-0.039373	-0.443829*	0.336104*	-0.156631	-
<b>CST</b>	0.019278	-0.385178*	0.394755*	-0.097980	0.058651

\* Sig. at level of significance (0.05)

From the previous table, there are differences in the post-operation period between the UCAS and the CIS, the CCA, the GTC and the University College of Science and Technology (UCAS). The results showed that there were differences between CIS and CCA in favor of CIS and

differences between PTC and CCA for PTC. GTC and CCA differences between GTC and GTC. (CST) and (CCA) for CST.

**Table 15:** LSD test results for the direction of differences and their significance in the dimension of the environmental aspects of the society due to the macro variable

College	CIS	UCAS	CCA	PTC	GTC
CIS	-				
UCAS	0.633611*	-			
CCA	-0.362766*	-0.996377*	-		
PTC	0.109456	-0.524155*	0.472222*	-	
GTC	0.105514	-0.528097*	0.468280*	-0.003943	-
CST	0.122083	-0.511528*	0.484848*	0.012626	0.016569

\* Sig. at level of significance (0.05)

From the previous table, there are differences in the environmental aspects of the community between the University College of Applied Sciences (UCAS) and the other colleges in favor of UCAS. The results also showed differences between CIS and CCA in favor of CIS. The

results also showed differences between PTC and CCA for PTC, GTC and CCA differences for GTC, Between CST and CCA for CST.

**Table 16:** Results of the LSD test for the direction of differences and their significance in the total score to achieve sustainability due to the macro variable

College	CIS	UCAS	CCA	PTC	GTC
CIS	-				
UCAS	0.500000*	-			
CCA	-0.386325*	-0.886325*	-		
PTC	0.074074	-0.425926*	0.460399*	-	
GTC	0.024373	-0.475627*	0.410698*	-0.049701	-
CST	0.075758	-0.424242*	0.462082*	0.001684	0.051385

\* Sig. at level of significance (0.05)

From the previous table, there are differences in the overall score to achieve sustainability between UCAS and other colleges in favor of UCAS. The results also showed differences between CIS and CCA in favor of CIS. The results also showed differences between PTC and CCA for PTC, GTC and CCA differences for GTC, Between CST and CCA for CST.

The results show that the most sustainable colleges are UCAS, the least being the College of the Far East (CCA).

**H03:** There are statistically significant differences at the level of a  $\leq 0.05$  in the dimensions of sustainability depending on the variable number of years of service.

To test this hypothesis, the analysis of mono-variance was used as in the following table:

**Table 17:** Analysis of the single variance of One Way Anova to find differences in achieving sustainability according to the variable number of years of service.

		Sum of Squares	df	Mean Square	F	Sig.
Creativity And Innovation	Between Groups	.358	2	.179	.266	.766
	Within Groups	151.295	225	.672		
	<b>Total</b>	151.654	227			
Processes	Between Groups	.172	2	.086	.147	.863
	Within Groups	131.106	225	.583		
	<b>Total</b>	131.278	227			
Environmental Aspects Of Society	Between Groups	.058	2	.029	.048	.954
	Within Groups	136.745	225	.608		
	<b>Total</b>	136.803	227			
Overall Degree To Achieve Sustainability	Between Groups	.038	2	.019	.035	.966
	Within Groups	121.740	225	.541		
	<b>Total</b>	121.778	227			

The above table shows that there are no differences in achieving sustainability according to the experience of

technical workers in the Gaza Strip, which confirms the incorrectness of the hypothesis.

## 6. CONCLUSIONS

1. The results of the study showed that the technical colleges achieved a high level of sustainability in their operations with a relative weight of 73.33%.
2. The results of the study showed a high level of sustainability (innovation, innovation, processes, environmental aspects of society) in the technical colleges in the Gaza Strip, where the field (environmental aspects of society) came first and with relative weight (73.97%), in the second place came the field (creativity and innovation) and relative weight (73.10%), finally, the field of operations came in third and last place with relative weight (72.92%).
3. The results confirm that there are differences between technical colleges in achieving sustainability. The highest sustainability colleges (UCAS) and least sustainable (CCA)
4. The results showed that there are no differences between colleges in achieving sustainability according to the variable number of years of service.

## 7. RECOMMENDATIONS

In light of the findings of the researcher, he recommends the following:

1. To increase attention to the dimensions of achieving sustainability because of their role in the development and sustainability of technical education through enhancing and improving operations in technical colleges.
2. Urge the senior management and decision makers of the technical colleges to create, innovate and reward and support their creators.
3. The need to work on continuity and improve the environmental aspects of society and to find new and innovative ways to support and develop the environment of the community.

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