The Level of Using Artificial Intelligence Applications as a Modern Trend among Training Institutions in Palestine

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Abstract: *The study aimed to identify the reality of the use of artificial intelligence applications as a modern trend among training institutions in the southern Palestinian governorates. The study used the descriptive analytical method. The southern Palestinian governorates, and the random sample was used to collect data, as (90) applicable questionnaires were retrieved. The results of the study showed that the general estimate of artificial intelligence applications reached (83.63%), and that the order of areas of artificial intelligence applications is as follows (Training And Development, System Capacity, User Behavior, Smart Agent, News Availability), and the results also showed that there were no statistically significant differences. In the use of artificial intelligence applications according to the gender variable, there are statistically significant differences in the use of artificial intelligence applications according to the variables (educational qualification, age group, number of years of service, governorate). The study presented a set of recommendations, the most important of which are: the need to attract experts and specialists to work in training institutions in order to develop applicable artificial intelligence applications, as well as the need for centers to develop their training systems in line with modern technology.*

Keywords: Artificial Intelligence Applications, Training Institutions, Palestine.

Introduction

The rapid developments and persecution that the world is witnessing in the various organizational fields have resulted in organizations making tremendous efforts to adapt to these developments, as they considered survival and success to be among the most important strategic goals they seek to achieve (Al Shobaki and Abu-Naser, 2017). Hence, organizations began to reconsider the various fields that surround them, as the competitive pressures surrounding them increased the importance of adopting work mechanisms to upgrade the organization through proper planning and selection of strategic alternatives in an optimal manner and in a way that achieves its goals, and artificial intelligence is considered one of the most important strategies that achieve The compatibility between the technological revolution and the continuity of organizational work, and the achievement of competitive advantage. According to (Al-Atl, 2012), artificial intelligence has become one of the topics that attract the most coverage in all academic fields, as the field is witnessing a wide spread due to the massive information revolution.

If the applications of artificial intelligence are important in many fields and fields, for business organizations they represent an urgent and indispensable necessity (El Talla et al., 2017), as many studies and previous research, both Western and Arab, emphasized the importance of these applications. In business organizations, which enables them to achieve several advantages, most notably: improving the decision-making process, solving all administrative problems, reducing costs, improving quality, and other advantages that directly contribute to enhancing the competitiveness of business organizations and ensuring their survival and growth, hence the interest in the need to adopt intelligence Artificial intelligence in contemporary organizations of various types and specialization, including training (Al Shobaki et al., 2021).

Problem Statement

There is no doubt that the availability of correct data would assist the leadership of organizations in making and making the right decisions, as proper decision-making is considered one of the most important basic ingredients for successful management, and for this reason many institutions rely on the adoption of artificial intelligence in daily administrative operations, Where expert systems contribute to problem solving (Abusharekh et al., 2019).

In view of the developments taking place in the business environment, which led to the emergence of a number of challenges that faced all institutions, including training institutions, which imposed on them administrative ideas and renewed strategies, including the application of artificial intelligence in organizations in order to improve their performance in order to be able to face these challenges (El Talla et al ., 2020).

Based on the foregoing, it can be said that training institutions face many challenges that prevent them from performing their expected and appropriate roles for the knowledge era in which we live, so they need to adopt new concepts such as artificial intelligence, which has proven to have a prominent role in the development of institutional work. Identify the level of application of artificial intelligence in training institutions.

Research Questions

In light of tracking the problem of the study, the study questions that will be answered by the study have been deduced, namely:

Q1-: What is the level of using artificial intelligence applications in training institutions in the southern Palestinian governorates?

Q2-: Are there significant differences in the respondents' responses to the use of artificial intelligence applications in

training institutions in Palestine, according to personal and organizational data?

Research Objectives
Based on the established research questions, this study aims to achieve the following objectives:
1. Knowing the level of using artificial intelligence applications in training institutions in the southern Palestinian governorates.
2. Showing differences in respondents' responses to the use of artificial intelligence applications in training institutions in the southern governorates, according to personal and organizational data.
3. Provide recommendations to the managements of training institutions towards developing the uses of artificial intelligence applications.

Research Importance
The aspects of the importance of the study can be identified from the contribution and the expected addition from it, as follows:
1. The research derives its importance from the role that technology plays in general, and modern administrative trends in developing work in training institutions.
2. There is a scarcity of research on artificial intelligence, according to the knowledge of researchers, and based on the above, it is expected that the research will contribute to enriching the Arab library on the concept of artificial intelligence.

Limitations and Directions for Research
The scope of the study shall be as follows:
1. **Objective Limits**: The study focused on examining the use of artificial intelligence applications in training institutions in the southern Palestinian governorates.
2. **Human Limits**: The study was conducted on workers in the training institutions under study in Palestine, who responded electronically by filling out the questionnaire.
3. **Institutional Limits**: The study was conducted on training institutions in which the respondents responded to the study tool.
4. **Spatial Limits**: The study was conducted in the State of Palestine, specifically in the southern governorates.
5. **Time Limits**: The study was conducted in the year (2023).

Literature Reviews
➢ Study of (Atieh et al., 2023), which aimed to identify the impact of the use of artificial intelligence techniques in improving the outputs of higher education in business administration faculties in the universities under study, which formed the research community. As for the sample, the research sample consisted of (130) academics in the universities under study, and the research concluded that there is a significant impact of using artificial intelligence techniques (expert systems, neural networks) in improving higher education outcomes in business schools under study, and that artificial intelligence techniques contribute In discovering graduates who are able to carry out the process of modernization and professional development in various fields of work, and technologies contribute to improving and developing the skills of graduates in the labor market and providing them with new skills to perform their duties.

➢ Study of (Abu Qaoud, 2022) entitled "The Impact of the Strategic Orientation on Achieving Competitive Advantage - A Field Study in the Official Jordanian Universities", which aimed to identify the impact of the strategic orientation in enhancing the competitive advantage in the official Jordanian universities, and the researcher used the descriptive analytical approach to achieve the objectives of the study. In order to collect data from the study sample of (500) employees in 10 official Jordanian universities, a special questionnaire was built and distributed, and after analyzing the results, the study showed that the level of application of the strategic direction came to a high degree in Jordanian universities, while the application of competitive advantage came to a medium degree, as it was concluded The study indicated that there is a statistically related effect between strategic direction and competitive advantage.

➢ Study of (Al-Masry and Al-Agha, 2021) entitled "The Impact of Artificial Intelligence in the field of communication technology on organizational immunity in light of the characteristics of digital media as a mediating variable in Palestinian universities", which aimed to present a strategic developmental application proposal to enhance organizational immunity in light of intelligence applications. In order to achieve the purpose of the study, the two researchers used the analytical descriptive approach, and in order to collect data from the study sample of 75 university students, a special questionnaire was designed. It was highly rated, and the level of application of organizational immunity dimensions was also highly rated, as it was found that there is a relationship between the dimensions of artificial intelligence and organizational immunity.

➢ Study of (Al-Atl, 2012) entitled "The Impact of Artificial Intelligence on Education from the Perspective of Students of the College of Basic Education in the State of Kuwait," which aimed to identify the impact of the application of artificial intelligence in the colleges of basic education in the State of Kuwait, and to achieve the objectives of the study, the researcher used the descriptive analytical approach, In order to collect data, the researcher designed a special questionnaire to collect data from a sample of 229 male and female students from the College of Education, and the study showed that artificial intelligence technology is of great importance in developing the educational process regardless of place and time.

➢ A study (Al-Mansoori and Al-Tahitah, 2021) entitled "The Role of Artificial Intelligence in the Decision-Making Process in the Ministry of Interior in the United

Arab Emirates," which aimed to identify the role of artificial intelligence in changing the mechanism of government services work in the United Arab Emirates, and to achieve Objectives of the study: The analytical descriptive approach was used, and a questionnaire was designed to collect information from the study sample, represented by the leadership of the joints of the Ministry of Interior. A major role in addressing some of the problems facing the state.

➢ Study of (Jaballah, 2021) entitled "The Role of Artificial Intelligence in Improving Competitiveness in the Economic Enterprise - A Field Study on the Condor Foundation in Algeria. Which aimed to identify the role of artificial intelligence in its various systems (expert systems, neural networks, genetic algorithms, fuzzy logic , the smart agent) in improving the competitiveness in the economic institution, and the researcher used the descriptive analytical approach to achieve the objectives of the study, and to collect data, a special questionnaire was designed and distributed to the study sample of 50 employees in the institution under study, and after analyzing the data, the results showed that there is a relationship A positive effect between artificial intelligence and competitiveness. The study also showed that the institution under study applies artificial intelligence to improve competitiveness by adopting modern systems.

➢ A study (Mahmoud, 2020) entitled "Artificial Intelligence Applications: An Introduction to Developing Education in Light of the Corona Pandemic", which aimed to identify artificial intelligence applications that can be used in developing the educational process during the Corona pandemic. The researcher used the analytical descriptive approach, and to collect data, a design was made A special questionnaire was distributed to the study sample, which consisted of 31 officials responsible for the educational process. The study concluded that the application of artificial intelligence helps in facing the challenges and problems related to the management of the educational process.

Comment on Previous Studies
By reviewing previous studies, we note that studies that emphasized the importance of artificial intelligence applications. Below is a review of the similarities and differences between the current study and previous studies to clarify the research gap that the research seeks to cover.

The benefits of the current study from previous studies
The current study benefited from previous studies in the following:
1. Learn about the latest studies on the topic of artificial intelligence applications.
2. Enriching the study with the theoretical aspect due to the large amount of information contained in each study.
3. Determine the variables of the study and formulate its hypotheses.
4. Choosing the appropriate method for the study, which is the descriptive analytical method.

5. Determine the study tool, which is the questionnaire, as an appropriate tool for the subject of the study.
6. Building conclusions and final recommendations, and comparing results.

What distinguishes the current study from previous studies:
What distinguishes this study from previous studies is that it:
1. It dealt with a recent topic related to the applications of artificial intelligence.
2. What distinguishes this study from previous studies is that the study was applied to training institutions in the southern Palestinian governorates.

Conceptual Frameworks
Humanity has gone through a lot of industrial and informational developments until it arrived in our current era, in which we have become dependent on big data and artificial intelligence techniques and tools in many fields.

And artificial intelligence is considered one of the modern and advanced sciences that aims to design and innovate smart computer systems that simulate the method and method of human intelligence, so that these systems can perform tasks and actions instead of humans, and also work to simulate its functions and capabilities using qualitative properties (Al-Masry and Al -Agha, 2021), and it is one of the fastest growing fields, and it has positive and important effects in many different fields, the most prominent of which is facilitating work within organizations, saving time and effort, and increasing the efficiency of organizational processes that enhance the added value of organizations.

Al-Dahshan (2020) defines it as "the science of engineering smart machines, especially computer programs, as it creates computer programs that simulate human behavior and are able to think in the way the human brain works."

Researchers define it as the application of intelligence systems through computer programs to face the problems facing organizations in their work, and contribute to achieving excellence in organizations.

The science of artificial intelligence is concerned with the cognitive processes that humans use to perform the actions required of them, and these actions differ according to their nature, and their need in application for the element of intelligence.

According to (Saleh, 1987), artificial intelligence has several applications, the most prominent of which are expert systems, speech recognition and its manufacture, learning and teaching.

Artificial Intelligence Objectives
The objectives of artificial intelligence, according to (Al-Atl, 2012), are summarized in the following points:
1. Access to the processing patterns of the higher mental processes that take place within the human mind.
2. Facilitating the use and maximizing the importance of the computer through its ability to solve problems.
3. Understanding the nature of human intelligence to create computer programs capable of simulating human behavior related to intelligence.

4. Designing intelligent systems that give the same characteristics that we know as intelligence in human behavior.
5. Access to an artificial mind that can think with it, help it, and provide important signals to it.

The Importance of Artificial Intelligence

Recently, artificial intelligence technologies have made remarkable progress in the field of sensing, classification, inference, decision-making, and pattern recognition within huge volumes of data, through various methods. The expert person, whose importance is represented in the following points:

- Contribute to preserving the accumulated human experiences by transferring them to smart machines.
- Because of artificial intelligence, a person can use the human language in dealing with machines instead of computer programming languages, which makes machines and their use accessible to all segments of society.
- Artificial intelligence plays an important role in many different fields such as legal, medical, educational, security, military, and other areas of life.
- Artificial intelligence is useful in scientific research and facilitates access to more discoveries, and thus is a factor in accelerating growth and development in all scientific fields.

Characteristics of Artificial Intelligence

Artificial intelligence has many characteristics and features, including:

- Using intelligence to solve problems in the absence of information.
- Thinking and realizing.
- Knowledge acquisition and application.
- Learning and understanding from previous experiences and experiences, and using previous experiences in dealing with new situations that arise.
- Rapid response to emergency situations.
- Dealing with difficult and complex cases, and dealing with ambiguous situations in the absence of information.
- Providing information to support decisions.

The smart agent is one of the most prominent artificial intelligence systems used by organizations, where the smart agent is defined as an object that can perceive its environment in which it is located, through the sensors that this object possesses, and then respond to it by means of implementation mechanisms or raptors, and it is considered one of the special applications It mines data and works through a software package that performs limited tasks or duties of a repetitive or predictive nature for the beneficiary, and the smart agent consists of (Khawalda, 2017):

- **Perception**: For data received by the agent via sensors.
- **Reaction**: Events issued by the agent.
- **Rational Agent or Logical Agent**: It is the agent that acts correctly.

Methodology and Procedures

The study methodology and procedures are considered a main axis through which the applied side of the study is accomplished. Accordingly, the researchers touched on the procedures that were followed in preparing the study by clarifying the study method and its community, and then identifying the sample on which the study was applied, as well as preparing the main study tool (questionnaire) and the mechanism of its construction and development and the extent of its validity and stability, and ends with the statistical treatments that were used in analyzing the data and drawing conclusions.

First- Study Methodology: The researchers used the analytical descriptive approach in order to achieve the objectives of the study, through which it attempts to describe the phenomenon under study, the opinions raised about it and the processes involved.

Second- Study Population: The target study population consists of all accredited training institutions in the southern Palestinian governorates.

Third- The Study Sample: The simple random sample method was used to collect the study data, where an electronic questionnaire was distributed to the study population, and (90) applicable questionnaires were retrieved.

Fourth- Study Tool: the questionnaire is the most widely used and widespread tool among researchers, and in order to conduct the applied study, the study tool (questionnaire) was prepared to measure "artificial intelligence applications in training institutions in Palestine.

Table 1: Scores of the scale used in the questionnaire

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

The Standard Used In the Study

To determine the criterion adopted in the study, the length of the cells was determined in the five-point Likert scale by calculating the range between the degrees of the scale (5-1 = 4) and then dividing it by the largest value in the scale to obtain the length of the cell as shown in the following table:

Table 2: The criterion adopted in the study

Mean	Relative Weight	Degree of Agreement
From 1.8 - 1	From 35.9% - 20%	Very Weak
From 2.59- 1.8	From 51.9% - 36%	Weak

From 3.39–2.6	From 67.9 -% 52 %	Medium
From 4.19–3.4	From 83.9% - 68%	Great
Greater Than 4.2	Greater Than 84%	Very Large

In order to interpret the results of the study and judge the level of response, the researchers relied on arranging the arithmetic averages at the level of the domains of the questionnaire, and the level of the paragraphs in each domain, and the researchers determined the degree of approval according to the test approved for the study.

Validity of The Study Tool: The validity of the questionnaire reflects the measurement of the paragraphs of the questionnaire, what it was intended to measure. The validity of the questionnaire was verified through the following:

The Validity of The Internal Consistency: It means "the extent to which each paragraph of the questionnaire is consistent with the axis to which this paragraph belongs. It

was calculated on the sample of the exploratory study of (30) questionnaires, by calculating the correlation coefficients between each paragraph and the total score of the axis to which it belongs.

Results of internal consistency for the hub of AI applications

The following tables show the correlation coefficient between each paragraph of the fields of "Artificial Intelligence Applications" and the total score for each field, which shows that the correlation coefficients shown are a function at a significant level ($\alpha \leq 0.05$), and thus the field is considered valid for what was set to measure it.

Table 3: The results of the validity of the internal consistency of the system's ability field

#	Item	Pearson Correlation Coefficient	Probability Value (Sig.)
1.	The Foundation is constantly developing its technological systems and software that support artificial intelligence.	.743	*0.000
2.	The Foundation provides smart electronic services that are appropriate to the needs of the beneficiaries.	.866	*0.000
3.	The institution has modern and advanced electronic devices and equipment that support artificial intelligence.	.770	*0.000
4.	The organization has smart systems to serve it.	.826	*0.000
5.	The system used achieves the goals of the organization.	.853	*0.000
6.	The user can easily access the stored data by using intelligent information management systems.	.794	*0.000
7.	The used system handles data efficiently and intelligently.	.823	*0.000

* The correlation is statistically significant at the level of significance ($\alpha \leq 0.05$).

Table 4: The results of the validity of the internal consistency of the field of user behavior

#	Item	Pearson Correlation Coefficient	Probability Value (Sig.)
1.	Beneficiaries submit their requests to obtain the service electronically.	.549	*0.000
2.	Beneficiaries can conduct their transactions electronically with ease and flexibility.	.823	*0.000
3.	Employees complete transactions through smart systems.	.862	*0.000
4.	The smart system provides employees with information that helps in making decisions.	.814	*0.000
5.	The Foundation is interested in introducing services supported by artificial intelligence to gain the satisfaction of beneficiaries.	.838	*0.000
6.	Employees receive instant alerts from the smart system of the need to make a specific decision.	.849	*0.000

* The correlation is statistically significant at the level of significance ($\alpha \leq 0.05$).

Table 5: The results of the validity of internal consistency in the field of training and development

#	Item	Pearson Correlation Coefficient	Probability Value (Sig.)
1.	The organization constantly trains employees to keep abreast of the technological developments of artificial intelligence.	.916	*0.000
2.	The organization is constantly working on developing the skills of its employees in artificial intelligence applications.	.838	*0.000

3.	The organization provides devices and applications that support artificial intelligence to employees in order to continuously develop its business.	.920	*0.000
4.	The Corporation is interested in updating its systems in line with modern technology to raise the efficiency of the institutional system.	.764	*0.000
5.	There is an approved system for training employees and raising their efficiency.	.899	*0.000

* The correlation is statistically significant at the level of significance (α ≤0.05).

Table 6: Results of internal consistency validity for the field of expert availability

#	Item	Pearson Correlation Coefficient	Probability Value (Sig.)
1.	The organization has many specialists to develop the organization's artificial intelligence applications.	.596	*0.001
2.	The Foundation works to contract with experts specialized in artificial intelligence from abroad, if necessary.	.880	*0.000
3.	Experts and specialists are selected according to their competence and ability to improve the organization's artificial intelligence systems.	.740	*0.000
4.	The institution works to transfer knowledge from experts to employees continuously.	.850	*0.000

* The correlation is statistically significant at the level of significance (α ≤0.05).

Table 7: The results of the validity of the internal consistency of the field of smart agent

#	Item	Pearson Correlation Coefficient	Probability Value (Sig.)
1.	Intelligent agent systems are used to store various experiences in their dealings to ensure that they can be used in the future	.893	*0.000
2.	The smart agent helps the management of the organization to make decisions based on the stored knowledge base.	.898	*0.000
3.	The smart agent helps the management of the organization to make decisions on its behalf as an agent in pre-prepared cases.	.882	*0.000
4.	The organization's employees use the smart agent system to respond to customers' messages and hear their opinions.	.873	*0.000
5.	The smart agent reduces the time used by the organization in fulfilling the wishes of the beneficiaries.	.920	*0.000
6.	The smart agent can be used as an alternative to human agents, which contributes to the reduction of labor costs.	.872	*0.000

* The correlation is statistically significant at the level of significance (α ≤0.05).

Construction validity: It means "the extent of consistency of each domain of the total score of the axis to which the field is developed, and it was calculated on the sample of the survey study, which amounted to (30) questionnaires, by calculating the correlation coefficients between each domain and the total score of the axis to which it belongs".

Table 8: The results of the construction validity of the innovative marketing axis

#	Domain	Pearson Correlation Coefficient	Probability Value (Sig.)
1.	System Capacity	.930	*0.000
2.	User Behaviour	.822	*0.000
3.	Training And Development	.829	*0.000
4.	Availability Of Experts	.822	*0.000
5.	Smart Agent	.884	*0.000

* The correlation is statistically significant at the level of significance (α ≤0.05).

Reliability: The stability of the questionnaire means that the questionnaire gives the same results if it is reapplied several times in succession, and it also means to what degree the scale gives close readings each time it is used, or what is the degree of its consistency, consistency and continuity when it is used repeatedly at different times.

The researchers verified the stability of the study questionnaire through Cronbach's Alpha Coefficient, and the results were as shown in Table.(9)

Table 9: Cronbach's alpha coefficient to measure the stability of the resolution

Domain	Frequency	Cronbach's Alpha Coefficient
System Capacity	7	0.911
User Behaviour	6	0.895
Training And Development	5	0.918
Availability Of Experts	4	0.705
Smart Agent	6	0.946
Overall score for artificial intelligence applications	28	0.964

It is clear from the results shown in Table No. (11) That the value of Cronbach's alpha coefficient is high for each domain, ranging between (0.705, 0.946), while it reached (0.964) for all paragraphs of the artificial intelligence applications axis, and this means that the stability is high and statistically significant. Thus, the resolution in its final form is applicable. The researchers have confirmed the validity and stability of the questionnaire, which makes them fully confident in the validity and validity of the questionnaire to analyze the results, answer the study questions and test its hypotheses.

Statistical Description of the Study Sample:
The following table shows the statistical description of the study population according to personal data. The number of respondents who filled out the study questionnaire was (90) workers in training institutions in the southern governorates (gender, age group, educational qualification, number of years of service, governorate). The results are shown in the following table:

Table 10: Statistical description of the study sample according to personal and organizational data (n = 90)

Variable	Category	Frequency	%
Gender	Male	78	86.7
	Female	12	13.3
The Academic Qualification	Diploma	10	11.1
	Bachelor	46	51.1
	Master Degree	26	28.9
	Ph. D	8	8.9
Age Group	less than 30 years	24	26.7
	30- less than 40	48	53.3
	40- less than 50	16	17.8
	50 and more	2	2.2
Governorate	North Governorate	20	22.2
	Gaza Governorate	34	37.8
	Central Governorate	14	15.6
	Khan Yunis Governorate	8	8.9
	Rafah Governorate	14	15.6
Years of Experience	less than 5 years	22	24.4
	5-less than 10 years	46	51.1
	10- less than 15 years	14	15.6
	15 and more	8	8.9

Answering the study questions and testing hypotheses:
To answer the questions of the study, the arithmetic and relative mean, standard deviation, and the arithmetic mean were used.

Q1-: What is the level of using artificial intelligence applications in training institutions in the southern Palestinian governorates?
To answer this question, the arithmetic mean, relative weight, standard deviation, and arrangement were used. The results are shown in the following table:

Table 11: The arithmetic and relative mean and standard deviation for each paragraph of the artificial intelligence applications axis

#	Item	Mean	Standard Deviation	Relative Weight	Rank
1.	System Capacity	4.2540	0.58404	%85.08	2
2.	User Behaviour	4.2519	0.54237	%85.04	3
3.	Training And Development	4.5333	0.55607	%90.67	1
4.	Availability Of Experts	3.8500	0.58396	%77.00	5
5.	Smart Agent	4.0185	0.68897	%80.37	4
Overall score for artificial intelligence applications		4.1815	0.49249	%83.63	

From the previous table, it can be concluded that the field of "training and development" came in the first place with an arithmetic average of (90.67%), i.e. to a very high degree, followed by the field of "system capacity" in the second place with an arithmetic mean of (85.08%) and with a very high degree of approval as well.

While the field "availability of experts" came last, with an arithmetic average of (77.00%), i.e. a high degree of agreement.

The total score for the axis of artificial intelligence applications came with an arithmetic mean of (4.182), with a relative weight of (83.63%). This means that there is a high degree of agreement by the respondents on the paragraphs of this axis, and the following tables show the arrangement of the paragraphs for each field in the axis of artificial intelligence applications:

Table 12: The arithmetic and relative mean and standard deviation for each paragraph of the "System Capacity" field

#	Item	Mean	Standard Deviation	Relative Weight	Rank
1.	The Foundation is constantly developing its technological systems and software that support artificial intelligence.	3.96	0.669	79.20%	7
2.	The Foundation provides smart electronic services that are appropriate to the needs of the beneficiaries.	4.22	0.731	84.40%	4
3.	The institution has modern and advanced electronic devices and equipment that support artificial intelligence.	4.38	0.856	87.60%	2
4.	The organization has smart systems to serve it.	4.22	0.761	84.40%	4
5.	The system used achieves the goals of the organization.	4.49	0.753	89.80%	1
6.	The user can easily access the stored data by using intelligent information management systems.	4.20	0.690	84.00%	6
7.	The used system handles data efficiently and intelligently.	4.31	0.759	86.20%	3
All paragraphs of the field together		4.2540	0.58404	85.08%	

From the previous table, it can be concluded that Paragraph No. (5) "The system used achieves the objectives of the institution" came in the first place with a relative weight of (89.80%), i.e. a very high degree of approval.

Paragraph No. (1) "The institution continuously develops its technological systems and software that support artificial intelligence" came last, with an arithmetic average of (79.20%), i.e. a high degree of approval.

The total score for the field of "System Ability" came with a relative weight equal to (85.08%), and this means that there is a very high degree of agreement by the respondents on the paragraphs of this field.

Table 13: The arithmetic and relative mean and standard deviation for each paragraph of the "User Behavior" field

#	Item	Mean	Standard Deviation	Relative Weight	Rank
1.	Beneficiaries submit their requests to obtain the service electronically.	4.18	0.572	%83.60	5
2.	Beneficiaries can conduct their transactions electronically with ease and flexibility.	4.38	0.801	%87.60	1
3.	Employees complete transactions through smart systems.	4.20	0.753	%84.00	4
4.	The smart system provides employees with information that helps in making decisions.	4.36	0.676	%87.20	2
5.	The Foundation is interested in introducing services supported by artificial intelligence to gain the satisfaction of beneficiaries.	4.24	0.708	%84.80	3

6.	Employees receive instant alerts from the smart system of the need to make a specific decision.	4.16	0.702	%83.20	6
	All paragraphs of the field together	4.2519	0.54237	%85.04	

From the previous table, it can be concluded that Paragraph No. (2) "The beneficiaries can conduct their transactions electronically with ease and flexibility" came in the first place with a relative weight of (87.60%), i.e. a very large degree.

While Paragraph No. (6) "Employees receive immediate alerts from the smart system of the need to take a specific

decision" came last with a relative weight of (83.20%), i.e. a high degree of approval.

The total score for the "User Behavior" field came with an arithmetic mean of (85.04%), and this means that there is a very high degree of agreement by the respondents on the paragraphs of this field.

Table 14: The arithmetic and relative mean and standard deviation for each paragraph of the field of training and development

#	Item	Mean	Standard Deviation	Relative Weight	Rank
1.	The organization constantly trains employees to keep abreast of the technological developments of artificial intelligence.	4.56	0.655	%91.20	2
2.	The organization is constantly working on developing the skills of its employees in artificial intelligence applications.	4.56	0.689	%91.20	2
3.	The organization provides devices and applications that support artificial intelligence to employees in order to continuously develop its business.	4.49	0.723	%89.80	4
4.	The Corporation is interested in updating its systems in line with modern technology to raise the efficiency of the institutional system.	4.36	0.605	%87.20	5
5.	There is an approved system for training employees and raising their efficiency.	4.71	0.585	%94.20	1
	All paragraphs of the field together	4.5333	0.55607	%90.67	

From the previous table, it can be concluded that Paragraph No. (5) "There is an approved system for training employees and raising their efficiency" came in the first place with a relative weight of (94.20%), i.e. a very large degree.

While Paragraph No. (4) "The institution is interested in updating its systems in accordance with modern technology to raise the efficiency of the institutional system" came last

with a relative weight of (87.20%), i.e. a very high degree of approval.

The total score for the field of "training and development" came with an arithmetic average of (90.67%), and this means that there is a very high degree of agreement by the respondents on the paragraphs of this field.

Table 15: The arithmetic and relative mean and standard deviation for each paragraph of the field of expert availability

#	Item	Mean	Standard Deviation	Relative Weight	Rank
1.	The organization has many specialists to develop the organization's artificial intelligence applications.	2.82	1.167	56.40%	4
2.	The Foundation works to contract with experts specialized in artificial intelligence from abroad, if necessary.	4.20	0.753	84.00%	2
3.	Experts and specialists are selected according to their competence and ability to improve the organization's artificial intelligence systems.	4.33	0.703	86.60%	1
4.	The institution works to transfer knowledge from experts to employees continuously.	4.04	0.669	80.80%	3
	All paragraphs of the field together	3.8500	0.58396	77.00%	

From the previous table, it can be concluded that Paragraph No. (3) "Experts and specialists are selected according to their competence and ability to improve the organization's artificial intelligence systems" came first with a relative weight of (86.60%), i.e. very large.

Paragraph No. (1) "There are many specialists in the organization to develop artificial intelligence applications for

the organization" came last with a relative weight of (56.40%), i.e. a medium degree of approval.

The total score for the field of "Experts Availability" came with an arithmetic mean of (77.00%), and this means that there is a high degree of agreement by the respondents on the paragraphs of this field.

Table 16: The arithmetic and relative mean and standard deviation for each paragraph of the smart agent field

#	Item	Mean	Standard Deviation	Relative Weight	Rank

1.	Intelligent agent systems are used to store various experiences in their dealings to ensure that they can be used in the future	3.91	0.759	%78.20	5
2.	The smart agent helps the management of the organization to make decisions based on the stored knowledge base.	4.09	0.788	%81.80	2
3.	The smart agent helps the management of the organization to make decisions on its behalf as an agent in pre-prepared cases.	3.96	0.792	%79.20	4
4.	The organization's employees use the smart agent system to respond to customers' messages and hear their opinions.	4.00	0.821	%80.00	3
5.	The smart agent reduces the time used by the organization in fulfilling the wishes of the beneficiaries.	4.24	0.769	%84.80	1
6.	The smart agent can be used as an alternative to human agents, which contributes to the reduction of labor costs.	3.91	0.816	%78.20	5
All paragraphs of the field together		4.0185	0.68897	%80.37	

From the previous table, it can be concluded that Paragraph No. (5) "The smart agent reduces the time used by the institution in fulfilling the wishes of the beneficiaries" came in the first place with a relative weight of (84.80%), i.e. with a very high degree of approval.

While paragraph no. (1) "Smart agent systems are used to store various experiences in their dealings to ensure benefit from them in the future" and paragraph (6) "The smart agent can be used as an alternative to human agents, which contributes to reducing work costs" ranked last with a relative weight of (78.20%)) ie with a large degree of agreement.

The total score for the field of "smart agent" came with an arithmetic average of (80.37%), and this means that there is a high degree of agreement by the respondents on the paragraphs of this field.

Q2-: Are there significant differences in the respondents' responses to the use of artificial intelligence applications in training institutions in Palestine, according to personal and organizational data?

To answer this question, the independent sample T_Test was used to test the differences due to the variable (gender), and the One Way ANOVA test was used to test the differences due to the variables (Age, Educational Qualification, Governorate, Number Of Years Of Service). Which consists of more than two groups, and the following are the results of the differences according to the variables of personal data, and the following table shows this.

Table 17: The results of testing the differences in the average response of the respondents about the use of artificial intelligence applications attributed to personal and organizational data

Personal and Functional Variables		Use of artificial intelligence applications					
		Mean	Standard Deviation	Relative Weight	Statistical Test Value	Significance Level	Result
Gender	Male	4.1828	.507980	83.66%	T = 0.076	0.940	There are no differences
	Female	4.1731	.395020	83.46%			
The Academic Qualification	Diploma	4.4222	.268780	88.44%	F = 9.003	0.000	There are differences
	Bachelor	4.3204	.284020	86.41%			
	Master Degree	4.0363	.425980	80.73%			
	Ph. D	3.5545	1.04271	71.09%			
Age Group	less than 30 years	4.3045	.351510	86.09%	F = 4.110	0.009	There are differences
	30- less than 40	4.2442	.499310	84.88%			
	40- less than 50	3.8148	.536690	76.30%			
	50 and more	4.1367	.000000	82.73%			
Governorate	North Governorate	4.5096	.210400	90.19%	F = 5.248	0.001	There are differences
	Gaza Governorate	3.9519	.681530	79.04%			
	Central Governorate	4.1413	.095630	82.83%			
	Khan Yunis Governorate	4.3762	.256640	87.52%			
	Rafah Governorate	4.1996	.207990	83.99%			
	less than 5 years	4.2676	0.35063	85.35%	F = 49.941	0.000	

Personal and Functional Variables		**Use of artificial intelligence applications**					
		Mean	**Standard Deviation**	**Relative Weight**	**Statistical Test Value**	**Significance Level**	**Result**
Years of Experience	5-less than 10 years	4.3457	.215840	86.91%			There are differences
	10- less than 15 years	4.2153	.174830	84.31%			
	15 and more	2.9418	.632090	58.84%			

The previous table shows the results of testing the differences in the average response of respondents about the use of artificial intelligence applications attributed to personal and organizational data. If the level of statistical significance is less than 0.05, we conclude that there are statistically significant differences in the average response of the respondents about the use of artificial intelligence applications due to personal variables, and the results of the previous table shows the following:

- Regarding the gender variable: the value of the significance level was (0.940 greater than 0.05). We conclude that there are no statistically significant differences in the average response of the respondents about the use of artificial intelligence applications due to the gender variable.
- With regard to the educational qualification variable: the value of the significance level was (0.000 less than 0.05). We conclude that there are statistically significant differences in the average response of the respondents about the use of artificial intelligence applications due to the educational qualification variable, where the differences were in favor of the minimum educational qualification diploma.
- For the age group variable: the value of the significance level was (0.009 less than 0.05). We conclude that there are statistically significant differences in the average response of the respondents about the use of artificial intelligence applications due to the age group variable, where the differences were in favor of the younger age group "less than 30 years".
- Regarding the governorate variable: the value of the significance level was (0.001 less than 0.05). We conclude that there are statistically significant differences in the average response of the respondents about the use of artificial intelligence applications due to the governorate variable. Gaza.
- With regard to the variable of the number of years of service: the value of the significance level was (0.000 less than 0.05). We conclude that there are statistically significant differences in the average response of the respondents about the use of artificial intelligence applications due to the variable of the number of years of service, where the differences were in favor of the number of years of service from 5 - less than 10 years.

Conclusions

The following Results and recommendations were reached:

- The total score for the axis of using artificial intelligence applications came with an arithmetic average of (4.18), and a relative weight of (83.63%). This means that there is a high degree of agreement by the respondents on the paragraphs of this axis.
- The total score for the field of "System Capability" with a relative weight equal to (85.08%), which means that there is a very high degree of agreement on the paragraphs of this field.
- The total score for the "User Behavior" field, with an arithmetic mean of (85.04%), which means that there is a very high degree of agreement on the paragraphs of this field.
- The total score for the "Training and Development" field, with an arithmetic average of (90.67%), and this means that there is a very high degree of agreement on the paragraphs of this field.
- The total score for the field of "availability of experts" with an arithmetic average of (77.00%), which means that there is a high degree of agreement on the paragraphs of this field.
- The total score for the field of "Smart Agent" with an arithmetic average of (80.37%), which means that there is a high degree of agreement on the paragraphs of this field.
- There are no statistically significant differences in the use of artificial intelligence applications according to the gender variable.
- There are statistically significant differences in the use of artificial intelligence applications according to the variables (Educational Qualification, Age Group, Number of Years of Service, and Governorate).

Recommendations

In light of the findings, the research presents a set of recommendations as follows:

- Work on contracting with experts to make efforts to adopt artificial intelligence applications a success.
- The need for the institution to develop its technological systems and software that support artificial intelligence.
- Working on updating the systems of training institutions in line with modern technology to raise the efficiency of the institutional system.

– Attracting many specialists to develop the organization's artificial intelligence applications.

– Work on the use of smart agent technologies in dealing with groups benefiting from the institution's services.

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