

Exploring the Relationship between MIS and Decision-Making Process at Al-Hussein Bin Talal University

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ABSTRACT

This study aims to identify the role of management information systems (MIS) towards decision-making in Al-Hussein Bin Talal University (AHU). To accomplish the objective of the study, the following hypotheses were formulated: There are NO statistically significant differences between MIS and the effectiveness of the decision-making process (DMP) at AHU. There are NO statistically significant differences in the attitudes of employees at AHU on the role of MIS in the effectiveness of (DMP) due to their demographic variables (gender, age, marital status, job experience, and scientific qualification). The study followed the analytical descriptive approach, a questionnaire was designed to collect the data, it was distributed to a sample of (180) managerial and academic staff of decision-makers at AHU with a recovery rate of (89%). The most important results are: There is a statistically significant relationship between MIS and the decision-making process effectiveness in AHU, The results also showed there are statistically significant differences between the role of management information systems in making decisions due to the variables (age, job experience, and scientific qualification). While there are no statistically significant differences of (gender and marital status) variables, the study recommend the need to increase the support of senior management at AHU for users of information systems, the need to provide training and development programs for them and the need to increase attention to MIS through regular maintenance, continuous development, protection of information, and building an integrated electronic system at the level of all Jordanian universities that guarantees participation as well as safe and effective information exchange between them.

Keywords— Al-Hussein Bin Talal University, Decision Support System, Information Systems, Decision-Making

I. INTRODUCTION

The Management Information System (MIS) is primarily concerned with the process of collecting, storing, manipulating, organizing and transmitting related information to support the management processes in any organization [1][2]. MIS works as an integrated system to

provide information for managers to support the operations, management and decision-making functions of the organization, and to improve the decision-making process (DMP) on issues affecting the organization in relation to human and material resources [3].

Organizations in general and universities in particular, require the information to be appropriate, and comprehensive to formulate their goals. Successful organizations should collect accurate data that would lead to high quality in the successful and effective DMP, it is essential to provide accurate, timely and relevant information to decision-makers, and we need to an MIS that translates this information into meaningful and useful forms, as well as, to provide managers with appropriate reports for use in providing accurate managerial decisions [4].

University administrations at all levels and in harmony with the managerial pyramid make decisions. These decisions may ultimately affect university students and employees. However, all decisions have some impact, whether small or significant, on the performance of the student and the academic and administrative staff alike. Therefore, university departments must develop decision-making skills because they need to make many decisions that will affect the university [5].

In view of the importance of MIS, and to know the extent of the Jordanian universities' dependence on these systems; and their effect on the DMP by decision-makers in Jordanian universities, the idea of this study has emerged, which is expected to provide a better and more clear understanding about the adoption of technology and highlight the role of MIS in the DMP and overcoming administrative problems in Jordanian universities; and then identifying the weaknesses of these systems in order to highlight them and offer ways to address them in the future[6].

II. THE STUDY PROBLEM

The problem of study can be formulated through the following questions:

- What is the role of MIS in improving the efficiency and effectiveness of decision-making at Al Hussein Bin Talal University in Jordan?
- Are the outputs provided by MIS going to meet the criteria (appropriateness, accuracy, inclusiveness, and timeliness) to be relied upon in the DMP?

III. THE STUDY HYPOTHESES

H0 - There are NO statistically significant differences between MIS and the effectiveness of DMP at AHU.

H1 - There are NO statistically significant differences in the attitudes of employees at AHU on the role of MIS in the effectiveness of the DMP due to their demographic variables (gender, age, marital status, job experience, and scientific qualification).

IV. THE STUDY OBJECTIVES

- This study aims to identify the impact of MIS on the effectiveness of DMP at AHU
- Informing managers and decision-makers at AHU about the possibilities offered by MIS in decision-making using modern technologies, studying the impact of their use and the employees' reactions to these developments and to find out the usefulness of the information in preserving the university resources and to see how well are the employees keeping up with these developments.
- To stand on the impact of the demographic variables (gender, age, marital status, job experience, and scientific qualification) in the implementation of MIS in the effectiveness of the DMP in AHU.
- To identify the essential phases of DMP.
- To highlight the importance of the MIS in AHU in particular and the Jordanian universities in general.

V. THE STUDY IMPORTANCE

The study importance lies in the following matters:

- Emphasize the importance of the application of information systems commensurate with the various administrative burdens.
- This study is an invitation to the development of MIS in universities, as these systems have a positive role in enhancing the efficiency of individuals and organizations, and highlight the importance that universities attach to these systems as an efficient and effective decision-making tool.

- Demonstrate the importance of the use of MIS in contributing to improving the quality, efficiency and speed of decision-making by the university administration, and presentation of the strengths and weaknesses resulting from their use.

VI. THE STUDY SAMPLE

The current study has adopted two main variables, as shown in Figure (1), which included the independent variable is MIS and the dependent variable represents the Decision-making Process in AHU.

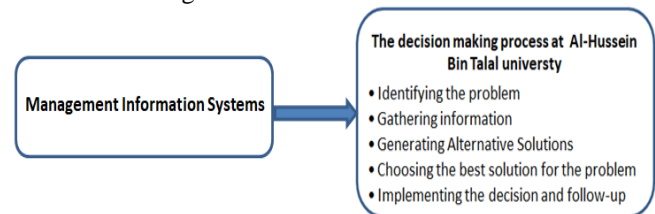


Figure 1: Study Model

Source: Prepared by the researchers, 2018.

VII. STUDY LIMITS AND SCOPE

The present research was applied within the following limits:

- Place Limitations: The research was conducted on AHU / Jordan.
- Time limitation: The research, preliminary data collection and statistical analysis were carried out during the period from (2015 to 2019).
- Human Limitations: The research was carried out on all administrative and academics staff in a managerial positions at AHU.

VIII. PREVIOUS STUDIES

Study of Al-Hasani [7]: The study aims to identify the extent of the impact between Decision Support Systems , Information Quality and Effective Decision-Making a field study in the ministry of civil service in the Sultanate of Oman, by knowing the relationship between the dimensions of information quality and the dimensions of the effectiveness of DMP, the results were as follows: There is a statistically significant correlation between the dimensions of information quality (the formal dimension, the temporal dimension, and after the content) and the dimensions of the effectiveness of decision-making (ease of implementing the decision, the quality of the decision, acceptance of the decision, and the time of decision-making) in the Ministry of Civil Service in the Sultanate of Oman from the point of view of the one who takes it the

decision. There is a statistically significant effect of the quality of information on the effectiveness of decision-making from the viewpoint of decision-makers in the Ministry of Civil Service in the Sultanate of Oman. It also shows that the decision support systems affect the effectiveness of decision-making from the point of view of decision-makers in the Ministry of Civil Service in the Sultanate of Oman.

Study of Al-Nazhari [8]: This study aims to reach the extent of the efficiency of information systems in Jordanian commercial banks and to know the extent to which these systems contribute to reaching more rational decisions. The researchers have reached the following results: 1- There is a positive relationship between information systems and decision-making effectiveness in Jordanian commercial banks, but this relationship is not statistically significant. 2- It is not necessary that the banks in which the information systems are located are more efficient than others on the basis of higher profitability ratios, but the efficiency of the system in them is reflected in the quality and speed of the service they provide to the public. 3- The results of the personal interviews conducted by the researchers with the stakeholders in the information systems, and their beneficiaries, showed that the introduction of advanced information systems led to the diversification of banking activities and the creation of new jobs and led to giving more delegation to lower managerial levels, as additional information became available for these levels and, at the same time, it helped increase the capabilities of senior management to supervise the work of other levels, and to intervene where necessary.

Study of Al-Mahasna [9]: This study aims to analyze the impact of the efficiency of information systems on the effectiveness of decision-making using modern technologies in the Jordanian Customs Department, This was done by taking a sample of (230) employees from the study community, and the study reaches the following: The respondents' perceptions of the efficiency of the information systems are high. The respondents' perceptions of the efficiency of the DMP are high. There is an important statistically significant effect of the efficiency of MIS on the effectiveness of the DMP. The study concludes that an atmosphere of effective participation must be created between the workers on these programs and their users in order to develop and follow them.

Study of Sabry [10]: The study aims to demonstrate the role of MIS by supporting decisions regarding the quality of higher education in Egyptian public and private universities (subject to study). The researchers reach a set of results, the most important of which are: 1- There is a direct relationship between all dimensions of MIS except for the dimension of obstacles to MIS that have an inverse relationship. 2- There is a direct relationship between the stages of decision support in university

education institutions (the diagnostic stage, identifying the quality gap, the phase of offering an alternative to disposal, the stage of testing, the stage of implementation and use) and the quality of university education services in Egyptian public and private universities except for the stage of setting a decision implementation plan with Inverse relationship. 3- There is a positive relationship between the actual practices of MIS in Egyptian universities and the axes of university education quality (the axis of customer benefits, the axis of quality management from planning, organizing and defining organizational roles and guidance, encouraging and motivating workers, and the axis of quality control) except for the two dimensions; the importance of MIS and the obstacles to MIS.

Study of Essa [11]: The study aims to know the role of MIS in developing government administrative performance in the government of West Darfur State, the problem of the study lies in the need for a system that helps in accomplishing tasks accurately, easily and conveniently, the results of the study are: 1- There is awareness among senior management of the importance of using MIS in developing administrative performance in West Darfur State. 2- Availability of material and technical capabilities to use MIS in West Darfur state, with human capabilities. 3- Information systems contribute to facilitating communications by transferring information in all branches of the institution and providing correct and accurate information about the organization's resources for coordination between them.

Study of Hamed [12]: The study aims to identify the extent to which MIS contribute to raising the efficiency of the managerial DMP in the Bank of Khartoum in Sudan, and to study the relationship between the information system and DMP.. The most important findings of the study are: 1- There is a statistically significant effect of the efficiency of MIS (material requirements) in determining the problem, while the results do not indicate that (human and technical requirements and administrative requirements) have a role in determining the problem. 2- There is a statistically significant effect of the efficiency of MIS (human requirements, and administrative requirements) in monitoring and follow-up, while the results do not indicate that (material requirements and technical requirements) have an impact on monitoring and follow-up. 3- Appropriateness of the quality and quantity of information needed to make the decision related to the problem in which the decision is to be taken, as the bank's MIS provides a database that helps in identifying and evaluating appropriate alternatives to increase the effectiveness of the DMP, thus comparing its current business with its previous results and anticipating future decisions.

Study of Jaradat [13]: The study aims to identify the reality of the use of MIS in the quality of managerial

decision-making in the Housing Bank for Trade and Finance in Jordan, and to discover the difficulties and problems affecting the DMP in the bank. The study concludes a number of results, the most important of which are; 1-. There is a positive relationship between MIS and the managerial DMP, where there is a significant impact of MIS on the quality of managerial decision-making in terms of time, formality, and content. 2- Having a website for banks on the Internet that facilitates the completion of work in various fields. 3- Efficiency and effectiveness of MIS in the Housing Bank for Trade and Finance through the presence of the Systems Department.

Study of Al-Hazaimeh [14] The study aims at shedding light on the role of the information system in the effectiveness of decision-making in government institutions in the Irbid governorate in Jordan, as well as to inform managers and decision-makers about the possibilities of information in the field of decision-making, and to know the extent of the usefulness of this information in preserving the economic resources of The Jordanian government institutions. The study concludes a number of results: 1- There is a conviction among workers that information systems and technologies have an important role in the DMP in institutions and government departments in Irbid Governorate in Jordan. 2- There is a statistically significant relationship between methods of gathering information and the speed of decision-making in public institutions in the Governorate of Irbid, and between the appropriateness of the information and the effectiveness of managerial decision-making. 3- The study revealed that the use of information systems to provide managers and decision-makers with the correct and timely information is of high value to the organization and is useful in the DMP.

Study of Abu Sabt [15]: The study aims to show the relationship of MIS in DMP among decision-makers in Palestinian universities in the Gaza Strip. The study focuses on identifying the extent of the differences between the elements of MIS in universities (equipment, software, communications and databases, the organizational level of the Information Systems Department and the competence of individuals), and focused on measuring the role of quality and accuracy of the information and the use of MIS in decision-making. The study concluded a set of results: 1- There are clear differences in the components of MIS in each of the Palestinian universities in Gaza and they were in the interest of the Islamic University. There is a strong relationship between the organizational level of the Information Systems Department and the quality and accuracy of administrative information in DMP in Palestinian universities in the Gaza Strip. The study demonstrates that there is a direct relationship between the quality of information (accuracy, timeliness, appropriate timing, and quantity) and the use of information systems in DMP, as the study also shows that current information

systems do not rise to expert systems and it does not give good solutions to problems.

IX. THEORETICAL FRAMEWORK

Decision-Making Process

Decision-making is a complex thinking process, which aims to select the best solution from two or more alternatives to solve a problem [16]. The managerial DMP is one of the important duties in the administrative process, which is a selection process for a particular procedure or strategy. This process is an orderly, rationally and emotionally freeway, based on the study and the objective of logical thinking to reach a satisfactory and appropriate decision [16][17][18].

In the 1950s, James G. March and Herbert A. Simon provide a decision-making model to understand organizational behavior. This model added the idea of the limitations of human rationality. The model suggests that when individuals make a decision, they research a range of potential alternatives rather than all available options. Individuals accept "good enough" solutions, rather than basing on optimal options [18][19].

The DMP to solve the problems faced by managers goes through several stages and steps that must take into account in order to reach sound decisions. There is no general and comprehensive model agreed upon by researchers and management writers, with regard to the stages and steps of decision-making, where the DMP was linked to method problem-solving, or the so-called scientific method of thinking and problem solving, which considers that the DMP is only a method of solving problems, based on the above, the study will present the stages of decision-making in an overall from the viewpoint of a number of writers and researchers [16][20][21][22][23][24][25][26];

1. Identifying the problem: the DMP usually begins with the investigation and detection of the problem, which is the most important step; and then identifies the right time to address and resolve them, as well as, to make an effective and appropriate decision .

2. Gathering information: understanding the problem and proposing appropriate solutions requires collecting sufficient and accurate information related to the problem in question from more than one source. The decision-maker depends on the amount of relevant information collected about the problem to reach the right decision, as well as, providing an accurate information on time, the decision-maker must choose the facts relevant to the problem- and eliminate other information; and be aware of the missing information to assess the degree and accuracy of the decision .

3. Generating Alternative Solutions: at this stage, the proper degree of appropriateness between the solution and the problem is taken into account, where the positive results and possible negative consequences of each of the proposed solutions to solve the problem are presented. Next, identify the obstacles and constraints that limit the success of the proposed solution. The advantages and disadvantages of each proposed solution are then studied and compared these alternatives and ideas are arranged, sorted and evaluated. Finally, the proposed solutions to the problem are assessed within clear criteria for evaluating.

4. Choosing the best solution for the problem: after completing the phase of identifying the alternative solutions and evaluating each alternative, the decision-maker has information on the strengths, weaknesses, advantages, and disadvantages of each alternative, accordingly the decision-maker can choose the best alternative that achieves the greatest gains and returns on the organization "The most appropriate alternative".

5. Implementing the decision and follow-up: the decision-makers put a recommended solution in practice, monitor and follow up the implementation of the decision to determine the efficiency and effectiveness of this solution in dealing with the problem. There should be an alternative plan in case this solution is not efficient in dealing with the problem.

The reality of MIS at AHU

The computer and information technology center is considered the main nerve of work at Al-Hussein Bin Talal University, as it contributes to the use of modern technology to serve the academic and administrative process, and to assist senior management in making decisions by providing appropriate statistics and indications, as well as, helping to establish information systems and databases such as; the financial system, the admission and registration system, the employee information system, the teaching staff affairs system, the electronic fingerprint system, the health center system, the deanship of student affairs system and other multiple systems. The center also contributes to developing a strategic plan to improve administrative work in terms of employing modern technical fields and methods in managing institutions, in cooperation with administrative affairs and the various departments at the university, and fully automating administrative work systems at the university, by designing and implementing the application computing, designing and implementing systems and applications that support different deanships and departments. In addition to working on continuous evaluation and development of these systems.

The information systems in AHU contribute to providing the university with the maximum benefit from the use of computers and systems to help provide the information that the university needs, manage and use it in

administrative processes, by analyzing the information and data that the university has and accessing supported decisions and the closest to the best. The real fruit of MIS is to provide the different managerial levels at the university with all the information they need that helps managers make the appropriate decision, so MIS is a way to accurately display information in a timely manner as readable to managers[27].

X. METHODOLOGY AND PROCEDURES

A descriptive and analytical approach was used in this study, which tries to describe and assess the reality of "MIS and their role in the decision- making process in AHU", to gain complete information that will increase in the stock of knowledge on the subject.

Data collection instrument

To collect data from respondents, the questionnaire was used as a data collection instrument. The questionnaire consists of two parts. The first part contains questions related to the demographic information of the participants. The second part consists of questions related to respondents' perceptions about the role of MIS in the DMP in the AHU. The five-point Likert scale is used to measure respondents' responses to questions related to the second part of the questionnaire. Included "strongly disagree, disagree, neutral, agree, and strongly agree" as shown in Table 1:

TABLE 1: FIVE-POINT LIKERT SCALE

Response	strongly disagree	Disagree	Neutral	Agree	strongly agree
Degree	1	2	3	4	5

The researchers ascertained the validity of the questionnaire by offering the questionnaire to a panel of experts in the area of MIS in the Jordanian universities to give their opinions on the matter. They took the notes of the specialists and performed the necessary modification. To measure the reliability of the study instrument, the researchers followed the method of testing and re-testing. They applied the tool to a sample of 25 people from the study community who were not members of the study sample, at a time interval of two weeks between the two distribution periods, the coefficient of reliability of the questionnaire was calculated using the Cronbach's alpha coefficient (0.91), which relatively reflects a high reliability of the instrument, where many specialists supposed that the touchstone for judging the adequacy of Cronbach's alpha coefficient is (0.5), which indicates the reliability of the results [28]. To describe participants' attitudes toward the perception questions, descriptive levels of the mean scores of the items were adopted as shown in Table 2:

TABLE 2. DESCRIPTIVE LEVELS OF THE MEAN SCORES

Level	Mean scores
Very low	0.0 to 1.49

Low	1.5 to 2.49
Medium	2.5 to 3.49
High	3.5 to 4.49
Very high	4.5 to 5.00

Data Analysis

The data analysis started with the descriptive statistics that involved calculating the frequency distributions of the data related to the participants' demographic information. Descriptive statistics including means and standard deviations were used to answer the first research hypothesis regarding respondents' perceptions of the role of MIS in the effectiveness of DMP in AHU. Independent sample t-tests and analysis of variance (ANOVA) tests were used to answer the second research hypothesis regarding the differences in respondents' perceptions at AHU on the role of MIS in the effectiveness of the DMP based on their demographic information (gender, age, marital status, job experience, and scientific qualification).

Population and the study sample

The study population consists of all users of MIS, administrative staff and academic decision-makers at AHU, and the managers in all levels of the university hierarchy. The researchers used a random sampling method, where they distributed (180) questionnaires on the study population, (160) valid questionnaires were retrieved with a rate of 89%. Table 3 illustrates the distribution of the study sample according to the demographic data of individuals:

TABLE 3: STATISTICAL DESCRIPTION OF THE STUDY SAMPLE ACCORDING TO DEMOGRAPHIC DATA (N = 160)

Personal Data	Category	Frequency	Percent
Gender	Male	121	75.60
	Female	39	24.40
Age	Less than 30 years	11	6.875
	30 - 40 years	66	41.25
	41 - 50 years	49	30.625
	51 years and over	34	21.25
Marital Status	Single	23	14.375
	Married	137	85.625
Job Experience	Less than 10 years	38	23.75
	10 - 20 years	86	53.75
	21 years and over	36	22.50
Scientific Qualification	Bachelor or less	68	42.50
	Master	39	24.375
	PhD	53	33.125

It is evident from Table 3, that (75.60%) of study a sample are males, while 24.40% are females. This confirms the continued dominance of males in the decision-making positions at the level of Jordanian universities. The researchers attribute this finding to the fact that the proportion of males are the largest percentage among university staff and this is due to the nature of the Arab societies in general, and to the prevailing culture in the Jordan society in particular in terms of favor of appointing males compared to women in administrative positions because of the nature of work and the great effort required.

This is consistent with most studies conducted in the Arab environment, which showed that the proportion of male workers is higher than females [20]. The percentages of (71.875%) of the study sample are between 30 and 50 years old, the researchers attribute this finding to the fact that Jordanian universities are geared towards benefiting young people in the Jordanian society, which have the potential to develop and can be able to receive training and refinement in various fields. This means that young people have the ability to make the right decisions.

The rates (85.625%) of the study sample are married. The researchers attribute this finding to the nature of the Jordanian society, its demographic structure, customs and traditions, which contributes to the stability of individuals and thus influences the nature of decisions and the rationality of the DMP. The rate (76.25%) of the study sample has a number of years of job experience 10 years or higher. The researchers attribute this finding to the fact that the study sample of decision-makers and managers, usually in universities, the employee needs many years of experience to hold managerial positions. The rate (57.50%) of the study sample is a Master's degree or higher, this indicates the administration's keenness in AHU to choose qualified scientific cadres who are able to keep up with the development of technology and management that eventually reflects on the university with the expected excellence.

Statistical tools used

The questionnaire was analyzed through SPSS package and used the following statistical tests:

- Percentages and frequencies to describe the study sample.
- SMA and the relative standard deviation (SD).
- Alpha Cronbach's test to determine the reliability of the questionnaire.
- One sample T-Test to see whether the average of the responses has reached a degree of medium approval which is 3 or more.
- Independent samples T-test to test the intermediate variables in which the number of categories does not exceed two categories such as gender (male and female).
- One-Way ANOVA test of variance analysis.

XI. RESULTS AND DISCUSSION

1. H0- There are NO statistically significant differences between MIS and the effectiveness of DMP at AHU.

1.1 Participants' perceptions about the role of MIS in AHU and the effectiveness of DMP at AHU

The researchers tested the study axis of this hypothesis using T-test to see whether the average of the

responses has reached a medium degree of approval (3) or not, as in table (4):

TABLE 4: MEANS (M), STANDARD DEVIATIONS (SD) AND T- TEST VALUE FOR ALL AXIS OF THE ROLE OF MIS IN THE DMP.

No.	Axis	M	SD	T	Sig.
1	The role of MIS in identifying the problem.	4.18	0.751	34.86	0.00
2	The role of MIS in gathering relevant information about the problem.	4.00	0.775	22.38	0.01
3	The role of MIS in identifying Possible Alternative Solutions.	3.80	0.620	16.44	0.00
4	The role of MIS in selecting the best alternative.	3.99	0.632	22.32	0.00
5	The role of MIS in implementing and monitoring the decision.	3.93	0.734	18.46	0.00
Total		3.98	0.638	21.82	0.00

From the results shown in table (4), the total mean of all axes is (3.98), the standard deviation is (0.638), and the potential (Sig.) value is equal to (0.000), this means that participants have positive perceptions about the role of MIS in DMP. As the mean of the first axis of "The role of MIS in identifying the problem" is (4.18), the standard deviation is (0.751), the test value is (34.86), and the potential (Sig.) value is equal to (0.000), which means that there is a high degree of approval by the sample members. The mean of the second axis of "The role of MIS in gathering relevant information about the problem" is (4.00), the standard deviation is (0.775), the test value is (22.38), and the potential (Sig.) value is (0.01), which indicates that there is a high degree of approval by the respondents.

The mean of the third axis of "The role of MIS in identifying possible alternative solutions" is (3.80), the standard deviation is (0.620), the test value is (16.44), and the potential (Sig.) value is equal to (0.000), which specifies that there is a high degree of approval by the members of sample. The mean of the fourth axis of "The role of MIS in selecting the best alternative" is equal to (3.99), the standard deviation is (0.632), the test value is (22.32), and the potential (Sig.) value is equal to (0.000), which means that there is a high degree of approval by the sample members.

The mean of the fifth axis of "The role of MIS in implementing and monitoring the decision" is equal to (3.93), the standard deviation is (0.734), the test value is (18.46), and the potential (Sig.) value is equal to (0.000),

which shows that there is a high degree of approval by the members of sample. It can be concluded that participants have positive perceptions about the role of MIS in the DMP.

2. H1- There are NO statistically significant differences in the attitudes of employees at AHU on the role of MIS in the effectiveness of the DMP due to their demographic variables (gender, age, marital status, job experience and scientific qualification).

2.1 Gender and Participants' perceptions about the role of MIS on the DMP in AHU

The researchers tested participants' perceptions about the role of MIS on the DMP in AHU attributed to their gender through independent samples T -test (Table 5).

TABLE 5: RESULT OF INDEPENDENT SAMPLES T-TEST ACCORDING TO THE GENDER VARIABLE

	Gender	N	M	SD	T	Sig.
The role of MIS on the DMP in AHU	Male	121	3.56	0.725	1.087	0.748
	Female	39	3.39	0.698		

It is clear from the results mentioned in Table (5), that value of T is (1.087) and the statistical significance value is (0.748), which is greater than (0.05). This indicates that "There is no statistically significant relationship between participants' perceptions about the role of MIS in the DMP attributed to gender variable".

2.2 Marital status and participants' perceptions about the role of MIS on the DMP in AHU

The researchers tested participants' perceptions about the role of MIS on the DMP in AHU based on their marital status through independent samples T-test (Table 6).

TABLE 6: RESULT OF INDEPENDENT SAMPLES T-TEST ACCORDING TO THE MARITAL STATUS VARIABLE

	Marital Status	N	M	SD	T	Sig.
The role of MIS on the DMP in AHU	Single	23	3.854	0.326	0.715	0.273
	Married	137	3.479	0.324		

It is clear from the results mentioned in Table (6), that the value of statistical significance is (0.273), which is greater than (0.05). This indicates that "There is no statistically significant relationship between participants' perceptions about the role of MIS in the DMP attributed to marital status variable".

2.3 Age and participants' perceptions about the role of MIS on the DMP in AHU

The researchers used one -way ANOVA to check participants' perceptions about the role of MIS on the DMP in AHU based on their age (Table 7).

TABLE 7: RESULT OF ANOVA ACCORDING TO THE MARITAL STATUS VARIABLE

	Source	Sum of Squares	Df	Mean Squares	F value	Sig.
The role of MIS on the DMP in AHU	Between groups	18.128	11	1.648	1.689	0.016
	Within groups	194.594	149	1.306		
	Total	212.722	160			

It is clear from the results mentioned in Table (7), the statistical significance value is (0.016), which is less than (0.05). This indicates that that "There is statistically significant effect at the ($\alpha < 0.05$) level between participants' perceptions about the role of MIS in the DMP in AHU attributed to age variable.

2.4 Job experience and participants' perceptions about the role of MIS on the DMP in AHU

The researchers used one -way ANOVA to test participants' perceptions about the role of MIS on the DMP in AHU based on their job experience (Table 8).

TABLE 8: RESULT OF ANOVA ACCORDING TO THE JOB EXPERIENCE VARIABLE

	Source	Sum of Squares	Df	Mean Squares	F value	Sig.
The role of MIS on the DMP in AHU	Between groups	21.530	11	1.957	2.421	0.024
	Within groups	191.225	149	1.283		
	Total	212.755	160			

It is clear from the results mentioned in Table (8), that the statistical significance value is (0.024), which is less than (0.05). This shows that "There is statistically significant effect at the ($\alpha < 0.05$) level between participants' perceptions about the role of MIS in the DMP in AHU attributed to the job experience variable". The researchers attribute this to the decision-makers' need for specific management skills that may be achieved by expertise.

2.5 Scientific qualification and participants' perceptions about the role of MIS on the DMP in AHU

The researchers used one -way ANOVA to test participants' perceptions about the role of MIS on the DMP in AHU based on their scientific qualification (Table 9).

TABLE 9: RESULT OF ANOVA ACCORDING TO THE SCIENTIFIC QUALIFICATION VARIABLE

	Source	Sum of Squares	Df	Mean Squares	F value	Sig.
The role of MIS on the DMP in AHU	Between groups	23.541	11	2.140	2.214	0.005
	Within groups	189.214	149	1.263		
	Total	212.755	160			

Based on the results showed in table (9), that the statistical significance value is (0.005), which is less than (0.05). This indicates that "There is statistically significant effect at the ($\alpha < 0.05$) level between participants' perceptions about the role of MIS in the DMP in AHU attributed to the scientific qualification variable. It revealed that those who have master degrees and PhDs are more effective than those who have a bachelor or less.

XII. CONCLUSION

This study aims to define the role of Management Information Systems (MIS) in AHU's decision-making process. The research results have shown that MIS plays a major role throughout the AHU decision-making process. The MIS provides accurate and comprehensive information that contributes to identifying the problem efficiently and effectively. There is a statistically significant effect of the use of management information systems on the effectiveness of identifying appropriate alternatives and solutions, which contributes to increasing the ability of managers and decision-makers at AHU to develop a perception of a set of alternatives to solve the problem and to compare these alternatives through the information provided about the internal and external environment. The findings also shows there is an important role for the management information system in choosing the most appropriate alternative from among the available alternatives, which contributes to increasing the ability of managers and decision-makers at AHU to choose the most appropriate alternative to solve the problem in a highly efficient and effective manner. The study also finds that the MIS help to improve the implementation and follow-up of the decision and contribute to assessing the results of the decision, as well as, determines the efficiency of the proposed solutions in dealing with the problem. The results also reveal that there are statistically significant differences between the role of management information systems in making decisions due to the three variables only; (age, job experience and scientific qualification). The (gender and marital status) variables have no statistically significant differences. The gender gap is exacerbated, with a minority

of females holding the highest decision-making positions, as the majority of the members of the study sample are males, at a rate (75.60) comparing to the percentage of females (24.40%).

The study suggests the following; 1- Increase the support of senior management at AHU for users of information systems and to provide training and development programs for them. 2- Increase interest in MIS through regular maintenance and continuous development. 3- Increase attention to security and protection of information. 4- Activate the technical and administrative aspects and benefiting from the role played by MIS, without ignoring or neglecting the role of material elements in Jordanian universities. 5- Strengthen the strategic vision towards the necessity of comprehensive planning for applications of MIS in Jordanian universities in general and in AHU in particular. 6- Eliminate paperwork gradually, and move more towards computerized MIS. 7- Build an integrated electronic system at the level of all Jordanian universities that guarantees participation and safe and effective exchange of information between them. 8- Provide necessary modern devices and technical equipment to facilitate the work of the computerized system. 9- Follow up on recent developments in information systems in order to achieve competitive advantage and Increase financial support for them.

REFERENCES

- [1] Ramesh Babu, A. & Singh, Y. P. (1987). Management information system in an agricultural extension organization. *In Proceedings of the national seminar on management of information system in management of agricultural extension*, pp. 1-15.
- [2] Al-Zhrani S. (2010). MIS role in decision-making during crises: Case study. *Journal of Computer Science*, 6(11), 1247-1251.
- [3] Ajayi, I. A. & Omirin, Fadekemi F. (2007). The use of MIS (MIS) in decision making in the South-West Nigerian universities. *Educational Research and Review*, 2(5), 109-116.
- [4] Khaldun G. Al-Moghrabi, Ali M. Al-Ghonmein, & Ashour I. AbuElzeet. (2019). The role of MIS strategies toward understanding and managing organizational crisis in ALHussein Bin Talal university. *International Journal of Latest Engineering and Management Research*, 04(09), 124-131.
- [5] Al-Nuaimi B. (2010). Educational decision-making. *Educational Studies*, 10, 205-224.
- [6] Aburamadan, M.A. (1997). *Evaluating the role of MIS in making administrative decisions at the University of Jordan*. Master Thesis Unpublished.
- [7] Al-Hasani A. (2013). *The impact between decision support systems, information quality and effective decision-making a field study on ministry of civil service – Sultanate of Oman*. Master Thesis Unpublished, Middle East University.
- [8] Al-Nazhari R. (1990). *Information systems and their impact on the effectiveness of decisions in Jordanian commercial banks*. Master Thesis Unpublished, Jordan University.
- [9] Al-Mahasna M. (2005). The effect of information systems efficiency on the effectiveness of decision-making - A field study at the Jordanian customs department. *The Jordanian Journal of Business Administration*, 1, 78-100.
- [10] Sabry, D. (2018). *The role of MIS in supporting decisions about the quality of higher education (A comparative study on public and private universities in Egypt)*. Unpublished PhD Thesis, Menoufia University, Egypt.
- [11] Essa, A. (2015). *The role of MIS in developing administrative performance: A case study in the government of West Darfur state*. Master Thesis, Sudan University of Science and Technology, Sudan.
- [12] Hamed A. (2012). *The role of MIS in raising the efficiency of managerial decisions - Case study the bank of Khartoum*. Unpublished Doctoral Dissertation, Sudan University of Science and Technology, Sudan.
- [13] Jaradat A. et al. (2009). The role of MIS in quality of managerial decision making - An applied study in the housing bank for trade and finance. *Tishreen University Journal for Research and Scientific Studies, Economic and Legal Sciences Series*, 31(1), 73-93.
- [14] Al-Hazaymeh A. (2009). The role of the information system in decision-making in governmental institutions – A field study in public institutions for the governorate of Irbid. *Damascus University Journal of Economic and Legal Sciences*, 25(1).
- [15] Abu Sabt, S. (2005). *An evaluation of the role of MIS in managerial decision making in Palestinian universities in the Gaza Strip*. Unpublished Master Thesis, Islamic University of Gaza, Palestine.
- [16] Turban, E., Sharda, R., & Delen, D. (2011). *Decision support and business intelligence systems*. (9th ed.). Boston: Prentice Hall.
- [17] Al-Mansour, K. (2005). Quantitative methods in managerial decision making. *Amman: Al-Hamid House and Library for Publishing and Distribution*, pp. 31.
- [18] Al-Kalaldeh, Z. (1997). *Modern trends in administrative leadership*. (1st ed.). Amman: Zahran Publishing and Distribution House, pp. 254.
- [19] Asemi A. (2011) The role of management information system (MIS) and decision support system (DSS) for manager's decision making process. *International Journal of Business and Management*, 6(7), 164-173.

- [20] Bonoma, T & Slevin, D. P. (1978). *Executive survival manual*. Boston: CBI Publishing Company.
- [21] Yassin, Ghalib. (2006). *Decision support systems*. (1st ed.). Amman, Jordan: Dar Al Manahej.
- [22] Al Shawabkeh. A. (2011). The role of information systems and technology in making Managerial decisions. *Amman: Al-Yazouri Scientific House for Publishing and Distribution*, pp. 233-238.
- [23] Jalal-Karim, A. (2013). Evaluating the impact of information security on enhancing the business decision-making process. *World Journal of Entrepreneurship, Management and Sustainable Development*, 9(1), 55–64.
- [24] Quintus, J.R. & George, J.M. (2005). Emergent strategies and their consequences: A process study of competition and complex decision making. In *Gabriel Szulanski, Joe Porac, Yves Doz (ed.) Strategy Process (Advances in Strategic Management*, 22, 387-411.
- [25] Verboncu, I. (2011). Managerial methodologization and its impact on the managerial efficiency and effectiveness. *Review of General Management*, 13(1), 31-39.
- [26] Nobrega, R.A.A. et al. (2009). Bridging decision-making process and environmental needs in corridor planning. *Management of Environmental Quality: An International Journal*, 20(6), 622–637.
- [27] *Al-Hussein Bin Talal University web*. Available at: www.ahu.edu.jo. Accessed on 2nd Sep. 2017.
- [28] Juoda, Mahfouz. (2008). *Basic statistical analysis using SPSS*. (1st ed.). Amman, Jordan: Dar Wael Publishing.