

# The Availability of the Technological Environment and Data Privacy and Its Impact on the Application of Cloud Computing In Charitable Organizations in Palestine

Mahmoud T. Al Najjar<sup>1</sup>, Mazen J. Al Shobaki<sup>2</sup>, Suliman A. El Talla<sup>3</sup>

<sup>1,2</sup>Faculty of Administrative and Financial Sciences, Israa University – Gaza, Palestine.

<sup>3</sup>College of Intermediate Studies – Al-Azhar University – Gaza, Palestin

<sup>1</sup>malekzain750@gmail.com, <sup>2</sup>mazen.alshobaki@gmail.com, <sup>3</sup>Eltallasuliman@gmail.com

**Abstract:** The study aimed to identify the availability of the technological environment and data privacy and its impact on the application of cloud computing in charitable institutions in Palestine. Using the stratified random sampling method, where the study sample consisted of (294) employees, and in order to collect data, a questionnaire was developed where (300) questionnaires were distributed to the heads of boards of directors in addition to the executive directors as well as the heads of departments, and (241) questionnaires were retrieved, or a percentage of 82%. The study found that the relative weight of the readiness of the technological environment to support cloud computing reached (79.47%), and data privacy and security represented (71%). The study presented a number of recommendations, the most important of which is the need to work on developing remedial plans to eliminate the obstacles that hinder the use of cloud computing. On the other hand, the study recommended the need for institutions to respond more and more effectively to the aspirations of donors with regard to the application of cloud computing technology.

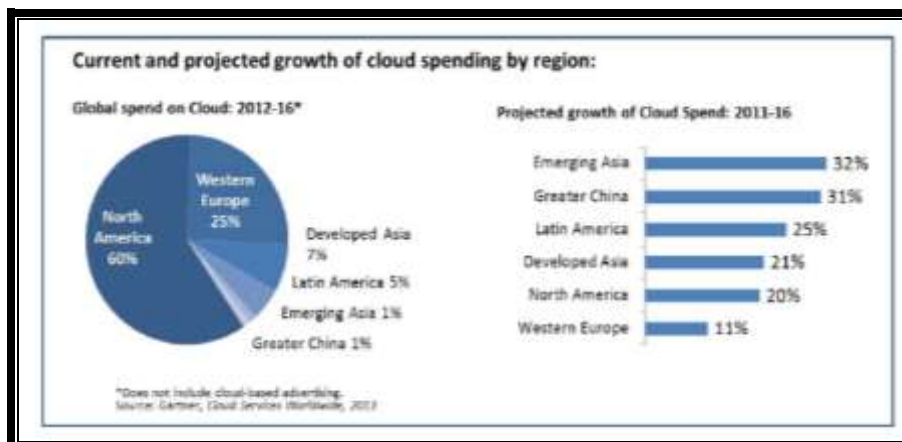
**Keywords:** Technological Environment, Data Privacy, Cloud Computing, Charitable Organizations, Gaza Strip, Palestine.

## Introduction

Recently, and in light of the tremendous technological development in the world, which positively affected the business world through the creation of new variables, which in turn imposed on all institutions operating in all sectors the need to keep pace with these changes and exploit them in a way that contributes to the development of institutional work, especially in light of the digital transformation and the growing role of the Internet, which contributed to the transition to the computerization of business and services, where ease of dealing and access to information and shortening of time and effort, in addition to raising the efficiency of work, which prompted institutions to change the routine work method in order to develop work methods in line with these developments and use various methods in order to Taking advantage of these advanced models, and in light of this, a new concept has emerged, namely cloud computing, which in turn harnesses information technology to develop administrative and institutional work in order to achieve the best level of achievement.

Cloud computing is a modern technology that relies on storing and processing data within a virtual cloud instead of computers. It is considered a data center that is accessed via the Internet regardless of place and time, and this technology contributes to eliminating maintenance and modernization problems as it turns from products to services (Syed, 2013). Cloud computing is a technology that allows users to transfer and process their files and data in a cloud (technological resources over the Internet), where processing operations take place within this cloud, with access to that data at any time and any place whenever the Internet is available” (Radwan, 2016).

AL-Badi et al, (2017) believes that cloud computing has evolved from being a mere graphic to a tangible business model, and the world’s interest in this technology has varied from one country to another, as some statistics show that the United States is the most interested country in this technology, and then the European Union. The following is the extent of spending and interest of countries in this technology.



**Figure 1:** Growth rate in the use of cloud computing

**Source:** Gartner (2013)

The charitable sector in Gaza Strip is considered a vital sector to a large extent by virtue of social responsibility, and given that Gaza Strip has been suffering from a continuous siege for more than 10 years, in addition to the wars and economic crises it suffers from, as the number of charitable institutions operating in Gaza Strip (415) An institution according to the statistics of the Ministry of Interior in Gaza for the year 2022, and according to a study of (Bahour, 2016), the utilization of advanced technologies in the institutions of Gaza Strip does not reach the desired level, and among these technologies is cloud computing.

From this point of view, it has become imperative for decision-makers and those interested in managing these organizations to continuously research to keep pace with the changes that contribute positively to the development process in various fields, to advance the wheel of scientific progress, and to study the challenges that may hinder the use of such advanced technologies, the most important of which is the availability of the technological environment In addition to the privacy of beneficiaries' data, which may hinder the application of cloud computing due to some considerations and restrictions imposed by the nature of Gaza Strip.

The researchers believe that cloud computing helps charitable organizations to provide electronic services at low costs, and helps in the growth and expansion of the institutions' work, obtaining good statistics and data analytics, and allowing access to data through various electronic devices.

### Research Terminology

There are many terms that were used in the study, the most important of which are:

- **Cloud Computing:** A technology that relies on storing and processing data within a virtual cloud instead of computers. It is considered a data center that is accessed via the Internet regardless of place and time, and this technology contributes to eliminating maintenance and modernization problems as it turns from products to services (Syed, 2013).
- **Procedural Definition Of Cloud Computing:** A technology that allows users to transfer and process their files and data in a cloud (technological resources over the Internet), where processing operations take place within this cloud, with access to that data at anytime and anywhere whenever the Internet is available.
- **Charitable Institutions:** They are an independent legal entity established by a group of individuals by agreement among themselves in order to reach legitimate goals of community service and their goal is not material profit (Al-Aloul, 2011).
- **Procedural Definition of Charitable Institutions:** The researchers define them procedurally as “a group with the nature of an optional recipe consisting of several people aiming to provide charitable services to the community, without regard to profit.”

### Problem Statement

Today, digital technology in general and the digital cloud in particular has become a new model for benefiting from the information revolution, in coordination and cooperation between companies, governments and institutions in the framework of data and information exchange and enhancing the role of technology and the Internet in the administrative, supervisory and regulatory process for it, and this corresponds to the study of (Saleem, 2011), which It turns out that cloud computing has become one of the concepts that has attracted the attention of those in the information field because of the opportunities it provides for institutions to advance the electronic services they provide.

Cloud computing is considered an advanced idea in line with the requirements of the times and helps to establish an infrastructure at reduced costs. It also provides a wide scope for companies and organizations as it provides many benefits to the data owner and users, and works to secure data and services, flexibility and cost efficiency for the user (Saleh, 2016), Despite this (Bahour, 2016) confirms that bureaucracy still controls the work of institutions in Gaza Strip, including charitable institutions, so this study comes to shed light on the importance of applying cloud computing and the availability of technological requirements for the adoption of such technologies for adoption in administrative work, taking into account the security and privacy data.

The impact of cloud computing on private institutions is noted in answering the following question, how can charities and forward-looking NGOs use the cloud computing system to access as much data as possible and harness it in administrative work.

From this standpoint, the idea of the study came to explore the availability of the technological environment that contributes to the readiness of charitable institutions in Gaza Strip to adopt cloud computing.

Based on the foregoing, the researchers found the problem of the study and its importance. Therefore, the study will focus on exploring the availability of the technological environment necessary for the application of cloud computing, in addition to examining what is required for organizations to adopt the application of cloud computing technology.

### Research Questions

**From the foregoing, the study questions that will be answered by the study were deduced as follows:**

**Q1-:** What is the availability of the technological environment in charitable organizations to adopt cloud computing?

**Q2-:** What is the impact of data privacy on the application of cloud computing in charitable organizations?

### Research Objectives

This study aims to achieve the following objectives:

1. Knowing the readiness of charities to implement cloud computing.
  2. Explore the readiness of the technological environment in charitable organizations to implement cloud computing
-

3. Recognize the impact of data privacy on the adoption of cloud computing.
4. Presenting findings and recommendations to various parties.

### Research Importance

The aspects of the study's importance can be identified from the expected contribution and addition, as follows:

#### First- Scientific (Theoretical) Importance:

The importance of this scientific study is evident in the fact that cloud computing is one of the most important modern technologies that is expected to revolutionize the performance of institutions in terms of quality and improve the service provided by these institutions to the beneficiaries, for its role in providing distinct programs and applications, very large storage spaces, and data monitoring and preservation in a secure and less costly manner. .

Enriching scientific research on this subject, as it is considered one of the modern topics according to the researchers' point of view that links the application of cloud computing and the achievement of social justice in Palestine in particular and the Arab world in general through the application of cloud computing in charitable institutions.

#### Second- Practical (Applied) Importance of Charitable Institutions:

1. It may work to support the decision-making of the institutions in determining the beneficiaries.
2. May support the process of monitoring the services and projects of institutions.
3. It helps in organizing and arranging work within the institutions.

#### Third- The practical importance for donors:

1. Strengthening the principle of financial and administrative control over finance
2. Support coordination and transparency between donors and institutions

#### Fourth- The practical importance for the beneficiaries:

1. Achieving social justice at the societal level in benefiting from services.
2. Achieving high levels of satisfaction among the beneficiaries of the services.
3. Serving the largest number of segments of society.

### Research Variables Definitions

- **The Independent Variable:** Cloud Computing.
- **Dependent Variable:** technology environment, data privacy and security.

### Research Limits and Scope

The scope of the study shall be as follows:

1. **Objective Limits:** The study focused on the requirements for the application of cloud computing, especially (technological environment, data security privacy).
2. **Human Limits:** The study was conducted on workers in charitable institutions.
3. **Institutional Limits:** The study was conducted on a sample of charitable institutions operating in Gaza Strip.
4. **Spatial Limits:** The study was conducted in the State of Palestine.
5. **Time Limits:** The study was conducted in the year 2022.

### Previous Studies

- Study of (Al Najjar, Mahmoud T., et al., 2022) which aimed to identify the reality of change strategies and the level of coordination for the readiness of charitable institutions in Gaza Strip to adopt and apply cloud computing. The stratified random sample, where the study sample consisted of (294) employees, and in order to collect data, (300) questionnaires were distributed to the heads of boards of directors in addition to the executive directors as well as heads of departments, and (241) questionnaires were retrieved, or 82%. The study concluded that the change strategies axis scored (68.13%), while the coordination and transparency axis reached (82.02%), and in the same context, it was concluded that donors are looking forward to implementing cloud institutions at a rate of (85.63%). The study made a number of recommendations, the most important of which is the need to work on developing remedial plans to get rid of the obstacles that hinder the use of cloud computing. The study recommended the importance of institutions adopting clear and diverse strategies for institutional and organizational change. With regard to the application of cloud computing technology.
- Study of (Al Najjar et al., 2022), which aimed to identify the level of senior management support and the readiness of the organizational structure in Palestinian charitable institutions to adopt and apply cloud computing. The study relied on the analytical descriptive approach in describing and analyzing the problem, and the study population consisted of (1245) employees working in charitable institutions. The results of this study showed that the general estimate of the Senior Management support axis was (68.13%), and the organizational structure axis reached (83.9%). The study presented a number of recommendations, the most important of which is the need to work to strengthen the principle of decentralization in the organizational structure of charitable institutions in Gaza Strip, as well as the need to develop remedial plans to eliminate the obstacles that hinder the use of cloud computing.
- Study of (Bahour, 2016) which aimed to identify the availability of factors affecting the adoption and application of cloud computing in government institutions from the point of view of senior management. Providing the technological environment,

confidentiality and data.” To achieve the objectives of the study, the questionnaire was used as a tool for data collection. The researcher conducted a comprehensive survey of the research community of 170 employees from the senior management in government ministries in Gaza Strip, and 120 questionnaires were retrieved at a rate of 70.5%, and 3 questionnaires were excluded from the analysis. The results for the inaccuracy of the results, and the researcher used the descriptive analytical method in the study. One of the most important results of the study was that the comparative advantage represents the most important factors affecting the adoption and application of cloud computing, and the study emphasized that change strategies have a role in the transition towards the application of cloud computing, and the results showed that the role of senior management in government ministries is not sufficient to implement cloud computing. The results showed that the physical requirements for building the government cloud are available to an acceptable degree in the Palestinian ministries, and security concerns and data confidentiality are among the most important factors affecting the application of cloud computing.

- Study of (Radwan, 2016), which aimed to identify cloud computing and its relationship to developing the job performance of managers working in Palestinian universities in Gaza Strip. (Chairman, Vice President, Dean, Deputy Dean, and Administrative Directors) in three universities in Gaza Strip (Islamic University, Al-Aqsa University, Al-Azhar University) and the number of retrieved questionnaires was 143, with a recovery rate of (90%). The results of the study showed the presence of a high degree of approval by the respondents on the field of cloud computing with a relative weight of 73.2%, as well as the presence of a high degree of approval by the respondents on the field of job performance with a relative weight of 81.1%, and the study showed a statistically significant relationship at the level ( $\alpha \leq 0.05$  between Cloud computing and job performance for managers working in Palestinian universities in Gaza Strip governorates.
- Study of (Gwendolyn & Caroline, 2015), which aimed to identify cloud computing services used by non-governmental organizations and to identify the reasons that may be related (management, workforce or companies), which affect the adoption or non-acceptance of this technology, and the researchers used the inductive and deductive approach. To verify the validity of the results during the study in order to create a perception of institutions about the use of computing, the researchers used the questionnaire as a tool for the study by applying it to the Gweru organization, which contains 55 non-governmental organizations. The study sample was formed from workers in these institutions, and the study found a number of. The most important results are that the most used computing services are social networking by (97%), Google by (94%) and Al-Jameel by (86%), and the study found a number of concerns represented in the lack of a budget that supports technology initiatives, and the study was satisfied with finding solutions to eliminate concerns and did not make any recommendations.
- A study (Salman & Bhungara, 2015) which aimed to show the possibility of using cloud computing in NGOs in India to effectively manage health needs, in addition to showing the level of adoption of cloud computing in India and Pakistan among NGOs, and analyzing the concerns that these institutions face in using computing, and the study used the descriptive approach through a case study of some NGOs and designing a questionnaire to collect information from the managers of the organizations, and two interviews were conducted with the managers of two institutions in India and Pakistan. The study indicated a number of results, the most important of which is that data privacy is one of the most important obstacles facing the application of cloud computing in NGOs in India and Pakistan.
- Study of (Gabi, 2015) which aimed to assess the feasibility of adopting cloud computing in the Palestinian public sector in addition to identifying all the potential opportunities and challenges facing the arrangement for the application of cloud computing. Using the comprehensive survey, the sample size was 152 employees, and the researcher conducted eleven semi-regular interviews with some experts in the public sector. The results showed that the Palestinian public sector is not ready to adopt cloud computing in its operations due to the lack of senior management support, the lack of realization of the benefits and objectives of adopting cloud computing, and all the lack of human resources experience in computing technology, and the studies identified the most important challenges facing the Palestinian public sector to adopt the application of computing.
- Study of (Shaath, 2014), which aimed to present a proposal that helps in the application of e-government management and benefit from technological development, and to extract the importance of the role played by the government cloud and its desired benefits through its Palestinian application, and to shed light on the most important obstacles that the Palestinian government may face during the application. The researcher during his study of the mixed approach through the use of questionnaire, interview, and focus groups as tools for collecting data from the study community, which consisted of 93 employees in bright positions related to computer and information technology in the ministries of the Palestinian government in Gaza Strip. The results showed a set of economic, technical, administrative and development benefits of the government cloud, and the results showed the availability of the necessary requirements to start building the government cloud to a good degree, and some obstacles to be overcome before starting the implementation were extracted.
- Study of (Oliveira et al., 2014) which aimed to study the factors affecting the adoption of cloud computing in the service and manufacturing sectors in Portugal. . The results showed that the support of senior management, technological readiness and comparative advantage are among the most important factors that affect the adoption of cloud computing by enterprises, while reducing costs indirectly affect the adoption of cloud computing. The study recommended conducting extensive research studies on the importance of applying computing in the industrial field and the service sector in Portugal, while raising the level of economic production in the country.



- A study of (Al-Alimi, 2014), which aims to identify the concept of cloud computing, its advantages and disadvantages, and benefit from its various applications in providing information services, and the extent to which educational libraries in the United Arab Emirates invest in such technologies. By relying on interviews for a number of library workers in the United Kingdom, and reports. The results of the study showed that cloud computing saves from 30-60% of technological expenditures in libraries and plays a key role in providing information service at all levels and aspects. Use of open source software.
- Study of (Stieninger, 2014) which aimed to identify the factors affecting organizations' adoption of cloud computing, through the descriptive analytical approach, and a questionnaire was designed to collect data and the questionnaire was distributed to 551 organizations. The study focused on the factors that affect the adoption of computing, which is "comparative advantage", safety and confidentiality. The study indicated that comparative advantage is the most important factor affecting organizations' adoption of cloud computing, and data security and privacy are among the most important obstacles facing organizations in adopting computing.
- Study of (Budņiks and Didenko, 2014), which aimed to study the factors affecting the decision of enterprise managers and small-sized companies to adopt the application of cloud computing technology, and the study examined a number of factors, the most important of which are security, data confidentiality and comparative advantage. The researchers used the descriptive analytical approach, through the design of a questionnaire that was designed and distributed to 150 middle management employees in institutions. The study concluded that there is a positive trend towards institutions adopting cloud computing technology in their work due to several factors, the most important of which are data confidentiality and the comparative advantage that it achieves.
- Study of (Mansour, 2013), which aimed to clarify the risks of adopting the application of cloud computing in educational institutions, and the researcher applied his study to the Islamic University of Gaza as a model for the study. And the skills of information technology employees, safety effectiveness, and cost reduction) on the impact of educational institutions to adopt the application of computing, and to achieve the goal of the study, the researcher used the questionnaire as a tool for data collection. The results showed a number of results, the most important of which is the idea of adopting cloud computing technology in the work of the Islamic University, which is acceptable due to the awareness of the sample members the size of the benefits that will accrue to the university from adopting this technology, and that the Islamic University is able to support and integrate university services with cloud computing. And the adoption of cloud computing works to reduce costs. And the university does not provide training programs for its employees to study such modern technologies as cloud computing.
- Study of (Gupta et. al., 2013) which aimed to study the factors affecting the adoption of cloud computing in small companies, as well as to determine the benefits that would accrue to those institutions if computing technology was adopted in their work. The study used the descriptive analytical approach, where a questionnaire was designed as a tool for the study. It was distributed to 211 institutions. The study showed that the ease of use of computing applications, suitability of services to companies' needs, data security, and cost reduction are among the most important factors that contributed to the adoption of computing technology by medium companies.
- Study of (Trivedi, 2013), which aimed to analyze the situations of governments and large companies that rely on cloud computing in their work, whether they are adopting this technology or thinking to move to implement it, by answering the study to a number of in-depth questions about the conditions of those companies in order to identify any emerging patterns and explore programs Operating cloud computing and formulating a model for adopting cloud computing in the work of these institutions. The study concluded a number of results, the most important of which is that public and private sector organizations look forward to working and spreading cloud computing in their work because of its importance in facilitating work. Some organizations have made great strides in using computing.

**Commenting On Previous Studies:** It is clear from the review of previous studies that these studies have varied and varied according to the different goals that they sought to achieve, as well as the different environments that were applied to them, the variables they studied, the curricula used and the tools that were used. About previous studies:

**The points of agreement and differences between the current study and previous studies:**

▪ **First- The Aspects Of The Agreement:**

1. **Regarding The Study Variables:** The current study is similar to a number of previous studies in its handling of the cloud computing variable by studying the factors affecting the application of cloud computing, such as the study of (Bahour, 2016), (Stieninger, 2014), (Budņiks and Didenko, 2014), and (Oliveira et al., 2014).
2. **Regarding The Study Method And Study Tool:** The study agreed with most of the previous studies in their use of the descriptive analytical approach, and also agreed with previous studies in the use of the questionnaire as a tool for collecting information.
3. **Concerning The Study Population and Sample:** This study differed with the studies in terms of the study population, and partly agreed with some that were taken from non-governmental institutions as a study community, such as the study of (Gwendolyn, 2015 & Caroline) and (Salman& Bhungara, 2015).

- **Second- The Differences:** The study differed with previous studies in terms of the study environment and the study community, so that none of the previous studies addressed the application of cloud computing to the environment of charitable institutions, and this is one of the most important features that distinguishes the study from previous studies. .

#### **Benefits from Previous Studies:**

1. Enriching the theoretical framework in the study.
2. Building a questionnaire study tool.
3. Ensure that the current study is not repeated.
4. Providing the necessary references for the study, especially foreign references.

#### **What Distinguishes The Study:**

- The study was applied to the environment of NGOS institutions in Gaza Strip, and to the knowledge of the researchers, this is the first study that studies the application of cloud computing in the work of NGOS institutions in Gaza Strip.
- Using a number of tools for the data, as the researchers relied on more than one means in collecting primary data, most notably the interviews, the questionnaire, and the holding of a workshop.

#### **Theoretical Framework**

**First- Cloud Computing:** In light of the tremendous technological development in the world, and the pursuit of applying the computerized electronic system in all walks of life, many owners of institutions and companies have resorted to adopting the idea of cloud computing and starting to implement it to facilitate the conduct of administrative work in the institution. Cloud computing has created many new opportunities for organizations around the world, and today, cloud services are available at affordable prices and accessible to businesses at all levels. There are also huge economic advantages to this widespread acceptance of cloud computing, and many companies have now embraced cloud computing. Over the years, the advent of technology has fueled the growth of cloud computing, but this growth was not as expected at the beginning of the cloud computing era (Raza, 2015). Cloud computing is based on the main idea of making use of shared resources, whose cost is measured by how much they are used over the Internet. The need for cloud computing arises as a result of the increase in large-scale, high-performance systems and the high cost of a large number of needed resources. This technology provides better resource delivery services as needed. While reducing the effort (Radwan, 2016) and according to Gupta (2013), cloud computing also depends on the cloud, which is a huge interconnected network of servers or individual computers that work in a parallel form that combines computing resources, which leads to the generation of computing power. It also relies on virtualization technology that helps to make the most of these resources and increase their flexibility. It is owned by a third party called the cloud provider, who in turn bears the cost of servers, hardware and software. This topic explains an overview of cloud computing to simplify it by identifying its concept, origin, development, and requirements used by charitable organizations, as well as the most important characteristics, advantages, environmental system, components, and obstacles facing their application, in addition to addressing the dimensions that researchers studied to determine the readiness of institutions to adopt cloud computing technology.

**Cloud Computing Concept:** The rapid development in network technology has led to the tendency of many institutions to make their applications available for use through the Internet in what is known as cloud computing, which has become a buzzword in the world of industry, although it is not a completely new concept, but it has become sweeping presence in the present digital age and that is due to the spread of the Internet and telephone devices on a large scale with the improvement of bandwidth, as this technology provided its users with better advantages such as saving expenses and providing services to the largest segment of beneficiaries (Al-Alimi, 2014). Alassaf (2016) defines cloud computing as a term given to all forms of distributed and interconnected computing through a network that provides services of interest to users. According to (Radwan, 2016), the cloud allows users to access the service at any time and any place and pay for what is used only, and it is a way to connect computerized resources, distributed systems and web services, as it is a unique opportunity for companies, as it aligns with information technology requirements and infrastructure. According to (Lin, 2012), there is a growing realization that there will come a day when cloud computing will be the main tool that will be relied upon in managing enterprises and small and medium-sized companies, as the cloud market worldwide is expected to reach 8.1 billion by the end of 2013.

It is a distributed, parallel computing system consisting of a set of interconnected virtual machines, which are automatically provided as one or more unified computing resources based on negotiated SLAs between the service provider and the beneficiaries (Buyya et al, 2011).

Cloud computing can be defined from a service point of view as a type of computerized application service such as e-mail, office software, and enterprise resource planning, which uses widespread resources that can be shared among the employees of the enterprise, and therefore the user can connect to a number of servers at the same time, so that these allow Servers exchange information among themselves (Bahour, 2016).

Wang et al. (2010) defines cloud computing as a set of networked services that provide personalized, cheap, on-demand secure computing platforms that can be accessed in an easy and saturated way.

The researchers adopt the definition (Radwan, 2016) as a procedural definition during its study as a sophisticated technology that allows users to transfer and process their files and data in the cloud (technological resources over the Internet) so that this data is stored and processed within the cloud, with the ability to access that data at any time and place whenever Internet availability.

**Cloud Computing Goals:** Eid (2013), (Alshamaila, 2013) and (Laudon & Laudon, 2017) consider that cloud computing is a modern technology that seeks to achieve the following goals:

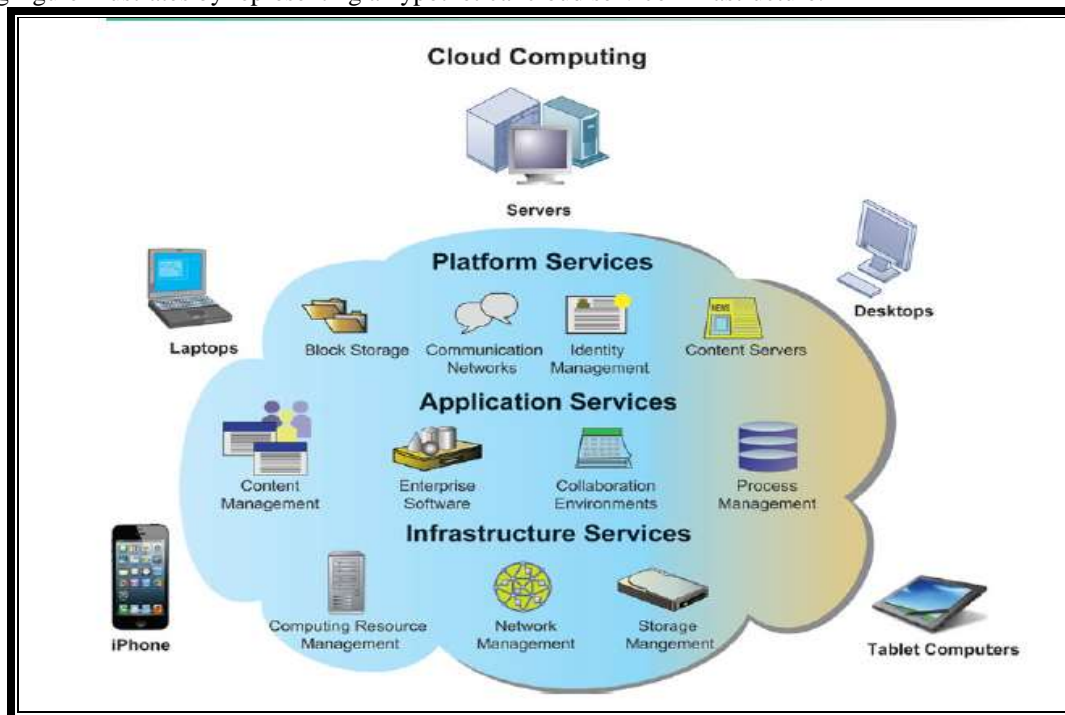
- Providing a high storage space for high quality information.

- Providing easy access to information with the ability to retrieve it at any time and from anywhere on the Internet.
- Sharing information between beneficiaries and the ease of its circulation and transmission over the Internet, regardless of the size of that information.
- Obtaining most of the operational and application software for free in most cases, which saves the beneficiary the cost, time and maintenance.
- Elimination of the need to make backup copies of information stored on personal computers and storage devices.
- Processing beneficiaries' information remotely, related to creating, deleting, modifying files or determining levels of access to them, in addition to organizing their preservation and storage.

**Cloud Computing Elements:** Laudon & Laudon (2017) and (Hsu, 2014) see that cloud computing contains a number of elements, the most important of which are:

- A personal computer connected to the Internet, preferably with a high speed.
- An operating system that allows access to the Internet.
- An internet browser that can use cloud computing.
- Cloud computing service provider.

The following figure illustrates by representing a hypothetical cloud service infrastructure.



**Figure 2:** Elements of Cloud Computing

**Source:** (Laudon & Laudon, 2017)

**Cloud Computing Features:** According to (Masrom & Rahimli, 2015), cloud computing is characterized by a number of characteristics, the most important of which are the following:

- **User Centralization:** It means that the user, as soon as he is connected to the cloud, becomes the owner of the documents and data he stores inside the cloud, and he can share it with others over the Internet.
- **Centralization of Tasks:** where the cloud works and focuses on meeting the needs of the user and how to satisfy the needs of users through its various applications such as word processing, spreadsheets and e-mail.
- **Infrastructure Centralization:** Using the cloud helps free you from the burden of creating and managing complex operations through what the cloud provides from huge servers that help in performing complex tasks using high-spec computers.
- **Centralization of Software, applications, and documents:** It is possible to run, store and edit data in computing servers through any computer connected to the Internet, where this feature allows the possibility of using it permanently, and the service provider gives access and modification of files to clients, which enhances cooperation between members of the same group regardless of Presence.
- **Computing Power:** It is produced through the interconnection of thousands of computers and servers together.
- **Access:** Storing data in the cloud allows users to retrieve more information from a different number of repositories.
- **Intelligence:** required to extract and analyze the huge data stored on the various clouds.

– **Programming:** It is the most important requirement to enable dealing with many necessary tasks in the cloud, such as protecting information security.

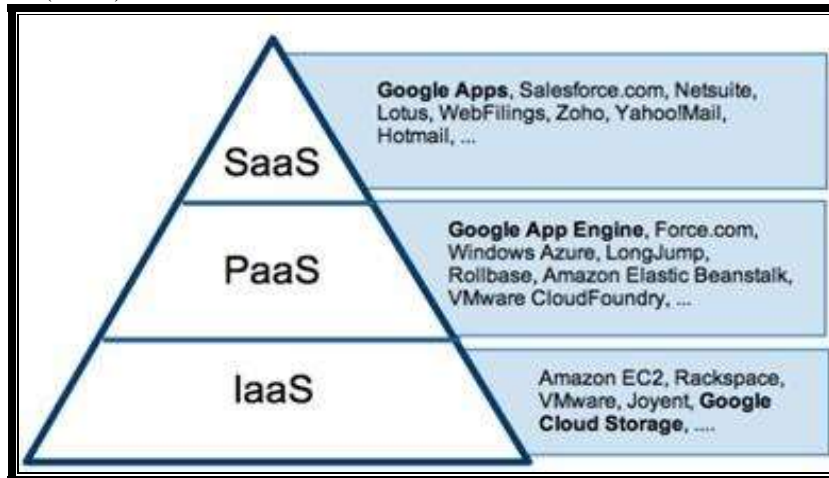
– **Continuity of Service:** through easy access to data at any time and from any place where the Internet is available.

The researchers believe that one of the most important characteristics of cloud computing is the ability to access data and information by its users at any time as long as the Internet is available, as well as data sharing, as all institutions using technology can work on any file in the cloud and share it collectively.

**Cloud Computing Applications as Services:**

Hsu (2014) sees that cloud computing employs service-driven business models and that it can display services that are grouped into the following categories:

- Software as a Service: "SaaS"
- Platform as a Service: "PaaS"
- Infrastructure as a Service (IAAS)



**Figure 3:** Computing as Services Applications

Source: (Gartner, 2009)

**First- Software as a Service:** It is that you use a specific application stored on the cloud, for example, a word program located in a data center and you connect to it via the Internet and write in it, modify and add data and then get the output from it, and all of this while you are on the cloud and your device is only the communication tool, and the user here cannot control Operating system in the cloud and does not control hardware or networking. YouTube can be considered in this category, as the on-site video browser is the cloud-based application with which you can access existing videos, but you cannot change anything on the site.

**Second- Platform as a Service:** Using the cloud as a platform to put several applications on it, and you can work on all of them. You can also put a complete operating system and there is integration between the applications. For example, you design something in Photoshop and then it is inserted into another application, so it moves and adds effects, so we get a video clip with sound. Like Google apps which is a platform that allows you to add apps at will.

**Third: Infrastructure As A Service:** Hardware resources (such as storage) and computing power are provided as services to clients, and the cloud is treated as an infrastructure limited to a certain processing capacity, memory size, storage space, and number of users, and you are free to use it the way that suits you. For example, you can install several operating systems, install several applications on each system, and allow a certain number of users to enter each operating system to use its applications without allowing them to be confused (Lamba & Gurdev, 2016).

**Factors Affecting The Readiness Of Charities To Adopt Cloud Computing:**

The researchers studied and reviewed a number of previous literature related to cloud computing. It was noticed that a number of previous researchers touched on some models that contribute to the adoption of modern technologies by institutions. Two elements to measure the readiness of institutions will be addressed:

1. **Data Security And Privacy:** Laudon and Laudon (2017) define security as a set of procedures, standards and technical measures that are used to prevent individuals without jurisdiction from entering information networks, tampering with their contents, stealing any information or changing what is inside the system of information, and Basu (2004)) defined privacy as maintaining The information is kept confidential and private and stored on electronic systems that prevent non-specialized individuals from accessing it.

The researchers define procedurally the security of data privacy to maintain the data in a secure manner through the application of the information security policy in order to protect it and prevent the unrelated persons from accessing that data and information, viewing it and tampering with it.



2. **Technological Environment:** Building an information society that depends on electronic transactions effectively requires the availability of a technological infrastructure, and the technological readiness of organizations is considered one of the most important factors for the success of the application of advanced technologies such as cloud computing so that what is required of infrastructure such as technological computer networks, which is a group of computer devices linked with each other, is provided, by wired or wireless media, as well as servers in addition to a strong and uninterrupted Internet subscription, with a central database of all service subscribers (Ebrahim and Irani, 2005).

The researchers define the technological environment procedurally as all the technical and technological resources of devices and equipment that work on the successful application of advanced technologies.

### Second - Charitable Institutions

Charitable institutions are considered among the civilizational phenomena in any country, because they show the extent of sophistication that members of society have reached in order to establish such institutions to meet with various activities that urge solidarity between members of society in various areas of life, and given the economic conditions that our Palestinian people in general and our people are going through. In Gaza Strip in particular, charitable institutions are considered one of the pillars of civil society, and one of the important pillars upon which our Palestinian society is based in light of the recurring crises of wars, repeated occupation, stifling siege and unemployment. In light of these difficult circumstances, it was necessary to establish charitable institutions in the Palestinian territories. In order to provide services and assistance to the Palestinian community, these institutions have developed day by day (Imam, 2007), however, these institutions faced many challenges, both at the internal and external levels, and the greatest impact on the work of these institutions emerged after the 2005 elections, which led to the orientation of countries The grant to provide aid to donors as an alternative to the elected government, and the work of the institutions increased after the events of 2007 and the intensification of the siege, as the number of charitable institutions multiplied. A female worker in Gaza Strip whose budgets exceeded the budget of the Palestinian government in Gaza Strip and now provides relief services to a large number of community members (Al-Aloul, 2011).

Given the importance of the role that falls on these institutions under difficult circumstances, it was necessary to study the readiness of charitable institutions to apply modern technologies represented in cloud computing in order to reach a better level of justice in the distribution of these institutions to their services, as well as work to raise efficiency and quality, both quantitatively and qualitatively through These institutions adopt modern technologies such as cloud computing in their work.

### Types of Charitable Organizations:

According to (Al-sakani, 2012), charitable institutions in Palestine in general and the Gaza Strip in particular can be classified according to the nature of work and the role they contribute to within Palestinian society into three groups:

1. Institutions that carry out charitable and social welfare activities with the aim of helping needy groups and include most NGOs.
2. Development institutions that aim to participate in the development process and achieve it, and work to provide the individual with the necessary training to qualify him to participate in the production process.
3. Institutions that contribute to preparing people to play a positive role in decision-making in national and international institutions, and include political activity within the state.

The number of civil and charitable institutions operating in Gaza Strip registered with the Ministry of Interior in Gaza, according to the statistic of 2022, which operate in various fields, reached 846 institutions. During his study, the researchers will address only social charitable institutions, which numbered 415 institutions distributed according to the following table on the governorates of Gaza Strip

**Table 1:** Social charitable institutions geographically distributed over the governorates of Gaza Strip

#	The Governorate	The Number
1.	Gaza Governorate	167
2.	North Gaza Governorate	94
3.	Central Governorate	45
4.	Khan Yunis Province	66
5.	Rafah Governorate	43
<b>Total</b>		415

**Source:** General Administration of Association Affairs in the Ministry of Interior - Gaza - 2022

### Methodology and Procedures:

The study's methodology and procedures are considered a main axis through which the applied aspect of the study is accomplished. Accordingly, the researchers will address the procedures that were followed in preparing the study by clarifying the study's approach and its community, and then defining the sample on which the study was applied, as well as preparing the main study tool (Questionnaire) and the mechanism of its construction, development, validity and reliability, and the chapter ends with the statistical treatments that were used in analyzing the data and drawing conclusions.

**First - Study Methodology:** The researchers used the descriptive analytical approach in order to achieve the objectives of the study, through which it attempts to describe the phenomenon under study, analyze its data, and the relationship between its components and the opinions raised about it and the processes it includes, and according to (Al-Assaf, 2000), the The descriptive-analytical

approach did not stop at collecting information to describe the phenomenon, but went beyond that to clarify the relationship and its amount, and to deduce the reasons behind a particular behavior from previous data.

**Second- Study Population and Sample:** The target study population consists of workers in social charitable institutions in Gaza Strip, which number (15) institutions registered in the Ministry of Interior and the Ministry of Social Affairs for the year 2022. In order to collect data about the study, the simple random sampling method was used, taking into account considering a number of criteria that the researchers challenged to select the study sample, including:

1. That the institution be accredited and licensed by the competent authorities for a period of time and has been providing its services to citizens for 7 years.
2. The number of employees in the institution is 10 employees at least.
3. The organization has a strategic action plan.
4. Taking into account the geographical distribution of institutions at the level of Gaza Strip.
5. Taking into account the proportional representation of some international organizations so that the study includes everyone.


**Study Tool:** We consider the questionnaire the most widely used and widespread means among researchers, and the questionnaire is defined as “a tool that includes a number of dimensions, axes, and paragraphs used to obtain opinions or data by a group of respondents according to certain controls, and the respondents respond themselves to it, and it is written in writing” (Al-Agha, 2004), In order to conduct the applied study, the researchers prepared a questionnaire in order to measure the readiness of charitable institutions in Gaza Strip to adopt and apply cloud computing.

**Table 2:** Study axes distributed according to citation sources

#	Statement	Number Of Paragraphs	Source
1.	Availability Of The Technological Environment	7	(Oliveira 2014) ‘ (Shaata, 2014)
2.	Data Privacy And Security	6	(Oliveira 2014_

The researchers used the scale from 1-10 for the questionnaire items in order to obtain better accuracy in evaluating the respondents’ opinions, so that the closer the bike to 10 indicates the high approval of what was stated, and vice versa, and the following table shows that:

**Table 3:** The scale scores used in the questionnaire

Response	Strongly Disagree									Strongly Agree
Class	1	2	3	4	5	6	7	8	9	10

The following table shows the classification that was used as a criterion for classifying the study’s axes, and the results that were reached:

**Table 4:** The criteria for classifying the research axes

#	Category	Relative Weight
1.	Excellent	91%- 100%
2.	Very Well	81%- 90%
3.	Good	71%- 80%
4.	Acceptable	61% - 70%
5.	Weak	Less than 60%

**The Validity And Reliability Of The Questionnaire:** The validity and reliability of the questionnaire are intended to verify the validity and reliability of the study tool (the questionnaire), as follows:

**The Validity of The Questionnaire:** honesty means that the questionnaire includes all the elements that must be included in the analysis on the one hand, and the clarity of its paragraphs and vocabulary on the other hand, so that it is understandable to everyone who uses it. If they determine the validity of their scores, and in order to verify the validity of the study tool, the researchers conducted the following validity tests:

**First- Apparent Honesty:** The researchers presented the study tool in its initial form to a group of arbitrators, who in turn provided advice and guidance, and amended and deleted what was necessary on the questionnaire’s paragraphs.

**Second- The Validity of the Scale:**

**1. The validity of the internal consistency of the paragraphs of the questionnaire:**

Internal consistency honestly means the consistency of each paragraph of the questionnaire with the axis to which this paragraph belongs. The internal consistency of the resolution paragraphs was calculated through the pilot study sample size of (30) individuals, as well as it was calculated within the final sample and added to it, by calculating The correlation coefficients between each paragraph and the total score for its axis are as follows:

**Table 5:** The validity of the internal consistency for all study axes

#	Statement	Number Of Paragraphs	Correlation Coefficient	Significance
1.	<b>The First Axis</b> - availability of the technological environment	7	0.588	0.001

#	Statement	Number Of Paragraphs	Correlation Coefficient	Significance
2.	<b>The Second Axis</b> - data privacy and security	6	0.601	0.001

The previous table shows the correlation coefficients between each of the axes of the study and the total average of the axes, which shows that the indicated correlation coefficients are a function at the level of significance (0.05), as the probabilistic value of each axis is less than (0.05).

#### The internal consistency of the first axis: the availability of the technological environment

**Table 6:** Internal consistency validity for the first axis: Availability of the technological environment

#	Statement	Correlation Coefficient	Significance
1.	The organization owns a website.	0.328	0.025
2.	Charities have high-speed internet lines and their services are uninterrupted.	0.457	0.017
3.	The use of cloud computing is compatible with the devices and equipment available in Palestinian charitable organizations.	0.486	0.010
4.	The use of cloud computing is very complex for the ongoing operations of charitable organizations.	0.484	0.015
5.	Internet speed and quality affect the application of cloud computing in charitable organizations.	0.409	0.017
6.	The software tools needed to build and manage the cloud are available.	0.525	0.005
7.	All computers in the organization are connected to a single network.	0.545	0.003

The previous table shows the correlation coefficients between all the paragraphs of the axis of "technological environment availability" and the total rate of the axis, which shows that the indicated correlation coefficients are significant at the level of significance (0.05), as the probabilistic value of each paragraph is less than (0.05).

#### The Internal Consistency of the "Data Privacy and Security" Axis

**Table 7:** Internal consistency validity for the second axis: data privacy and security

#	Statement	Correlation Coefficient	Significance
1.	Data security and privacy is one of the biggest challenges facing organizations in adopting technological technologies.	0.524	0.005
2.	Information security elements are available for data and files uploaded to the cloud.	0.362	0.064
3.	Organizations are moving away from cloud computing due to their fear of data theft	0.572	0.002
4.	Cloud computing protects data and files from cybercriminals.	0.509	0.007
5.	Customers (citizens - employees - partner institutions - donors) are concerned about the privacy of their data.	0.634	0.000
6.	Security concerns are growing with the implementation of cloud computing in charities.	0.533	0.004

The previous table shows the correlation coefficients between all the paragraphs of the data privacy and security axis and the overall average of the axis, which shows that the indicated correlation coefficients are a function at the level of significance (0.05), as the probabilistic value of each paragraph is less than (0.05).

**The Stability Of The Resolution Paragraphs:** The stability of the questionnaire means that this questionnaire would give the same result if the questionnaire was redistributed more than once under the same conditions and conditions, or in other words, it means stability in the results of the questionnaire and not changing them significantly if it was redistributed to individuals several times during certain periods of time, and to verify the Stability of the study's resolution The reliability steps were carried out on the same exploratory sample in two ways: the half-segmentation and Cronbach's Alpha coefficient.

**Half Split Method:** The Pearson correlation coefficient was found between the average of the odd-ranked questions and the rate of paired questions, and the previous table showed that there is a relatively large stability coefficient for the questionnaire items, which reassures the researchers to use the questionnaire with all reassurance.

**Table 8:** shows the stability coefficient (split-half method) and Cronbach's Alpha coefficient

#	Statement	Number Of Paragraphs	Cronbach's Alpha Coefficient	Spearman Brown
1.	Availability Of The Technological Environment	7	0.715	0.834
2.	Data Privacy And Security	6	0.700	0.800

Cronbach's Alpha coefficient was used to measure the stability of the resolution as a second method for measuring the stability. The researchers conclude from the results of the validity and reliability tests that the study tool (the questionnaire) is honest in measuring what it was designed to measure, and is very stable, which qualifies it to be an appropriate and effective measurement tool for this study and can be applied with confidence, and thus the questionnaire is in its final form.

**The Results of the Field Study****Descriptive Analysis of the Study Variables:****Statistical description of the sample according to the primary data:****Table 9:** Distribution of the study sample

<b>Personal Data</b>		<b>The Number</b>	<b>Percentage %</b>
<b>Age Group</b>	under 30 years old	61	25.3
	From 30 to less than 35 years old	104	43.2
	From 35 to less than 39 years old	44	18.3
	39 years and over	32	13.3
<b>Total</b>		241	100.0
<b>Gender</b>	Male	198	82.2
	Female	43	17.8
	<b>Total</b>	241	100.0
<b>Scientific Qualification</b>	Diploma Degree	29	12.0
	Bachelor Degree	155	64.3
	Postgraduate Degree	57	23.7
	<b>Total</b>	241	100.0
<b>Years Of Service</b>	5 years or less	61	25.3
	From 5 to less than 10 years old	109	45.2
	From 10 to less than 15 years old	63	26.1
	15 years and over	8	3.3
	<b>Total</b>	241	100.0
<b>Job Title</b>	Foundation Manager	83	34.4
	Board member	17	7.1
	Project Manager	67	27.8
	Head of the Department	74	30.7
	<b>Total</b>	241	100.0
<b>The Governorate</b>	North	58	24.1
	Gaza	90	37.3
	Central	27	11.2
	Khan Yuns	39	16.2
	Rafah	27	11.2
	<b>Total</b>	241	100.0
<b>Data Storage Locations</b>	PC	108	44.8
	Server	133	55.2
	<b>Total</b>	241	100.0
<b>Data Exchange With Funders Through</b>	Gmail	58	24.1
	yahoo	7	2.9
	Hotmail	176	73.0
	<b>Total</b>	241	100.00

It is evident from the previous table that the age group of respondents from 30 to less than 35 years constituted 43.2%, and those aged from 35 to less than 39 constituted 18.3%, while those over the age of 39 constituted 13.3%. The previous table shows that 82.2% of the respondents were males, while 17.8% were females. The researcher attributes this result to the fact that institutions in the third world countries depend on males more than females, and this is supported by our reality in which we live. The previous table also shows that the percentage of respondents with bachelor's degrees is 64.0%, while postgraduate studies are 23.7%. The researcher attributes this to the fact that a bachelor's degree is the minimum requirement for a job.

It also appears from the previous table that the percentage of respondents whose experience is between 5 and less than 10 years is 45.2%, while 26.1% whose experience is between 10 and less than 15 years. It is evident from the previous table that the percentage of respondents who work in the title of director of an institution constituted 34.3%, while a member of the board of directors formed 7.1, and a project manager constituted 27.8, while the head of the department was 30.7%. The previous table shows that the percentage of respondents from Gaza governorate is 37.3%, followed by the North governorate by 24.1%, while the southern governorates (Khan Younis and Rafah) are 27.4%, and the results from the previous table showed that 55.2% of respondents reported that data is stored on private servers, while 44.8% store data on the personal computer. The previous table shows that Gmail



accounted for 24.1%, while Yahoo accounted for 2.9%, while Hotmail was the most used method for exchanging data, with a percentage of 73.0%.

#### Answering the Study Questions:

The one-sample t-test was used to analyze the questionnaire items, and the item is considered positive in the sense that the sample members agree on its content if the calculated t-value is greater than the tabular t-value equal to 1.97 (or the probabilistic value is less than 0.05 and the relative weight is greater than 60 %), the paragraph is considered negative in the sense that the sample members do not agree with its content if the calculated t value is smaller than the tabular t value which is equal to 1.97 (or the probability value is less than 0.05 and the relative weight is less than 60%), and the sample opinions in the paragraph are neutral if Its p value was greater than (0.05).

#### Q1:- What is the availability of the technological environment in charitable organizations to adopt cloud computing?

The single-sample t-test was used, and the results are shown in the following table, which shows the opinions of the study sample members in the paragraphs of the first axis, the availability of the technological environment.

**Table 10:** Analysis of the paragraphs of the first axis: Availability of the technological environment

#	Statement	SMA	Relative Weight	Standard Deviation	T. Value	Rank
1.	The organization owns a website.	9.71	97.10	0.79	73.231*	1
2.	Charities have high-speed internet lines and their services are uninterrupted.	8.56	85.60	1.04	38.014*	2
3.	The use of cloud computing is compatible with the devices and equipment available in Palestinian charitable organizations.	7.91	79.10	1.02	29.262*	5
4.	The use of cloud computing is very complex for the ongoing operations of charitable organizations.	6.01	60.1	1.63	7.935*	7
5.	Internet speed and quality affect the application of cloud computing in charitable organizations.	8.15	81.50	1.07	31.060*	4
6.	The software tools needed to build and manage the cloud are available.	6.75	67.50	1.53	7.639*	6
7.	All computers in the organization are connected to a single network.	8.56	85.60	1.90	20.847*	2
<b>Total</b>		7.94	79.47	6.24	182.787	

\*All values are significant at the level of significance .050

Through the previous table, the results show that the relative weight of the fourth dimension "the availability of the technological environment" is (79.47%), which is the largest assumed value of the number (6), which is greater than 60.0%, and the probabilistic value is (0.000) which is less than (0.05), which means that the responses of the respondents On this axis, it was positive. The researchers see that the relative weight of the axis of availability of the technological environment is close to the relative weight of the structure of the organization, and the researchers attribute that this indicates that technology has become one of the pillars of administrative work within charitable institutions, despite the presence of some obstacles, and the study agreed with the study (Bahour, 2016) and the study (Shaht, 2014), which indicated the availability of the technological environment to support and build the cloud in universities and government to a good degree, and the study differed with the study (Gabi, 2015), which emphasized the lack of the necessary technological environment in the Palestinian public sector.

Paragraph (1) "The institution owns a website" came first in the ranking of the paragraphs of this axis, where the relative weight reached (97.1%), which is greater than the number (6), which is greater than (60.0%), and the probabilistic value is (0.000), which is less than (0.05), which indicates that the opinions in this paragraph were positive according to the respondents, while the weakest paragraphs were Paragraph (4), which is "Using cloud computing is very complicated for the current operations in charitable institutions" with a relative weight of 60.1%, which is approximately equal to 60.0% and the probabilistic value of the item was (0.000), which is less than (0.05), which indicates that the respondents' opinions on this paragraph were positive.

#### Q2:- What is the impact of data privacy on the application of cloud computing in charitable organizations?

The one-sample t-test was used, and the results are shown in the previous table, which shows the opinions of the study sample members in the paragraphs of the second axis, privacy and data security.

**Table 11:** Analysis of the paragraphs of the second axis: data privacy and security

#	Statement	SMA	Relative Weight	Standard Deviation	T. Value	Rank
1.	Data security and privacy is one of the biggest challenges facing organizations in adopting technological technologies.	7.89	78.90	1.20	24.564*	1

#	Statement	SMA	Relative Weight	Standard Deviation	T. Value	Rank
2.	Information security elements are available for data and files uploaded to the cloud.	6.63	66.30	1.37	7.185*	5
3.	Organizations are moving away from cloud computing due to their fear of data theft	7.14	71.40	1.47	12.067*	4
4.	Cloud computing protects data and files from cybercriminals.	5.68	56.80	1.77	-2.805*	6
5.	Customers (citizens - employees - partner institutions - donors) are concerned about the privacy of their data.	7.80	78.00	1.54	18.165*	2
6.	Security concerns are growing with the implementation of cloud computing in charities.	7.48	74.80	1.35	16.973*	3
<b>Total</b>		7.10	71.00	7.36	137.068	

\*All values are significant at the level of significance .050

Through the previous table, the results show that the relative weight of the sixth axis "data privacy and security" is (71.0%), which is the largest assumed value of the number (6), which is greater than 60.0%, and the probabilistic value is (0.000) which is less than (0.05), which means that the respondents' responses on this axis, it was positive, and the researchers believe that charitable institutions and their openness to technology did not prevent them from chewing and cautioning that the disadvantages of its complete application make it vulnerable to electronic hacking, and then violating the privacy of the target groups, and the study agreed with the study (Salman& Bhumgara, 2015), and the study (Hsu, 2014), where the two studies indicated the role of data privacy and security in adopting cloud computing.

Paragraph (1) "Data security and privacy is one of the biggest challenges facing organizations in adopting technological technologies" ranked first in the ranking of the paragraphs of this axis, as the relative weight reached (78.9%), which is greater than the number (6), which is greater than (60.0%), and the probability value is (0.000), which is less than (0.05), which indicates that the opinions in this paragraph were positive according to the respondents, while the weakest paragraphs were Paragraph (4), which is "cloud computing protects data and files from cybercriminals" with a weight of Relative 56.80%, which is less than 60.0%, and the probabilistic value of the paragraph was (0.000), which is less than (0.05), which indicates that the respondents' opinions on this paragraph were negative.

### Third- Analysis of the Dimensions of the Study Axes:

**Table 12:** Analysis of the dimensions of the study's axes

#	Axes	Relative Weight	Arithmetic Broker	Standard Deviation
1.	<b>The First Axis</b> - availability of the technological environment	79.5	80.0	6.2
2.	<b>The Second Axis</b> - data privacy and security	71.0	70.0	7.4
<b>Total</b>		78.1	79.2	4.8

By analyzing the levels of the study axes as shown in the previous table, it becomes clear that the relative weight of the level of readiness of charitable institutions in Gaza Strip to adopt and apply cloud computing reached 78.1%, and it is considered a good degree to some extent, despite the different environment in which the study was applied to study of (Radwan, 2016), (Budniks and Didenko, 2014) and (Mansour, 2013), but it is noted that these studies agree in the positive view of organizations' adoption of cloud computing technology, and researchers attribute this to the positive perception prevailing in Gaza Strip towards technological technologies, as well as the growing realization by The senior management of organizations of all kinds due to the importance of using technological systems in the administrative field, including cloud computing, in addition to the fact that the technological development in Gaza Strip has risen to the level of e-government and this is consistent with the study of (Al-Aloul, 2011) and (Bahour, 2016), Which made institutions fertile ground for applying advanced technologies, and the study also differed with study of (Hsu, 2014), which indicated that the rates of cloud computing adoption are still low and in its early stages. They urged this to the difference in the study environment as well as the place and purpose of the study's application, and as the current study differed with the study (Gabi, 2015), which indicated that the Palestinian public sector is not ready to adopt cloud computing in its operations, and the researchers believe that the reason for the difference in the result is due to the different study environment in particular In light of the challenges facing the Palestinian public sector in the last ten years, the most important of which is the Zionist and international blockade after the 2005 elections, which in turn negatively affected the government sector, in addition to the political division between Gaza and the West Bank, which negatively affected the public sector.

### Conclusion and Recommendations

#### Conclusions

The following Results and recommendations were reached:

- The study showed that charities in Gaza Strip are well prepared to adopt and implement cloud computing.
- The results showed that the relative weight of the axis "the availability of the technological environment" reached (79.47%), and the relative weight of the paragraph "the institution owns a website" was (97.1%).
- The results showed that the relative weight of the data privacy and security axis "has reached (71.0%), and the relative weight has reached (78.9%) for the paragraph "data security and privacy is one of the biggest challenges facing organizations in adopting technological technologies".

### **Recommendations**

In light of the findings, there are a set of recommendations, as follows:

- Work on developing remedial plans to eliminate the obstacles that hinder the use of any new technology, such as cloud computing technology.
- By holding workshops and training courses, and sending scholarships, if possible, or bringing experts to work in institutions.
- Working on enhancing and clarifying the concept of cloud computing for employees and the mechanisms of its application and the extent of the desired benefits from it.
- The need for charitable institutions to exert more efforts in the framework of meeting the aspirations and aspirations of donors by enhancing the effectiveness of self-monitoring.
- Strengthening the efforts of charitable institutions to overcome technical obstacles to building technology by government agencies and donors.
- The necessity of adopting cloud computing by charitable organizations in their work, as it achieves a competitive advantage to obtain more support and funding.

**References**

- [1] Abu Amuna, Y. M., et al. (2017). "Strategic Environmental Scanning: an Approach for Crises Management." *International Journal of Information Technology and Electrical Engineering* 6(3): 28-34.
- [2] Abu Naser, S. S., et al. (2017). "Impact of Communication and Information on the Internal Control Environment in Palestinian Universities." *International Journal of Hybrid Information Technology* 10(11): 41-60.
- [3] Abu Naser, S. S., et al. (2017). "Trends of Palestinian Higher Educational Institutions in Gaza Strip as Learning Organizations." *International Journal of Digital Publication Technology* 1(1): 1-42.
- [4] Abu Naser, S. S., et al. (2017). Social Networks and Their Role in Achieving the Effectiveness of Electronic Marketing of Technical Colleges. Second Scientific Conference on Sustainability and enhancing the creative environment of the technical sector Palestine Technical College - Deir Al Balah 6-7 December 2017.
- [5] Abu Naser, S. S., et al. (2017). Technical Education and its Role in Promoting Entrepreneurship in the Gaza Strip. Second Scientific Conference on Sustainability and enhancing the creative environment of the technical sector Palestine Technical College - Deir Al Balah 6-7 December 2017.
- [6] Al Hila, A. A., et al. (2018). "University Governance as an Input to Strengthen Partnership with Local Community Organizations-A Comparative Study between Public and Private Universities." *International Journal of Academic Multidisciplinary Research (IJAMR)* 2(8): 35-61.
- [7] Al Shobaki, M. J., et al. (2017). "Learning Organizations and Their Role in Achieving Organizational Excellence in the Palestinian Universities." *International Journal of Digital Publication Technology* 1(2): 40-85.
- [8] Alassafi, M. O., Alharthi, A., Walters, R. J., & Wills, G. B. (2016, October). Security risk factors that influence cloud computing adoption in Saudi Arabia government agencies. In *Information Society (i-Society), 2016 International Conference on* (pp. 28-31). IEEE.
- [9] Al-Badi, A., Tarhini, A., & Al-Sawaie, S. (2017). Utilizing Social Media to Encourage Domestic Tourism in Oman. *International Journal of Business and Management*, 12(4), 84-94.
- [10] Alhelou, E. M., et al. (2018). "Audit on Environmental Sustainability of Accounting Activities and its Impact on Maximizing the Value of the Enterprise as a Framework Proposed by the Auditors." *Research Journal of Finance and Accounting* 9(22): 51-76.
- [11] Al-Hila, A. A., et al. (2017). "The Impact of the Governance of Private Universities in Building Partnership with NGOs Operating in Gaza Strip." *International Journal of Engineering and Information Systems (IJEIS)* 1(9): 11-30.
- [12] Al-Najjar, Mahmoud T., Al Shobaki, Mazen J. and El Talla, Suliman A. (2022). The Reality of Change Strategies and the Level of Coordination and Transparency in the Readiness of Charitable Institutions in Gaza Strip to Adopt and Implement Cloud Computing. *International Journal of Academic Management Science Research (IJAMSR)*, 6 (4), Pages: 51-69
- [13] Al-Najjar, Mahmoud T., Al Shobaki, Mazen J. and El Talla, Suliman A. (2022). "Supporting Senior Management and the Readiness of the Organizational Structure in Palestinian Charitable Institutions to Adopt and Implement Cloud Computing", *International Journal of Academic Information Systems Research (IJASIR)*, 6 (3), March - 2022, Pages:1-17
- [14] Ammar, T. M., et al. (2017). "The Efficiency Extent of the Internal Control Environment in the Palestinian Higher Educational Institutions in Gaza Strip." *International Journal of Digital Publication Technology* 1(2): 107-126.
- [15] Bhumgara, A & Salman, M. (2015). Cloud Computing as a Tool for NGOs in India and Pakistan. *International Journal of Computer Science and Information Technologies*, 6 (6), 5226-5237.
- [16] Budņiks, L. &. (2014). Factors Determining Application of Cloud Computing Services in Latvian.
- [17] Buyya, R. . (2011). *Cloud Computing Principles and Paradigms*. United States: Johan Wiley & SONS, INC., Publication.
- [18] El Talla, S. A., et al. (2017). Technical Colleges as Smart Organizations and their Relationship to Sustainability. Second Scientific Conference on Sustainability and enhancing the creative environment of the technical sector Palestine Technical College - Deir Al Balah 6-7 December 2017.
- [19] El Talla, S. A., et al. (2017). The Creative Environment and Its Relationship to the Lean Management of Technical Colleges Operating in Gaza Strip. Second Scientific Conference on Sustainability and enhancing the creative environment of the technical sector Palestine Technical College - Deir Al Balah 6-7 December 2017.
- [20] El Talla, S. A., et al. (2018). "Organizational Structure and its Relation to the Prevailing Pattern of Communication in Palestinian Universities." *International Journal of Engineering and Information Systems (IJEIS)* 2(5): 22-43.
- [21] El Talla, S. A., et al. (2018). "The Application of the Principles of the Creative Environment in the Technical Colleges in Palestine." *International Journal of Engineering and Information Systems (IJEIS)* 2(1): 211-229.
- [22] El Talla, S. A., et al. (2018). "The Nature of the Organizational Structure in the Palestinian Governmental Universities-Al-Aqsa University as A Model." *International Journal of Academic Multidisciplinary Research (IJAMR)* 2(5): 15-31.
- [23] Gupta, P. S. (2013). The usage and adoption of cloud computing by small and medium businesses. *International Journal of Information Management*.
- [24] Hamdan, M. K., et al. (2020). "Creative Behavior and Impact on Achieving Lean Strategy in Organizations." *International Journal of Academic Accounting, Finance & Management Research (IJAAFMR)* 4(6): 66-90.
- [25] Hamdan, M. K., et al. (2020). "Creative Behavior in Palestinian NGOs between Reality and Expectations." *International Journal of Academic Multidisciplinary Research (IJAMR)* 4(3): 91-107.
- [26] Hamdan, M. K., et al. (2020). "Shared Responsibility, Rapid Response and Their Relationship to Developing the Creative Behavior of Organizations." *International Journal of Academic Management Science Research (IJAMSR)* 4(7): 1-21.
- [27] Hamdan, M. K., et al. (2020). "Strategic Sensitivity and Its Impact on Boosting the Creative Behavior of Palestinian NGOs." *International Journal of Academic Accounting, Finance & Management Research (IJAAFMR)* 4(5): 80-102.
- [28] Hamdan, M. K., et al. (2020). "Taking Action, Rapid Response and Its Role in Improving the Creative Behavior of Organizations." *International Journal of Academic Accounting, Finance & Management Research (IJAAFMR)* 4(4): 41-62.
- [29] Hamdan, M. K., et al. (2020). "The Effect of Choosing Strategic Goals and Core Capabilities on the Creative Behavior of Organizations." *International Journal of Academic Information Systems Research (IJASIR)* 4(4): 56-75.
- [30] Hamdan, M. K., et al. (2020). "The Reality of Applying Strategic Agility in Palestinian NGOs." *International Journal of Academic Multidisciplinary Research (IJAMR)* 4(4): 76-103.
- [31] Hsu, P. F.-H. (2014). "Examining cloud computing adoption intention, pricing mechanism, and deployment model". *International Journal of Information Management* 34(4), 474-488.
- [32] Kassab, M. K. I., et al. (2017). "The Impact of the Availability of Technological Infrastructure on the Success of the Electronic Document Management System of the Palestinian Pension Authority." *International Journal of Engineering and Information Systems (IJEIS)* 1(5): 93-109.
- [33] Laudon, C. & Laudon P. (2017). *Management information system. Managing the Digital form. (14th Edition)*. Pearson.
- [34] Lin, A. (2012). Cloud computing as an innovation: Perception, attitude, and adoption. *International Journal of Information Management*.
- [35] Masrom, M & Rahimli, A. (2015). Cloud Computing Adoption in the Healthcare Sector: A SWOT Analysis. *Canadian Center of Science and Education*. 11(10), 12-18.
- [36] Oliveira, T. T. (2014). Assessing the determinants of cloud computing adoption: An analysis of the manufacturing and services sectors. *Information & Management*, 51(5), 497-510.
- [37] Salah, A. A. (2010). Data Analysis Using Map Reduce programming Model on the Cloud. Qatar: Qatar Uni. Faculty of Eng. The Dep. Of Science and Eng.
- [38] Stieninger, M. N. (2014). Impacts on the organizational adoption of cloud computing: A reconceptualization of influencing factors.
- [39] Trivedi, H. R. (2013). *Cloud Adoption Model for Governments and Large Enterprises*. Cambridge: Massachusetts Institute of Technology.
- [40] Wang, L. V. (2010). *Cloud computing: a perspective study*. New Generation Computing.
- [41] Zaid, A. A., et al. (2020). "The Impact of Total Quality Management and Perceived Service Quality on Patient Satisfaction and Behavior Intention in Palestinian Healthcare Organizations." *Technology Reports of Kansai University* 62(03): 221-232.
- Arabic References in Roman Scripts:**
- [1] Al-Alimi, Tharuat (2014). Ways to benefit from cloud computing applications in providing information services in the United Arab Emirates." Dubai: College of Islamic and Arabic Studies.
- [2] Al-Aloul, Abdul Majid Shehdeh. (2011). the availability of requirements for the success of electronic management application in major charitable societies in Gaza Strip and its impact on institutional readiness against corruption. (Unpublished Master's thesis) The Islamic University, Gaza.
- [3] Al-Assaf, Saleh bin Hamad (2000). The researcher's guide to the behavioral sciences. Rabbad: Obeikan Library.
- [4] Bahour, Khaled (2016). The availability of factors affecting the adoption and application of cloud computing in government institutions from the point of view of higher management. (Unpublished Master's Thesis) The Islamic University, Gaza.
- [5] Eid, Nabil (2013). Cloud computing, its meaning and use, its pros and cons.
- [6] Gabi, Shaher (2015). Adopting cloud computing in the Palestinian public sector, opportunities and challenges. Nablus - Palestine: An-Najah University.
- [7] Mansour, Ahmed (2013). Fears and challenges of adopting cloud computing in higher education institutions. (Unpublished Master's Thesis) The Islamic University, Gaza.



- [8]Radwan, Aziza (2016). The relationship of cloud computing to developing the job performance of managers working in Palestinian universities in Gaza Strip. (Unpublished Master's Thesis) Al-Azhar University, Gaza.
- [9]Saleh, Khuwaildat (2016). The role of innovative digital computing applications in improving the performance of human resources in the organization. Journal of Ijtihad for Legal and Economic Studies (10) 232-251.
- [10]Shaah, Ahmed (2014). A proposal for applying the government cloud to develop electronic management in the Palestinian government "Gaza Strip. Gaza: Academy of Politics and Leadership".
- [11]Syed, Rehab Favez. (2013). Open Source Cloud Computing Systems "A Comparative Analytical Study. Iraq. The Iraqi Journal of Information Technology. (17) 180-201.
- [12]Al-Agha, Ehsan. (2004). Introduction to educational research design. 3. Gaza: Al-Rantissi Press.
- [13]Al-sakani, Doaa Adel (2012). Charitable institutions are governed by their rulings and the controls of those in charge of them and the limits of their powers. (Unpublished Master's Thesis) The Islamic University, Gaza.