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Requirements for Applying Decision Support Systems in Palestinian Higher Education Institutions - Applied Study on Al - Aqsa University in Gaza

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ABSTRACT

The purpose of this research is to explain the requirements of applying decision support systems in Palestinian higher education institutions- an applied study on Al-Aqsa University in Gaza. The researchers used the descriptive and analytical methods. The study population is the staff members of Al-Aqsa University in Gaza. The researchers used the random sample method. 150 questionnaires were distributed to the study population and 126 responses were obtained back with a recovery rate (84%). The results of the study showed the followings: There was an approval by the sample members of the requirements of the application of decision support systems in general. The approval of "Support of senior management for the use of decision support systems" reached (62.60%). While the level of approval for "the possibilities for using decision support systems" (69.03%). Finally, the level of approval for the type of decision support systems used was 69.73%. The results showed that there were no statistically significant differences between the responses of respondents on the requirements of applying decision support systems due to the demographic variables (gender, age, qualification, and years of service). The study also concluded with a number of recommendations, the most important of which are the need to keep abreast of developments in the field of business, including the adoption of modern organizations on decision support systems, which represent the true value of organizations. It is a good for the university to rely entirely on decision support systems because it provides the management with the good information that the university needs. It is good for the university to increase attention and rely on modern systems because it works to develop performance and achieve the objectives of planning.

Keywords: *Decision Support Systems, Palestinian Higher Education Institutions, Palestinian Universities, Al-Aqsa University, Gaza Strip.*

1. NTRODUCTION

The usage and the application of Information Technology (IT) has reshaped business rules in business organizations. There is no aspect of business activity in business organizations that has not been affected by information technology. Information technology has become an essential part of business organization activity and competitive advantage. IT is no longer a tool for recording, but has become a central part of the process of managing business organizations through decision support systems (Yassin, 2006). Through the use of decision support systems that have contributed to improving the decision-making process of business organizations and through the development of decision models covering all areas of activity of business organizations and linking them with the database system and by providing the appropriate information for decision- business organizations, which support decision makers and policymakers in their decision making and are usually used as advocacy decision systems in the areas of long-term planning, strategic planning, and policy development in various types of business organizations (Al-Kurdi, 2003). The management of higher education institutions is a type of management. It is concerned with the management of an important stage of education necessary for the development of societies. The

university administration is not an integral part of the science of management in general. The accepted principles, functions and administrative concepts are one but their application differs from one organization to another.

University administration is characterized by being responsible for developing the university's education system. If there is no university administration that is highly competent in the mechanisms and techniques of the age and responsible for the development of society and confronting the variables, it will be an obstacle to any fundamental development. Therefore, a successful and creative university administration necessarily means a successful and developed society. (AL-Khatib and Maiaqah, 2006). In order to achieve the objectives of higher education, there must be an effective administrative system that seeks to coordinate human efforts and exploit the available resources. Achieving any efficient production system depends on successful and effective management that sets these goals in mind and directs the efforts and potentials to achieve them. The definition of the components of the environment and its potential is to have a conscious administrative leadership to ensure freedom of movement and experimentation from the integration of the perception of responsibility and authority conditional on efficiency and awareness (Sobh, 1990).

Decision-making is the most challenging role for managers, and given the tremendous sophistication of information systems and technologies used, they are used by senior management in business organizations to help speed decision making. Decision support systems are one of the most important computer-based information systems that were a harbinger of the evolution of information technology during the 1970s and 1980s as a medical development of the way computers are used. This system simply focuses on providing appropriate support to improve decision quality, models and software in an effective decision-making system. Due to the nature of its composition, it is very important, as it creates highly developed information technologies, leading to a competitive advantage for all competitors who do not use them. Organizations differ in their responsiveness to variables and their responsiveness to challenges, and their ability to deliver high quality services that are consistent with the expectations and aspirations of decision-makers. This therefore requires the building of technological systems capable of achieving leadership through attention to multiple and interrelated elements, and provide an environment in which universities and colleges can operate with the latest technology used. This study is intended to reveal the requirements of applying decision support systems in the Palestinian higher education institutions - a practical study on Al-Aqsa University in Gaza.

2. RESEARCH PROBLEM

The problem of research in the exceptional circumstances of the Gaza Strip is a siege and wars, which in turn has negatively affected the ability of the public universities and colleges in the Gaza Strip, which requires that there be a conscious leadership capable of harnessing all the possibilities to try to keep up and keep up with universities and international colleges and access to excellence in all areas.

Based on the above, the problem of research is determined by the following question: What are the requirements of the decision support systems in the Palestinian higher education institutions - an applied study on Al-Aqsa University in Gaza?

3. RESEARCH HYPOTHESES

H1: There are statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of respondents on the requirements of applying decision support systems due to the demographic variables (gender, age, qualification, and years of service).

It has the following sub-assumptions:

H1-1: There were statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of

respondents on the requirements of applying decision support systems due to the gender variable.

H1-2: There were statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of the respondents about the requirements of applying the decision support systems due to the variable (age).

H1-3: There were statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of respondents on the requirements of applying decision support systems due to the variable (scientific qualification).

H1-4: There are statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of the respondents about the requirements of applying the decision support systems due to the variable (years of service).

4. STUDY LIMITS AND SCOPE

Subject (Academic) limitations: The research was limited in its objective to study the requirements of applying decision support systems in the Palestinian higher education institutions - an applied study on Al-Aqsa University in Gaza.

Human Limitations: The study was conducted on academic and administrative staff working at Al-Aqsa University in Gaza.

Institutional Limit: The study was conducted on Palestinian higher education institutions.

Place Limitations: The study was conducted in the State of Palestine, and the study was limited to Al-Aqsa University in Gaza.

Temporal limitation: The study was conducted and preliminary data were collected about the Palestinian universities and statistical analysis were conducted during the year 2017.

5. RESEARCH OBJECTIVES

The research aims to study the requirements of applying decision support systems at Al-Aqsa University in Gaza by achieving the following sub-objectives:

1. To highlight the importance of using decision support systems in Palestinian higher education institutions.
2. Identify the requirements of applying different decision support systems in universities.
3. Identify the degree of interest of the university administration in implementing decision support systems.
4. To make recommendations on the requirements of implementing decision support systems in Palestinian higher education institutions and the appropriate proposals to enhance the level of its application and benefit from its advantages.

6. RESEARCH IMPORTANCE

The study gets is important from the importance of its subject. Therefore, the importance of the research can be determined in the following aspects:

1. It is hoped that the results of this study will benefit the administrative leaders of the Palestinian higher educational institutions in general by introducing them to the importance of applying decision support systems.
2. It is hoped that the results of this study will serve as a compass that guides universities to choose decision support systems and to rely on them to make their university decisions.
3. The theoretical importance of this study highlights the scientific enrichment that it adds to the concepts of decision support systems.
4. This study draws on its vitality and relative scarcity, as it is characterized by modernity and scientific and practical excellence, especially with regard to the handling of decision support systems in the educational sector.
5. Enables educational institutions to adapt and interact with rapid environmental changes and intense competition by focusing on decision support systems and achieving sustainable development.
6. Understand the vital role of decision support systems in achieving excellence in higher education institutions.
7. The attention of decision makers in higher educational institutions and universities to the need to know the requirements of decision support systems, in the light of the results of the study and use in the field of application.

7. RESEARCH TERMINOLOGY

Decision support systems: Liker believes that decision support systems are computerized interactive systems that help decision makers use data and models to solve semi-structural and non-structural problems, but in the manner of these managers and their personal style of problem solving. This is in line with the definition of (CASE PAKER): systems that equip managers with tools that help them solve semi-structural and non-structural problems, but in the way these managers and their personal style of problem solving (Yassin, 2006). There are those who point out that they represent an extension of management information systems that provide managers with the tools and data they need to make decisions, while management information systems provide the structural and routine information needed to make management decisions. Therefore, the field of decision support systems assists managers in solving untraditional and unstructured problems (Sabbagh, 2000).

The university is an institution of higher education and scientific research, which is attached to it from the secondary stage successfully to provide educational and

training programs in various disciplines according to the scientific theory and study at the university ranging from 4to 6 years (Abdel Hadi, 2011).

Higher education is a stage of education that follows the secondary stage. It is the top of the educational pyramid, which is required to pass the secondary certificate examinations in various fields. The university, community colleges and higher institutes are considered as institutions of higher education (Babeker et al., 2010).

8. PREVIOUS STUDIES

The study of (Al Shobaki and Abu Naser, 2017) aimed to identify the degree of use of the capabilities of decision-support systems in Palestinian institutional higher education, Aqsa University in Gaza - a case study. The study used analytical descriptive approach. The researchers used the questionnaire as a tool to collect the data. The researchers used stratified random sample and distributed (150) questioners to the study population and (126) were obtained back with rate of 84%. The study showed that the most important results are: that senior management supports the existence of decision support systems, there is approval by the respondents on the paragraphs of the use of the capabilities of decision support systems in general, and there are no statistically significant differences between the averages of the answers of respondents about the degree of use of decision support systems capabilities attributed to personal data. The study also concluded a series of recommendations including: increasing the adoption of the senior management decision support in their decision-making systems, and there is an increase in regulatory attention to the potential available to decision support systems directly to the senior management in the Palestinian universities in the Gaza Strip. There is an increased interest in the physical and technical possibilities available for the use of decision support systems. There is an increased interest in human potential available for the use of decision support systems. There is investment of information available to universities in building the capacities of integration techniques and other information technology capabilities. There is an empowerment of human resources in universities and participating in making decisions concerning the construction of the capabilities of information technology.

The study of (Abu Naser and Al Shobaki, 2016) aimed to identify the use of decision support systems as an entry point for operations of re-engineering in the Palestinian universities in Gaza Strip. The researchers used the method of questionnaire to collect data. The researchers used a sample stratified random method, were (350) questionnaires were distributed on the research sample and (312) questionnaires were collected back (89.1%). The study results showed that the most important ones are: there exists statistically significant impact at the level of significance ($\alpha \leq 0.05$) for physical requirements, human requirements, technical requirements, and regulatory requirements. The results showed also, the presence of

statistically significant differences between the averages of the study sample estimates on the use of decision support systems as an entry point for operations of re-engineering in the Palestinian universities in Gaza Strip due to the variable gender in favor of males. Furthermore, the results showed the existence of differences to the variable name of the university and each area of study for the benefit of the Islamic University then Al-Azhar University and then Al-Aqsa University. The study also concluded a series of recommendations including: encouraging Palestinian universities in Gaza Strip, which are planning to re-engineer Information Systems to start implementing the programs in the radical change as soon as possible. The need for the Palestinian universities in Gaza Strip, to develop the infrastructure for information technology in general, and decision support systems, in particular, when doing re-engineering of operations. There is a need for a separate unit of decision support systems and organizational structure to allow information to flow seamlessly between colleges and various departments and divisions makers. A need for investment of available information in building the capacities of integration techniques, in order to enable them to continue with the re-engineering of Information Systems.

The study of (Abu Naser and Al Shobaki, 2016) aimed to promote the use of decision support systems and Re-engineering of Operations and Business - Applied Study on the Palestinian universities in Gaza. This study was applied on Palestinian University in Gaza strip, Palestine. This research depends on decision support systems. Second dimension Re-engineering of Operations and Business was developed by the authors. The control sample was (500). Several statistical tools were used for data analysis and hypotheses testing, including reliability correlation using Cronbach's alpha, "ANOVA", Simple Linear Regression and Step Wise Regression. The overall findings of the current study suggest that no statistically significant impact on top management support to promote the use of decision support systems in the Re-engineering of Operations and Business at the universities in the Gaza Strip. The results highlighted that there is a statistically significant effect on the impact of decision support systems on user type to promote the use of decision support systems in Re-engineering of Operations and Business at Palestinian universities in the Gaza Strip. There are statistically significant differences between the mean study sample estimates of the impact of the decision support systems of Re-engineering of Operations and Business in Palestinian universities in Gaza due to the variable Gender in favor of males. The existence of differences for the age variable relative to the field of "senior management support for the use of decision support systems" by the respondents, aged (45-55 years) and (55) years and over. The presence of differences for the variable level of education relative to the field of "senior management support for the use of decision support" by the respondents, who hold master's degrees, and the existence of differences to the variable name of the university systems and that each area of study for the

benefit of the Islamic University, Al-Azhar University and Al-Aqsa University. The existence of differences for the variable years for service to the field of "senior management support for the use of decision support systems" by the respondents, who have service between (15-20) years and 21 years and over. The current study is unique by the virtue of its nature, scope and way of implied investigation, as it is the first study at Palestinian Universities explores the status of Enhancing the use of Decision Support Systems for Re-engineering of Operations and Business, and recommended increasing interest in decision support systems through continuity, keeping pace with technological means, and modern techniques.

The study of (Al Shobaki and Abu Naser, 2016) aimed to identify the decision support systems and their role on the strategic management development in the Universities- Case Study: Islamic University of Gaza. The descriptive approach was used where a questionnaire was developed and distributed to a stratified random sample. (230) questionnaires were distributed and (204) were returned with response rate (88.7%).

The most important findings of the study: The presence of a statistically significant positive correlation between the decision support systems and strategic management in the Islamic University in Gaza, and this shows that there is a role for decision support systems in strategic management development. The senior management is convinced of the importance of strategic management of the organization and this conviction paid to clearly understand the process of the development of strategic management and thus led to a commitment to this process to improve its performance. There is an impact on the strategic management of the capabilities available for the use of decision support systems, and the type of decision support systems used, while there is little effect of top management support for the use of decision support systems. Also, the results showed that there were no statistically significant differences between the averages of the respondents answers attributed to personal data.

The research also concluded a series of recommendations: The Islamic University of Gaza need to develop its infrastructure of decision support systems when it develops the strategic management. It should increase its interest in organizational potential through the necessity of a separate unit for decision support systems. As well as increased interest in the physical and technical capabilities available to decision support systems through continuity in keeping pace with technological means and techniques, continued support of senior management in the organization of strategic management for its positive role on decision support systems, that senior management will continue in the organization in creating a culture of strategic management, and it should encourage employees to participate in the strategic management process.

The study of (Kashada and others, 2016) aimed at discussing and evaluating the impact of user awareness of the successful adoption of this technology in developing

countries. The sample was distributed among many developing countries in the world. The results confirm that user awareness is low and a major contributor to the low rate of adoption of decision support systems in developing countries.

The study of (Abu Tim, 2015) which aimed to identify the support decisions systems and their relationship with the effective administrative decisions in the Palestinian universities in the Gaza Strip (Islamic University, Al-Azhar University, Al-Aqsa University). The results of the study: perception of senior management of the importance of the use of decision support systems, material resources fit with business requirements, universities are attracting crews and qualified personnel and specialists with competence and experience, understands these professionals working from these program's needs, the Palestinian universities enjoy organizational structure and clearly supports decision support systems, ease of procedures and communication between the different departments, there are statistically significant about the reality of decision support in the Palestinian universities systems in the Gaza Strip due to gender in favor of male differences, and the existence of differences on the reality of decision-support systems are due blamed Seen years of service, from the point of view of individuals who have years of service ranging from 15 to less than 20 years.

The study of (Malkawi, 2014) aimed at identifying decision support systems and business intelligence systems and their impact on improving the decision-making process in Jordanian hospitals. The results of the study: Decision support systems and business intelligence are highly available at the King Abdullah Founding Hospital. The level of decision-making was also high. A rather high positive correlation was found between decision support systems and business intelligence with the decision-making process. The impact of decision support systems and business intelligence on the decision-making process at all stages (intelligence, design, selection and implementation). The hospital gives the process of data management and decision execution very important. There is a statistically significant effect at the level ($\alpha \leq 0.05$) of decision support systems and business intelligence on the decision-making process.

The study of (Al Awadi and Al Awadi, 2013), which aims to test the effect of a variety of individual, functional, and organizational variables on the intentions of managers in using decision support systems to determine the possibility of relying on these variables in explaining the differences in intentions of use. The results of the study showed that there is an impact of different managers from the perspective of (administrative knowledge, trends towards the use of quantitative methods, previous use and administrative level) in their intentions in the use of decision support systems.

The study of (Al-Hayali and Al-Jarjari, 2012). The aim of the study was to identify the tremendous development in the field of information technology, which led to the provision of many systems, tools and means aimed at

supporting managers in their decision-making of various types. The results of the study: The need to provide all the requirements for the implementation of the decision support system because of its importance in the decisions taken by managers in the process of continuous improvement of work in the organization.

9. THEORETICAL FRAMEWORK OF THE STUDY

Concept of Decision Support Systems:

The idea of the decision support system, which was an extension of the MIS in the early 1970s, emerged because of the failure of MIS to provide the information necessary for unstructured decision-making. (Kenneth & Jane, 2006) define a decision support system as a computer system, combining data, complex analytical models, and dialogue software to support programmed and semi-programmed decision-making.

Information and its systems play an important role in the formulation of decisions and ensure that they meet the requirements of the decision-making process. Information systems are developed to provide data in order to support the provision of the required data in order to support and manage the functions of the project's programs to excellence, which provides accuracy and timeliness, integration and concise presentation of the facts to be closely related to the problem which is directly related to the resolution.

Computer plays an important role in the process of rationalization of decisions through software, mathematical and accounting processes which can be carried out quickly and accurately and have been associated with several assistance systems, including decision-support systems and can be defined as systems that rely on the computer in order to provide help to make decisions concerning the semi Structural tasks, by combining data and quantitative models base elements (the statistical, mathematical, operations research) in addition to taking the point of view of the decision maker. Researchers differed in defining a specific definition of decision support systems. We rarely find an information system that does not have a role to play in supporting and rationalizing the decision making process. The main reason is to make the decision as the essence of the administrative process and then the type of problem plays a role in determining the method used to solve it.

Characteristics of Decision Support Systems:

The most important characteristics of decision support systems can be summarized as follows (Al-Tai, 2005):

1. The system provides support to the manager. The system cannot replace the manager and cannot be a substitute for the decision maker. Rather, it focuses on the non-routine parts of the problem in order to gain support in the decision-making process.

2. The decision support system and computer tools must be distinguished from the software and hardware that make this system possible. The decision support system is to put these programs and devices into practice.
3. The decision-making support system does not enrich the use of judgment and personal judgment, since the entire decision-making process cannot be subject to quantitative analysis.

4. Effective decision is taken through interaction between the decision-maker and the regime, and this is accompanied by dialogue between them.

Decision types and types of systems:

The following diagram shows the types of systems used when integrating decision types with decision-making levels:

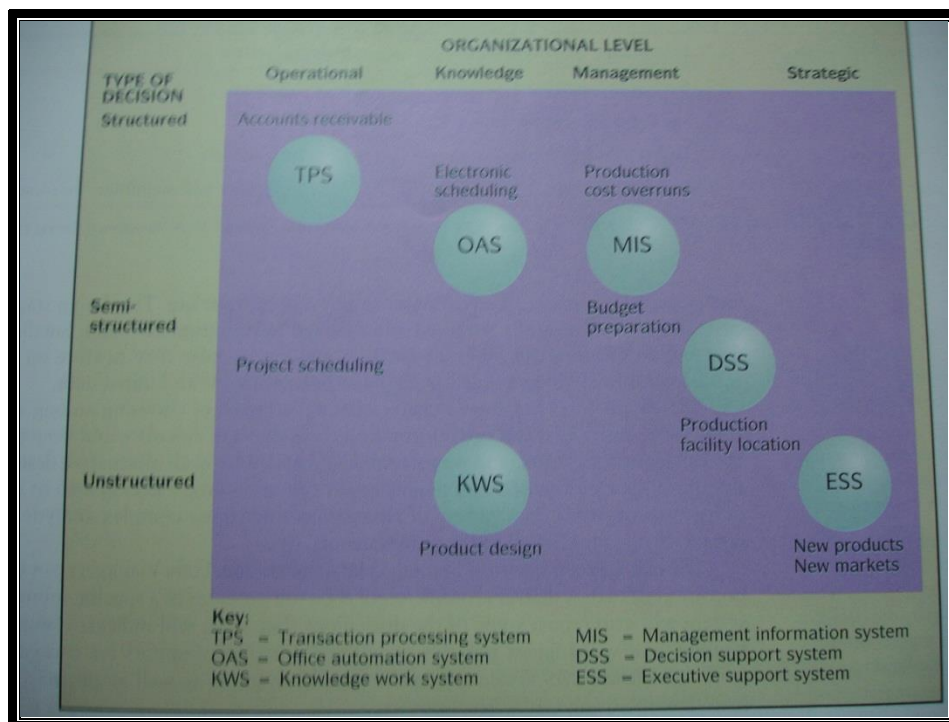


Figure 1: Types of information systems used in different types of decisions and different administrative levels

Source: (Kenneth C. & Jane P., 2006)

In general, individuals at the operational level face fully programmed problems. On the contrary, strategic planners address un-programmed problems. Knowledge-level workers also face un-programmed decisions. However, each level of the organization contains both programmed and un-programmed problems.

In the past, most of the success of information systems was due to dealing with programmed, operational and administrative decisions. Now most of the existing applications deal with administrative, cognitive and strategic planning areas where problems are either half programmed or not fully programmed.

Areas of application of decision support systems

There are several applications for decision support systems in areas requiring non-structural and semi-structural decisions, as well as structural decision support systems whose applications are widely deployed to support first-line management activities and processes (Yassin, 2006).

We may also find important applications for decision support systems under different labels that do not have the

word support or a word of decision, as in GIS, for example. However, they are patterns or generations of decision support systems because the essence of their work and the nature of their objectives are limited to providing effective support for semi-structural and non-structural decisions. Examples of decision support systems are enterprise forecasting and planning, buying patterns analysis, investment evaluation, promotion selection, and other patterns designed to achieve specific career decisions, such as advertising strategy development.

Al-Aqsa University

Al-Aqsa University is a Palestinian governmental higher education institution founded in 1955. In 1991, it was developed into a faculty known as the State College of Education. Since then, the college has been growing gradually in its educational plans, its scientific departments, its professors and students, Al-Aqsa University was established in 2000-2001, and the university became a member of the Union of Arab Universities and the Palestinian Higher Education Council in 2003. It now

includes seven scientific faculties: Arts, Science, Education, Media, Fine Arts, Physical Education and Administrative and Financial Sciences.

10. SOCIETY AND STUDY SAMPLE:

The study population consists of staff working at Al-Aqsa University in Gaza. The researchers used the random

sample method, where 150 questionnaires were distributed to the study community and 126 responses were obtained with a recovery rate of 84%. The following is the distribution of the sample members according to demographic variables:

Table 1: Distribution of the Study Population by Demographic Variables (N = 126)

| Demographic variables | | Count | Percentage % |
|-----------------------|---------------------------------|-------|--------------|
| Gender | Male | 83 | 65.9 |
| | Female | 43 | 34.1 |
| Age | Less than 25 years | 25 | 19.8 |
| | 25 - less than 35 years | 54 | 42.9 |
| | 35 years - less than 45 years | 33 | 26.2 |
| | 45 - Less than 55 years | 11 | 8.7 |
| | 55 years and over | 3 | 2.4 |
| Qualification | Public secondary school or less | 9 | 7.1 |
| | Diploma | 8 | 6.3 |
| | B.S. | 84 | 66.7 |
| | M.S. | 10 | 7.9 |
| | Ph.D. | 15 | 11.9 |
| Years of Service | Less than 5 years | 36 | 28.6 |
| | 5 years - less than 10 years | 52 | 41.3 |
| | 10 years - less than 15 years | 23 | 18.3 |
| | 15 years - 20 years | 8 | 6.3 |
| | 21 years and over | 7 | 5.6 |

Study tool:

A questionnaire was prepared on the "Requirements for Applying Decision Support Systems at Al-Aqsa University in Gaza", where the five-dimensional Likert scale was used to measure respondents' responses to the questionnaire sections according to Table 2.

Table 2: the degrees of the five-dimensional Likert scale

| Response | Strongly Agree | Agree | Unknown | Disagree | Strongly disagree |
|----------|----------------|-------|---------|----------|-------------------|
| Degree | 5 | 4 | 3 | 2 | 1 |

Validity of the study tool:

The validity of the questionnaire was confirmed by presenting it to a group of arbitrators and experts in the re-engineering of administrative processes in the Palestinian universities. Their observations were taken into consideration. The validity of the questionnaire was also verified through internal consistency and structural honesty.

Stability of the questionnaire:

One of the most common tests used to measure stability was the alpha-cronbach coefficient. It was found that its

value for the questionnaire as a whole was 0.954. This value is high and reassuring for the stability of the study instrument.

It is concluded from the results of validity and consistency that the questionnaire is valid in measuring what has been measured and is very stable, which qualifies it to be an appropriate measuring instrument for this study and can be applied with confidence.

Normality Distribution Test:

The Kolmogorov-Smirnov Test (K-S) was used to test whether the data follow the normal distribution or not, where the test value is equal to (1.056) and the probability value (Sig) is equal to (0.215) which is greater than the significance level of 0.05. Natural distribution where the tests were used is to analyze the data and test the hypotheses of the study.

Statistical tools used:

The following statistical methods were used:

1. Percentages and frequencies.
2. Arithmetic mean, relative and standard deviation.
3. Alpha cronbach test.
4. Colmagorov-Samranov K-S test.
5. T Test in one sample case.
6. T Test in case of two independent samples.

7. ANOVA.

11. ANALYSIS OF THE DATA AND TESTING HYPOTHESES OF THE STUDY

Analysis of the question paragraphs:

The T test was used to determine whether the average response rate reached the intermediate approval level of 3 or not, as in the following table:

Table 3: arithmetical mean, standard deviation and test value t for all paragraphs of the questionnaire

| S.N | Field | Arithmetic mean | standard deviation | Relative arithmetic mean | Test t value | Probability Value (Sig) | Ranking |
|---|---|-----------------|--------------------|--------------------------|--------------|-------------------------|---------|
| 1. | Senior management supports the existence of decision support systems. | 3.32 | 1.06 | 66.45 | 3.40 | 0.000 | 1 |
| 2. | Senior management relies on decision support systems to make decisions. | 3.16 | 1.03 | 63.20 | 1.73 | 0.043 | 3 |
| 3. | Senior management encourages employees to use decision support systems. | 3.16 | 1.09 | 63.20 | 1.64 | 0.051 | 3 |
| 4. | Senior management provides the hardware and software necessary to use decision support systems | 3.03 | 1.04 | 60.65 | 0.35 | 0.365 | 7 |
| 5. | Senior management is concerned with decision support systems as part of the overall organizational development process. | 3.17 | 0.95 | 63.44 | 2.00 | 0.024 | 2 |
| 6. | Senior management is concerned with diagnosing problems that hinder the performance of decision support systems. | 3.12 | 1.01 | 62.42 | 1.34 | 0.092 | 5 |
| 7. | Senior management is working to overcome obstacles to the development of decision support systems. | 3.03 | 0.93 | 60.64 | 0.38 | 0.351 | 8 |
| 8. | Senior management provides the necessary staff to implement the decision support systems process. | 3.04 | 1.10 | 60.80 | 0.41 | 0.342 | 6 |
| Support senior management to use decision support systems | | 3.13 | 0.91 | 62.60 | 1.64 | 0.051 | |
| 1. | There is a computer for each administrator at the university. | 3.89 | 1.14 | 77.78 | 8.75 | 0.000 | 1 |
| 2. | The University provides the means to enter data suitable for business needs. | 3.85 | 0.95 | 76.94 | 9.97 | 0.000 | 2 |
| 3. | Output devices (such as printers) are compatible with business requirements. | 3.56 | 1.08 | 71.27 | 5.83 | 0.000 | 6 |
| 4. | The computer network in the university is modern and suitable for business needs. | 3.65 | 1.03 | 73.06 | 7.07 | 0.000 | 4 |
| 5. | Maintenance occurs quickly when hardware or network crashes occur at the university. | 3.38 | 1.18 | 67.58 | 3.58 | 0.000 | 15 |
| 6. | There is a technical department responsible for decision support systems. | 3.34 | 1.09 | 66.88 | 3.54 | 0.000 | 16 |
| 7. | The technical department is staffed by highly competent IT professionals. | 3.48 | 1.09 | 69.52 | 4.92 | 0.000 | 11 |
| 8. | The technical department deals with the problems and queries faced by users of the programs and the network. | 3.55 | 1.06 | 70.95 | 5.78 | 0.000 | 8 |
| 9. | Contact the technical department responsible for the system and software directly. | 3.71 | 0.98 | 74.13 | 8.09 | 0.000 | 3 |
| 10. | Employees in the relevant technical department understand the needs of the employees of these systems programs. | 3.56 | 0.98 | 71.27 | 6.43 | 0.000 | 6 |

| | | | | | | | |
|--|--|------|------|-------|-----------|-------|----|
| 11. | There are specialized programs for decision support systems at the university. | 3.27 | 1.00 | 65.44 | 3.03 | 0.001 | 19 |
| 12. | Programs used at the university assist employees in the decision-making process. | 3.40 | 0.96 | 68.10 | 4.71 | 0.000 | 14 |
| 13. | The software used is modern, easy to learn and suited to business requirements. | 3.60 | 0.90 | 72.06 | 7.49 | 0.000 | 5 |
| 14. | The effectiveness of programs is assessed by users, which helps in the performance progress. | 3.30 | 0.97 | 66.03 | 3.48 | 0.000 | 18 |
| 15. | The programs used are compatible with the devices that are being used. | 3.53 | 0.97 | 70.63 | 6.16 | 0.000 | 9 |
| 16. | The programs used are characterized by the ability to exchange information flexibly between users of the system. | 3.47 | 0.91 | 69.44 | 5.79 | 0.000 | 12 |
| 17. | The software used enables more than one recipient to connect simultaneously. | 3.53 | 0.89 | 70.56 | 6.60 | 0.000 | 10 |
| 18. | The information available is compatible with the decision support systems used to meet business needs. | 3.45 | 0.91 | 68.94 | 5.47 | 0.000 | 13 |
| 19. | Management is concerned with the views and suggestions of staff on the use of decision support systems. | 2.94 | 1.10 | 58.89 | - 0.56 | 0.287 | 22 |
| 20. | Management provides training programs on the use of decision support systems. | 2.96 | 0.95 | 59.21 | - 0.47 | 0.320 | 21 |
| 21. | The organizational structure allows easy flow of information. | 3.20 | 0.94 | 64.00 | 2.37 | 0.010 | 20 |
| 22. | Decision support systems facilitate the use of administrative communication between departments. | 3.30 | 0.99 | 66.08 | 3.42 | 0.000 | 17 |
| The potential for the use of decision support systems | | 3.45 | 0.91 | 69.03 | 4.92 | 0.000 | |
| 1. | The software used to perform repeated operations. | 3.51 | 0.94 | 70.16 | 6.09 | 0.000 | 2 |
| 2. | The software used has the ability to retrieve information quickly. | 3.51 | 0.97 | 70.16 | 5.88 | 0.000 | 2 |
| 3. | The programs used have the ability to prepare special reports. | 3.55 | 0.88 | 70.95 | 6.97 | 0.000 | 1 |
| 4. | The programs used provide periodic reports covering the work aspects. | 3.44 | 0.96 | 68.80 | 5.11 | 0.000 | 4 |
| 5. | The software used is modern. | 3.43 | 0.99 | 68.57 | 4.85 | 0.000 | 5 |
| Type of decision support systems used | | 3.49 | 0.87 | 69.73 | 6.09 | 0.000 | |
| Requirements for the application of decision support systems in genera | | 3.39 | 0.62 | 67.71 | 7.00 | 0.000 | |

It is clear from the table 3 that the arithmetic mean for all the requirements of the applying decision support systems is 3.39, the relative arithmetic average is 67.71%, the test value is 7.00, and the probability value (Sig) is 0.000 of the requirements for the implementation of decision support systems in general. The approval for "support of senior management for the use of decision support systems" reached 62.60%, while the approval for "the available resources for the use of decision support systems" reached 69.03%, "Type of decision support systems used" is 69.73%. As the senior management in the Palestinian universities in general and Al-Aqsa University in particular, take into account the development of universities and

access to global competition and take our universities a place among advanced regional and international universities.

This is consistent with the study of (Abu Tim, 2015), which confirmed the recognition by senior management of the importance of using decision support systems, that material resources are in line with the requirements of work, and (Malkawi, 2014) King Abdullah the founder. The level of decision-making was also high. (Al-Hayali and Al-Jarjari, 2012), which stressed the need to provide all the requirements for the implementation of the decision support system because of its importance in the decisions

taken by managers in the field of continuous improvement of work in the organization.

With the study of (Al Awadi and Al Awadi, 2013), which confirmed the impact of differing managers from the perspective of (administrative knowledge, trends towards use of quantitative methods, previous use, and administrative level) in their intentions to use decision support systems.

12. STUDY HYPOTHESIS TEST

Test of H1: There are statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of respondents on the requirements of applying decision support systems due to the demographic variables (gender, age, qualification, and years of service).

It has the following sub-assumptions:

Test of H1-1: There were statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of respondents on the requirements of applying decision support systems due to the gender variable.

To test this hypothesis, the T test was used for two independent samples and the results were as shown in the following table.

Table 4: Results of the study hypothesis test

| Demographic variables | Name of test | Test value | Probability Value (.Sig) |
|-----------------------|----------------------------|------------|--------------------------|
| Gender | T test for two independent | 0.134 | 0.894 |

The results in the table 4 show that the probability value (Sig) is greater than the significance level of ($\alpha \leq 0.05$) for the gender variable and thus it can be concluded that there are no statistically significant differences between the responses of the respondents about the requirements of applying decision support systems due to Variable (gender).

This is consistent with the study of both (Abu Naser, and others, 2017), study (Al Shobaki, and others, 2017 ;Abu Amuna, and others, 2017; Al hila, and others, 2017; Al Shobaki, & Abu Naser, 2017; Al Shobaki, & Abu Naser, 2016; Ammar, and others, 2017; Bader, and others, 2017; Naser and other 2016; Naser & Shobaki, 2017; Naser, & Shobaki, 2016), who confirmed that there are no statistically significant differences between the averages of the respondents answers about the application of support systems requirements A decision attributed to the variable (gender).

This is different with the study of (Abu Tim, 2015), which confirmed that there are differences of statistical significance on the reality of decision support systems in

the Palestinian universities in the Gaza Strip due to the gender variable in favor of males.

Test of H1-2: There were statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of the respondents about the requirements of applying the decision support systems due to the variable (age).

To test this hypothesis, the "mono-variance" test was used, and the results are shown in the following table.

Table 5: Results of the study hypothesis test

| Demographic variables | Name of test | Test value | Probability Value (.Sig) |
|-----------------------|------------------|------------|--------------------------|
| Age | Single variation | 1.262 | 0.289 |

The results in the table 5 show that the probability value (Sig) is greater than the ($\alpha \leq 0.05$) level of the variable (age).

This varies with the study of (Abu Tim, 2015) and study (Abu Naser and others, 2017), study (Al Shobaki, and others, 2017), (Abu Amuna, and others, 2017), (Al hila, and others, 2017), (Al Shobaki, & Abu Naser, 2016), (Ammar, and others, 2017), (Badwan, and others, 2017), (El Talla, and others, 2017), (Kassab, and others, 2017), (Naser, & Al Shobaki, 2016), (Naser, and others, 2016), who They stressed that there is no statistically significant difference between the averages of the respondents answers about the requirements of the differences applied decision support systems due to the variable (age).

Test of H1-3: There were statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of respondents on the requirements of applying decision support systems due to the variable (scientific qualification).

To test this hypothesis, the one-way analysis of variance was used, and the results are shown in the following table.

Table 6: Results of the study hypothesis test

| Demographic variables | Name of test | Test value | Probability Value (.Sig) |
|--------------------------|------------------|------------|--------------------------|
| scientific qualification | Single variation | 2.172 | 0.076 |

The results in the table 6 show that the probability value (Sig) is greater than the significance level of ($\alpha \leq 0.05$) for the variable (scientific qualification). Thus it can be concluded that there are no statistically significant differences between the responses of the respondents about the requirements of applying the decision support systems due to the variable (scientific qualification).

This is consistent with the study of both (Abu Naser, and others, 2017), study (Al Shobaki, and others, 2017), (Abu Amuna, and others, 2017), (Al hila, and others, 2017), (Al Shobaki, & Abu Naser, 2017), (Al Shobaki, & Abu Naser, 2016), (Ammar, and others, 2017), (Bader, and others, 2017), (Naser & Shobaki, 2017, (Naser, & Shobaki, 2016), (Naser, and others, 2016), who confirmed that there are no statistically significant differences between the averages of the respondents answers about the requirements of applying decision support systems due to the variable (educational qualification).

Test of H1-4: There are statistically significant differences at the level of ($\alpha \leq 0.05$) between the mean responses of the respondents about the requirements of applying the decision support systems due to the variable (years of service).

To test this hypothesis, the one-way analysis of variance was used, and the results are shown in the following table.

Table 7: Results of the study hypothesis test

| Demographic variables | Name of test | Test value | Probability Value (.Sig) |
|-----------------------|------------------|------------|--------------------------|
| years of service | Single variation | 1.603 | 0.178 |

The results in the table 7 show that the probability value (Sig) is greater than the significance level of ($\alpha \leq 0.05$) for the variable (years of service). Thus it can be concluded that there are no statistically significant differences between respondents' due to variable (years of service).

This is different from the study of (Abu Naser and others (2017), (Abu Shakaki and others (2017), (Naser and others, 2016), (Al Shobaki, and others, 2017), (Ammar, and others), (Naser & Al-Shobaki, 2017), (Badwan, and others, 2017), (El Talla, and others, 2017) (Naser and others 2016), (Naser, and Shobaki, 2016), They stressed the existence of differences on the reality of decision support systems due to the variable years of service from the point of view For individuals whose years of service ranged from (15) to less than (20) years.

13. RESEARCH RESULTS

1. The study sample highly agree on the importance of "organizational component" with relative weight (70.98%), "human component" with moderate agreement and relative weight (67.06%), "cognitive component" with moderate agreement and relative weight (66.88%), "community component" with moderate agreement and relative weight (68.26%).
2. There were no statistically significant differences between the responses of respondents on the requirements of applying decision support systems due to gender variable.

3. There are no statistically significant differences between the responses of respondents on the requirements of applying decision support systems due to variable (age).
4. There are no statistically significant differences between the responses of respondents on the requirements of applying decision support systems due to the variable (scientific qualification).
5. There are no statistically significant differences between the responses of the respondents on the requirements of applying the decision support systems due to variable (years of service).

14. RESEARCH RECOMMENDATIONS

Based on the previous results, the researcher proposes a number of recommendations, the most important of which are:

- It is necessary to keep pace with developments in business.
- The management of institutions of higher education for people with special needs should be given special attention to environmental and internal variables and their impact on higher education institutions and their future.
- It is good for the university to rely entirely on decision support systems because it provides the administration with the good information that the university needs.
- It is necessary for the university to take care of the decision support systems because of the time and effort it provides and the decision to make a certain percentage
- It is essential for the university administration to pay attention to systems and technologies to increase the abilities and skills of the staff
- It is good for the university to increase attention and rely on modern systems because it works to develop performance and achieve the objectives of planning.

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