THE DEGREE OF USING MANAGEMENT INFORMATION SYSTEMS BY ACADEMIC LEADERS IN IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY AND ITS RELATIONSHIP IN IMPROVING MANAGEMENT DECISION MAKING

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ABSTRACT

This study aims to determine the degree of use of management information systems among academic leaders at Imam Abdulrahman Bin Faisal University during the decision-making process and to identify the quality of administrative decision-making among the academic leaders. In addition, it seeks to reveal the relationship between the degree of use of management information systems and the quality of the administrative decisions. In order to achieve the objectives of this study, a descriptive approach was used with a sample of 62 academic leaders at the university. A questionnaire was used to collect data. The results showed that the degree of use of management information systems among the academic leaders in making administrative decisions was high in all areas, with an average rating of 3.7. Moreover, the quality of administrative decision-making was very high, with the average rating of 4.08. A strong positive relationship was found between the degree of use of management information systems and the quality of administrative decision-making in three areas: (a) problem formulation and data collection, (b) formulation and evaluation of alternatives, and (c) decision-making, its implementation, follow-up, and evaluation.

Keywords: Decision-Making, Management Information Systems, Higher Education Leadership.

INTRODUCTION

Nowadays, information is considered one of the most important foundations of life, as a person who possesses information becomes aware, anticipates, and prepares for the future. AlFadl (2013) confirmed that the world today is witnessing a great and increasing interest in information systems that serve the many goals of different life activities. Developed countries, specifically industrialized ones, have noticed the importance of information for management, especially in planning, organizing, controlling, and making decisions, so they have accelerated the development of administrative information systems and the use of modern information technologies (informatics), which has brought about a significant change in the area of management. This rapid development in modern technology, in addition to the availability of high-spec computer devices, high-speed internet, various storage methods from network storage

to cloud storage, and easy access to information from anywhere in the world, helped in the development of management information systems, which became the basis for any institution looking for distinction, accuracy, and efficiency-far from the state of uncertainty. Yassin (2010) confirmed this by explaining that information systems contribute to enabling business organizations to achieve a competitive advantage that is confirmed in their success in managing information resources and systems efficiently and effectively.

Imam Abdul Rahman bin Faisal University in Dammam has been keen on acquiring and designing administrative information systems in all areas that serve the administrative and educational process at the university and allows its academic leaders to view and use these processes. More than one study (e.g., Al-Qahtani, 2013) has recommended building an integrated information system and not being limited to partial reforms, arguing that there must be a comprehensive system for the university and a desire among its employees to deal with these systems. Jaber (2016) found that employees have a desire and a tendency to work electronically by moving to modern technologies that facilitate their daily work. Administrative decisions must be based on accurate data and information that are of high quality (Al-Hazaimeh, 2009; Hejase et al., 2012).

Based on the foregoing, the current study reveals the extent of use of management information systems and its relationship to improving administrative decision-making among academic leaders at Imam Abdul Rahman bin Faisal University. To this end, the study will answer the following questions:

1. What is the degree of use of management information systems for academic leaders at Imam Abdul Rahman bin Faisal University?

2. What is the level of quality administrative decision-making among the academic leaders of Imam Abdul Rahman bin Faisal University?

3. Is there a statistically significant relationship at the level of significance ($\alpha = 0.05$) between the degree of use of management information systems among academic leaderships at Imam Abdulrahman bin Faisal University and the level of quality administrative decision-making?

Study Significance

This study examines two important variables in contemporary management. The first variable is management information systems, which is a modern-day framework and whose rapid development has sought to provide effective services and rapid communication to humans. Such systems have shortened distances, making it easy to obtain information and data in record time-not exceeding a few seconds. The other variable is the quality of administrative decision-making, which is central to management and is practiced daily by all human beings, especially leaders running major institutions that provide services to society. The academic leaders of Imam Abdul Rahman bin Faisal University practice decision-making on a daily basis.

THEORETICAL FRAMEWORK

Modern information technologies have produced new applications for information systems as well as computer systems, with superior, innovative, and constantly developing capabilities. The impact of these systems has substantially increased the nature of management's work, the way the organization is managed, and the type and level of complexity of other systems it uses to manufacture its outputs of products, services, and information (Yassin, 2010).

Systems Theory

The idea of systems was introduced by the German scientist Ludwing Von Bertalaffy in 1937; he called it the general theory of systems. This approach aims to form general principles that can be applied to the systems, whatever their type, the nature of the elements comprising them and the relationships that organize their work, and the goals to be achieved. According to Von Bertalaffy, to understand a whole unit, one must precisely understand the parts that depend on each other by using the systems approach; managers can understand the dependency relationships of the work parts in the process as a whole.

The theory of systems developed by economist Kenneth Boulding in 1956 was based on the extent of simplicity and complexity in the elements or mechanisms of working systems. Systems theory is an attempt to form a holistic framework for the study of any phenomenon in order to reveal the integration of elements with each other. Thus, this theory is a methodology through which the nature of the relationships and interconnectedness between the elements and the components of the school phenomenon can be known. In the area of management, general systems theory is considered a theoretical basis for many concepts and applications, such as informatics-particularly the analysis and design of information systems-and building systems in general. There are three basic elements in defining systems (Al-Shanti et al., 2012): system design to achieve a specific goal, the existence of parts or elements of the system organized in a specific order, and the existence of interactive dependencies between the parts of the system.

The systems school was able to clarify the comprehensive overview and awareness of management problems to draw attention to the need for interdependence and dynamic interaction among the interrelated parts that make up the total system. As a school is interested in interpreting things based on systems theory, every system needs an internal balance among the components of the system, an external coexistence, and a connection (Al-Zaki, 2012).

In the modern era, information has become one of the most important sources of power. Abd Rabbo (2014) defined it as "*a set of organized and coordinated data that was processed, then applied, analyzed, organized, and summarized in a way that allows its use and utilization, as it has become meaningful to users*". Al-Sudairy (2012) defined it as data in the form of valuable and meaningful models so that it has meaning and a real perceived value for the decision-maker. The information is valuable to the organization when making decisions; the more useful the information, the more valuable it is (Al-Hazaimeh, 2009). It is called a piece of information because it is very clear to the specialist in its area, who can benefit from it, whether in decision-making or otherwise.

Importance of Information in Administrative Decision-Making

The importance of the information for the leader lies in obtaining the desired results. A leader who has the information will base his decision on knowledge and a great expectation of the results. Meanwhile, a leader who does not have information will make his decisions based on the unknown or the experience of luck, right or wrong (Al-Taie, 2008).

It is clear that an administrative decision made using accurate and clear information leads to positive results, unlike the decision made without information or with ambiguous information, whose results may be negative and destructive because some decisions are fateful. Sometimes companies are forced to make a fateful decision to achieve their objectives in the market, which confirms the importance of information in decision-making.

The role of the computer in the service of modern administrations is evident in that it is the tool that processes information and controls its preservation and retrieval processes. Information and computers in modern societies are like a body's blood and heart. The role of the computer in the service of information and information systems is like the heart pumping blood to all parts of the body. The contribution of information in all businesses and activities of the facility depends on the quality of this information (Mwalongo, 2011).

Information is the main element that reduces suspicion and increases the degree of confidence in a particular situation or decision; thus, the value of information is determined by the number of losses resulting from not knowing it (Mihaylov, 2019). Moreover, the use of computers, and the accompanying great boom in information technology, has developed recently, making it is possible to design specialized complex mathematical models that take advantage of the speed and accuracy of the computer in the implementation of various applications, in which an enormous amount of descriptive and digital data is addressed.

Therefore, information remains the main support for decision-makers because of the development of information industry technology, the great leap in the methods of its transmission and circulation, the enormous capabilities of the computer in its various forms, the emergence of new applications, information systems, and decision-making support. All of these factors will greatly help in reaching the best decision in time to deal with crises, disasters, and emergency accidents. As a result, the science of operations study has developed as an application of computer technology so that simulation models can be implemented to reach the optimal solution to confront a specific problem or crisis, as determined by the specialist following the standards set by the decision-maker (Al-Freijat, 2013). Information managers and decision-makers generally fall into six broad categories, as mentioned by (Al-Taie, 2008): comfort information, warnings, key indicators, situational information, informal information (gossip), and external information.

The discussion thus far indicates that information is of critical importance for decision-makers, as information is the focus of making a sound decision and is based on accurate information that leads to the success of the organization. Abd Rabbo (2014) confirmed that the success of the decision-making process is linked to the provision of appropriate information, and studies have indicated that 90% of the success of the decision depends on the information while 10% depends on the abilities and skills of the decision-maker. If the essence of the administrative process is the decision, then this decision must be chosen from among the best options or possible alternatives, after comparing the possible alternatives and consequences of each alternative.

Decision Quality

The quality of decisions is usually evaluated based on the extent of information available to decision-makers (Houhamdi & Athamena, 2019). Abu Sabt (2005) indicated that the quality of decisions made by administrative levels depends on the availability of the information available to decision-makers. The quality of decisions is usually judged based on two factors:

1. Evaluating decisions in light of their consequences is the clearest and most acceptable approach from a practical point of view. If the results of the decision are acceptable, the decision is considered correct; however, taking into account the time during which the decision is evaluated, some decisions can lead to undesirable long-term consequences.

2. Evaluating decisions includes determining that the best decision is made in light of the circumstances that existed during the decision-making process. This approach is characterized by considering the skills of decision-makers, which are evaluated in light of the situation, the subject of the decision, and the available information and resources. These points must be taken into account in order to obtain an optimal decision (Abu Sabt, 2005).

This paper is divided into four sections. It begins by an introduction explaining the purpose and the research questions explored in this paper, followed by reviewing the literature dealing with the system theory and the importance of information in administrative decision-making. The third section describes the background of the study and details its methodological approach (sampling, data collection, and analysis). The paper concludes by highlighting key findings, by discussing the study's limitations, and by proposing several recommendations for academic leaders in Universities.

STUDY METHODOLOGY AND PROCEDURES

Due to the nature of the study and the goals it seeks to achieve, the descriptive approach was used, which relies on collecting and summarizing data on the phenomena to describe, analyze, and compare them or reach conclusions about those phenomena (Al-Adimi, 2013; Hejase et al., 2013). This study took place during the first semester of the 2018–2019 academic year.

Study Population

The study population consists of all 133 academic leaders at Imam Abdulrahman bin Faisal University, distributed into three categories according to their leadership work at the university: deans (n=32, 21.4%), vice deans (n=46, 34.6%), and heads of scientific departments (n=55, 41.3%).

The study sample was 62 individuals (46.6% of the study population), distributed according to their leadership work at the university. This included 16 of the 32 deans (50.0%), 24 of 46 vice deans (52.2%), and 22 out of 55 department heads (40.0%).

Research Tool

A three-part questionnaire was used as the research tool:

A. Part One: demographic data for the study sample. Also, a question about the management information systems in the university that help academic leaders with decision-making.

B. Part Two: It consists of three areas:

- Formulating the problem and collecting data about it (6 items).

- Formulating and evaluating alternatives (12 items).

- Decision-making, implementation, follow-up, and evaluation (14 items).

C. Part Three: the level of quality of administrative decision-making among the academic leaders at Imam Abdulrahman bin Faisal University (8 items).

A 5-level Likert scale was used to address the different statements within the questionnaire. Respondents had to choose the level that matches their agreement with each statement probed. The researcher presented the questionnaire to 10 arbitrators, who all held

doctorates. They were asked to express their opinions on each item, in terms of relevancy and representativeness of the target construct as well as the appropriateness of its formulation. They were also asked to propose amendments, if any. These amendments were made based on the arbitrators' opinions.

Internal Consistency

The questionnaire was introduced to an exploratory sample of 22 individuals using the Statistical Product and Service Solutions - SPSS program (Hejase & Hejase, 2013). The researcher extracted a correlation coefficient (Pearson) for the items with their areas, between the means of each item of the first area (i.e., formulating the problem and collecting data about it) and the general mean of the area. It was found that the correlation is statistically significant at the 0.01 level; the coefficients ranged between 0.919 and 0.965, all of which were very high values and indicated a strong correlation between the mean of the item and the mean of its range. This strong correlation between the item and its area indicated very high internal consistency validity.

With regard to the correlation coefficients between the mean of each item of the second area (i.e., formulation and evaluation of alternatives) and the general mean of the area, it was found that the correlation is statistically significant at the 0.01 level of significance. The coefficients ranged between 0.789 and 0.965-all high values indicating a strong correlation between the mean of the item and its mean area. This strong correlation between the item and its area indicates the existence of very high internal consistency validity.

With regard to the correlation coefficients between the mean of each item of the third area (i.e., decision-making, implementation, follow-up, and evaluation) and the general mean of the area, it was found that the correlation is statistically significant at the 0.01 level of significance and that the coefficients ranged between 0.728 and 0.919; all were high values indicating a strong correlation between the mean of the item and its mean area. This strong correlation between the item and its area indicates the existence of very high internal consistency validity. With regard to the correlation coefficients between the mean of each of the third-party items (i.e., the quality of administrative decision-making among academic leaders) and the general mean of the area, the correlation is statistically significant at the 0.01 level of significance. The coefficients ranged between 0.577 and 0.854, which are medium to high values indicating a strong correlation between the item mean and the general mean. This strong correlation between the item and its area indicates the existence of high internal consistency validity.

Construc**t Validity**

To ensure construct validity, the researcher measured the degree of correlation of each area with the overall degree of the study tool. With regard to the correlation coefficients between the means of the areas and the mean of the tool as a whole, it was found that the correlation is statistically significant at the 0.01 level of significance. The correlation coefficients ranged between 0.859 and 0.942, all of which are very high values, indicating the existence of a strong correlation between the area mean and the mean of the instrument as a whole. This strong correlation between the area means and the mean of the instrument as a whole indicates the existence of construct validity of the study tool.

Reliability

To ensure the reliability of the tool, the researcher used the Cronbach's alpha method, as follows. The consistency values of the areas ranged from 0.867 to 0.979, all of which are very high values. The total consistency of the tool was 0.986, which is very high consistency. Measured Cronbach's Alpha values all fall in the range 0.80 to 0.99 matching the range 0.8 - 0.9 labeled "*Very Good*" and "*0.90 – 1.00*" labeled "*Excellent*" (Burns & Burns, 2008; Hejase & Hejase, 2013). This indicates a very good strength of association and proves that the selection of the questions is suitable for the questionnaire purpose (Chehimi, 2019).

RESULTS AND DISCUSSION

To answer the first question (i.e., What is the degree of use of management information systems by academic leaders at Imam Abdulrahman bin Faisal University in administrative decision-making?), the arithmetic means, standard deviations, and ranks of the responses of the study sample were calculated. The one-sample T-test was used to study the significance of the differences between the arithmetic means and the theoretical mean of the 5-point Likert scale, which was estimated at 3. The degree of use of management information systems was measured at the level of areas and items.

Arithmetic means, standard deviations, ranks, and one-sample T-tests were calculated for the individual responses in the level of the areas.

- The general mean of the degree of the use of management information systems in administrative decision-making was 3.71, the standard deviation was 0.682, and the degree of use was high, so the T value was 8.174, which is a positive and statistically significant value. Because the calculated significance level (0.000) is less than 0.05, respondents' responses were very positive toward the degree of using management information systems in administrative decision-making.

- The highest mean obtained in the area (formulating the problem and collecting data about it), with a mean of 4.01 and a standard deviation of 0.671, the degree of use was high. The T value was 11.791, which is a positive and statistically significant value, because the calculated level of significance (0.000) is less than 0.05.

- The lowest arithmetic mean obtained in the area of (formulating and evaluating alternatives) was 3.42, with a standard deviation of 0.835, indicating a degree of (high) use. The T value reached 3.927, which is a positive and statistically significant value because the calculated significance level (0.000) is less than 0.05.

- All areas showed a (high) usage score, ranging between 3.42 and 4.01.

- The range between the highest arithmetic mean (4.01) and the lowest mean (3.42) was 0.59, which is a very low range indicating the convergence in the responses of the study sample in the three areas.

This high degree in the general mean of the degree of the use of management information systems in administrative decision-making may be attributed to the confidence of academic leaders at the university in the information provided by these systems and also the speed of access to information in the required time.

The arithmetic means, standard deviations, ranks, and one-sample T-test were calculated for the response of the study sample individuals toward each area separately.

The Area of Problem Formulation and Data Collection

The arithmetic means, standard deviations, ranks, and one-sample T-test were calculated for individuals' responses toward the area of formulating the problem and collecting data about it (see Table 1).

Item rank	Item	Item number	Arithmetic mean	SD	T value	Level of significance	Degree of use
1	Conveying a clear and accurate picture of the problem to be addressed	1	4.18	0.84	11.036	0	High
2	Providing all the accurate data that help formulate the problem	3	4.11	0.727	12.059	0	High
3	Gathering the necessary data to show the information about the problem	4	4.11	0.812	10.793	0	High
4	Providing accurate and codified criteria to define the problem to be decided upon	2	4	0.81	9.724	0	High
5	Focusing data on the causes of the problem to be decided upon	5	3.85	0.921	7.312	0	High
6	The diversity of the nature of the collected data and the resulting information	6	3.77	0.818	7.45	0	High
The overall mean for the area of problem formulation and data collection			4.01	0.671	11.791	0	High

Table 1
ARITHMETIC MEANS, STANDARD DEVIATIONS, AND T-TESTS FOR THE AREA OF FORMULATING THE PROBLEM AND COLLECTING DATA ABOUT IT

The arithmetic means, standard deviations, and T-test shown in Table 1 for the area of formulating the problem and collecting data about it indicate the following:

- The general mean for the area of formulating the problem and collecting data about it was 4.01, with a standard deviation of 0.671 and a high degree of use. The T value was 11.791, which is a positive value and statistically significant at the 0.05 level of significance. Respondents' responses toward the area were very positive.

- The highest arithmetic mean (4.18) was obtained for the first item (i.e., transmitting a clear and accurate picture of the problem that can be addressed), with a standard deviation of 0.840 and a high degree of use. The T value was 11.036, which is a positive and statistically significant value at the 0.05 level of significance. This confirms that the respondents' answers toward this item were very positive, which can be attributed to the importance of clarity and accuracy of the image expressing the problem to be easily addressed.

- The lowest arithmetic means of 3.77 was obtained for the sixth item (i.e., the diversity of the collected data and the resulting information), with a standard deviation of 0.818 and a high degree of use. The T value of 7.450 is positive and statistically significant at the 0.05 significance level.

- The lowest standard deviation in this area was 0.727 obtained by the third item (i.e., providing all accurate data that help in formulating the problem), indicating respondents' consistency and agreement about the content of this item. For this reason, the item got the highest T value of 12.059.

- The highest standard deviation of 0.921 was obtained by the fifth item (i.e., focusing data on the causes of the problem for which a decision is to be taken), indicating that the study sample was not completely consistent with the content of the item, resulting in partial disagreement. The item had the lowest T value of 7.312.

All items in this area of formulating the problem and collecting data about it obtained a high degree of usage, which confirms that the study sample agreed to all items in the area with a high degree. The means ranged between 4.18 and 3.77, which is a very low range (0.41), indicating the closeness of the study sample's approval of the content of all items. Moreover, all T values were positive and statistically significant because all values of the significance level for all items of the area were less than 0.05, indicating that the respondents' answers were very positive toward all the items of the area.

The Area of Formulation and Evaluation of Alternatives

The arithmetic means, standard deviations, ranks, and T-tests were extracted for one sample of responses in the area of formulating and evaluating alternatives (see Table 2).

Table 2 ARITHMETIC MEANS, STANDARD DEVIATIONS, AND T-TESTS FOR THE AREA OF FORMULATING AND EVALUATING ALTERNATIVES							
Item rank	Item	Item number	Arithmetic mean	SD	T value	Level of significance	Degree of use
1	Using appropriate methods in formulating alternatives	4	3.65	0.907	5.6	0	High
2	Classification of alternatives according to their importance	5	3.53	0.987	4.246	0	High
3	Linking alternatives to available capabilities	8	3.53	0.987	4.246	0	High
4	Determining the likelihood that each alternative will be relevant to reality	9	3.52	0.936	4.34	0	High
5	Assisting in formulating suitable alternatives	3	3.47	0.863	4.267	0	High
6	Identifying the pros and cons of each alternative	6	3.44	1.096	3.129	0.003	High
7	Putting relative importance to each alternative	11	3.42	1.001	3.299	0.002	High
8	Providing conditions and criteria for formulating alternatives	2	3.4	0.983	3.231	0.002	High
9	Carefully analyzing alternatives	7	3.35	1.118	2.5	0.015	Medium
10	Providing the mathematical or statistical equations needed by the existence of alternatives	1	3.31	1.065	2.266	0.027	Medium
11	Minimizing the implications of each alternative	12	3.24	1.019	1.869	0.066	Medium
12	Determining the estimated cost of each alternative	10	3.15	1.099	1.04	0.302	Medium
The overall mean for the area of formulation and evaluation of alternatives			3.42	0.835	3.927	0	High

The arithmetic means, standard deviations, and T-tests for formulating and evaluating alternatives show the following:

- The general mean for the area of formulating and evaluating alternatives was 3.42, with a standard deviation of 0.835 and a high degree of use. The T value was 3.927, which is a statistically significant value at the 0.05 level of significance. This confirms that respondents' responses to the items of the area were very positive.

- The highest arithmetic mean was obtained for the fourth item (i.e., the use of appropriate methods in formulating alternatives), with an arithmetic mean of 3.65, a standard deviation of 0.90, and a high degree of use. The T value was 5.600, which is a positive value and statistically significant at the 0.05 level of significance 0.05. This confirms that the respondents' answers on this item were very positive due to the importance of using appropriate scientific methods in choosing alternatives.

- The lowest arithmetic means of 3.15 was obtained for the tenth item (i.e., determining the estimated cost of each alternative), with a standard deviation of 1.099 and a medium degree of use. The T value was 1.040, which is a positive value but it is not statistically significant at the 0.05 level of significance, which means that the mean of the responses for this item was not different from the theoretical mean for measuring the degree of use specified by 3.

- The lowest standard deviation in this area was 0.863 obtained for the third item (i.e., help in formulating appropriate alternatives). This indicates the consistency and agreement of the study sample about the content of this item, which can be attributed to the leadership's need for actual academic assistance from management information systems in formulating appropriate alternatives.

- The highest standard deviation of 1.118 was obtained by the seventh item (i.e., analyzing alternatives accurately). This indicates the inconsistency and agreement of the study sample toward the content of the item. There was a lot of dispersion in the responses of the study sample.

Eight items in this area of formulation and evaluation of alternatives got a high usage score while four items got a medium usage score. The highest mean was 3.65 and the lowest mean was 3.15, indicating a range of 0.50; this is a low range indicating the sample's approval of the content of all items. All T values were positive and statistically significant. All significance level values for all area items were less than 0.05, except the twelfth (0.066) and tenth (0.30) items, which were higher than 0.05. This indicates that the mean of the answers of the study sample was equal to the theoretical mean determined by 3. The observed difference was not statistically significant.

The Area of Decision-Making, Follow-up, and Evaluation

The arithmetic means, standard deviations, ranks, and one-sample T-test were extracted for the response of the study sample toward the area of decision-making, follow-up, and evaluation (see Table 3).

Item rank	Item	Item number	Arithmetic mean	SD	T value	Level of significance	Degree of use
Table 3 — ARITHMETIC MEANS, STANDARD DEVIATIONS, AND T-TESTS FOR THE AREA OF DECISION-MAKING, IMPLEMENTATION, FOLLOW-UP, AND EVALUATION							
1	Choosing the most suitable alternative	1	3.92	0.98	7.386	0	High
2	Circulating the decision to all concerned to ensure successful implementation	5	3.9	918	7.746	0	High
3	Decision formulation for the issue of the problem to be solved	2	3.79	943	6.597	0	High
4	Finalizing the decision	13	3.77	0.948	6.429	0	High
5	Adopting the principle of feedback after implementation and evaluation of the decision	14	3.77	0.965	6.315	0	High
6	Determining the authority supervising the implementation of the decision	7	3.77	1.047	5.824	0	High

7	Determining the procedures for implementing the decision	3	3.71	912	6.125	0	High
8	Establishing criteria and indicators to evaluate the decision-making process	9	3.71	0.912	6.125	0	High
9	Determining the requirements for implementing the decision	6	3.66	0.867	6.004	0	High
10	Determining the mechanisms of each decision implementation procedure	4	3.65	0.889	5.715	0	High
11	Determining the appropriate methods to implement the decision	8	3.58	1.095	4.177	0	High
12	Knowing the methods of identifying deviations from the indicators of implementation of the decision	11	3.53	1.02	4.11	0	High
13	Determining the steps for evaluating the implementation of the decision	10	3.53	0.97	4.319	0	High
14	Developing the necessary treatments for the deviations that occurred during the decision implementation process	12	3.5	0.971	4.055	0	High
The general mean for the area of decision-making, implementation, follow-up, and evaluation			3.7	0.76	7.26	0	High

The data in Table 3 show the following:

- The general mean for the area of decision-making, implementation, follow-up, and evaluation was 3.70, with a standard deviation of 0.760, a high degree of use, and a T value of 7.260, which is a positive and statistically significant value at the 0.05 level of significance. These data confirm that the respondents' answers to the area were very positive.

- The highest arithmetic mean (3.92) was obtained for the first item (i.e., choosing the most appropriate alternative), with a standard deviation of 0.980 and a high degree of use. The T value was 7.386, which is a positive and statistically significant value at the 0.05 significance level. This confirms that the respondents' answers to this item were very positive due to the importance of choosing academic leaders as the most appropriate alternative to solve and address the problem.

- The lowest arithmetic means of 3.50 was obtained for the twelfth item (i.e., developing the necessary treatments for the deviations that occurred during the implementation of the decision), with a standard deviation of 0.971, a high degree of use, and a T value of 4.055, which is a positive and statistically significant value at the 0.05 level of significance.

- The lowest standard deviation in this area was 0.867, obtained on the sixth item (i.e., determining the requirements for implementing the decision), indicating the consistency and agreement of the study sample about the content of this item. This result and agreement are attributed to the importance of the item's content, which talks about the importance of determining the requirements for implementing the decision.

- The highest standard deviation was 1.095, obtained by the eighth item (i.e., determining the appropriate methods to implement the decision). This indicates the inconsistency and agreement of the study sample toward the content of the item. There was a lot of dispersion in the sample's responses.

All items of this area of decision-making, follow-up, and evaluation obtained a high degree of usage, which confirms that the study sample agrees to a high degree with the content of all items. The range between the highest (3.92) and lowest (3.50) mean was 0.42, which is very low, indicating respondents' agreement on the content and importance of all items. Moreover, all T values were positive and statistically significant because their significance level was less than 0.05, indicating that the sample's answers were very positive toward all items of the area.

These results may be attributed to the great interest of the leadership of Imam Abdulrahman bin Faisal University to developing management information systems. In 2014, a special unit for decision support was established (Imam Abdulrahman bin Faisal University, 2020) as the authority responsible for developing systems and models to support decision-making in issues related to the development of educational, study, and professional services provided by the university to internal and external beneficiaries. In line with the variables and requirements of the kingdom's education system, the unit also works to monitor and follow up on external economic and social issues and environmental environments that achieve effective communication and partnership with the surrounding community (local, regional, and global). This unit is also considered the official spokesperson for data and the unified body for data acquisition in the facility. Therefore, the results of this study showed that the degree of using management information systems in administrative decision-making was high.

The aforementioned results are consistent with many previous studies that concluded that the use of management information systems in administrative decision-making was high (e.g., Abu Ramadan, 2000; Al-Qahtani, 2013; Bafrouei et al., 2013; Al-Wadi, 2015). The results disagree with the findings of Al-Yafei (2014), who concluded that the decline in the use of information systems in decision-making is due to the Education Office leadership's low level of interest in finding a computerized electronic information system. Their decision-making relied on information and simple or oral reports, and their decisions were based on personal desires or resulted from political, social, or authority pressures and practices.

To answer the second question (i.e., What is the level of quality of administrative decision-making among the academic leaders of Imam Abdulrahman bin Faisal University?), the arithmetic means, standard deviations, and ranks of the sample's responses were calculated, along with a one-sample T-test, to study the significance of the differences between the arithmetic means and the theoretical mean of the 5-point Likert scale which is estimated at 3. Table 4 illustrates this.

Table 4
ARITHMETIC MEANS, STANDARD DEVIATIONS, AND T-TESTS FOR THE AREA OF THE QUALITY LEVEL OF ADMINISTRATIVE DECISION-MAKING.

Item rank	Item	Item number	Arithmetic mean	SD	T value	Level of significance	Degree of use
1	Making sure to collect the data necessary to make decisions with accuracy and validity	3	4.34	0.767	13.743	0	Very High
2	Making my decisions with the full participation of those involved in the implementation	6	4.27	0.793	12.655	0	Very High
3	The decisions taken are clear and easy to understand	7	4.24	0.74	13.221	0	Very High
4	I have enough ability to make various decisions	5	4.15	0.807	11.178	0	High
5	The decisions taken achieve their goals	1	4.1	0.67	12.881	0	High
6	Satisfaction with the results of the decisions taken	2	3.9	0.863	8.242	0	High
7	The information available from the system helps in making emergency decisions quickly	8	3.84	0.944	6.994	0	High

8	I take my decisions quickly in emergency cases	4	3.82	0.859	7.537	0	High
The general mean for the area of the quality level of administrative decision-making			4.08	0.571	14.935	0	High

Table 4 shows the following:

- The general mean for the quality of administrative decision-making was 4.08, with a standard deviation of 0.571 and a high degree of use. The T value was 14.935, which is a positive and statistically significant value at the 0.05 significance level. This confirms that respondents' answers toward the area were very positive.

- The highest arithmetic mean was obtained on the third item (i.e., I strive to collect the data necessary to make decisions accurately and honestly), with an arithmetic mean of 4.34, a standard deviation of 0.767, and a very high degree of use. The T value was 13.743, which is a positive and statistically significant value at the 0.05 level of significance, confirming that the respondents' answers to this item were very positive due to the importance of adhering to the standards of accuracy and validity when collecting the information and data necessary to make decisions.

- The lowest arithmetic means of 3.82 was obtained for the fourth item (i.e., I take my decisions quickly in emergency cases), with a standard deviation of 0.859 and a high degree of use. The T value was 7.537, which is a positive and a statistically significant value at the 0.05 significance level.

- The lowest standard deviation in this area was 0.670, obtained on the first item (i.e., the decisions are taken to achieve their objectives). This indicates the consistency and agreement of the study sample about the content of this item.

- The highest standard deviation of 0.944 was obtained on the eighth item (i.e., the information available from the system helps in making emergency decisions quickly), indicating that the study sample is not completely consistent about the content of the item. Due to the partial disagreement, the item had the lowest T value of 6.994.

Three items in this area of the quality level of administrative decision-making got a very high score, while the remaining five items received a high score. The range between the highest mean of 4.34 and the lowest mean of 3.82 was 0.52, which is a low range indicating the approval of the study sample on the content of all items. Moreover, all T values were positive and statistically significant because all the significance level values for all items of the area were less than 0.05, indicating that the sample's answers were very positive toward all items of the area.

These results may be due to academic leaders adhering to standards of accuracy and validity when collecting the information and data necessary to make decisions. The item "making sure to collect the data necessary to make decisions with accuracy and validity" obtained the highest arithmetic mean. The general mean for quality of administrative decision-making reached 4.08, with a standard deviation of 0.571 and a high degree of use. The T value reached 14.935, which is a positive and a statistically significant value at the 0.05 level of significance. These results confirm that the respondents' answers to the area were very positive.

To answer the third question (i.e., Is there a statistically significant relationship at the 0.05 level of significance between the degree of use of management information systems by academic leaders at Imam Abdulrahman bin Faisal University and the level of quality of administrative decision-making?), correlation coefficients were calculated between the independent variable (use of management information systems among academic leaders at Imam Abdulrahman bin Faisal University) in three areas and the dependent variable (the quality of administrative decision-making). The results were as follows:

A. Regarding the independent variable, the correlation coefficient was calculated between the degree of use of management information systems (independent variable) and the quality of managerial decision-making (dependent variable). The results are presented in Table 5.

Table 5 CORRELATION COEFFICIENT BETWEEN THE DEGREE OF USE OF INFORMATION SYSTEMS AND THE LEVEL OF QUALITY OF THE ADMINISTRATIVE DECISION.		
	The degree of use of management information systems in administrative decision-making	
The level of quality of the administrative decision	Correlation coefficient	**0.586
	significance level	0
	Sample size	62
** *The correlation coefficient is statistically significant at the 0.01 level of significance*		

Table 5 demonstrates that the value of the correlation coefficient reached 0.586, which is a statistically significant value at the 0.01 level of significance, indicating that there is a moderate direct correlation between the degree of use of management information systems in administrative decision-making and the level of quality of the administrative decision. In other words, the more management information systems are used in administrative decision-making by academic leaders, the higher the quality of the administrative decision.

B. At the level of the areas of the independent variable:

The independent variable (use of management information systems in administrative decision-making) includes three areas: problem formulation and data collection, formulation, and evaluation of alternatives, decision-making, implementation, follow-up, and evaluation. Correlation coefficients were calculated between each area of the independent variable and the dependent variable. The results were as follows:

Problem Formulation and Data Collection

The correlation coefficient was calculated between the degree of use of management information systems in formulating the problem and collecting data (as an independent variable) and the level of quality of administrative decision-making (as a dependent variable). The results are summarized in Table 6.

Table 6 CORRELATION COEFFICIENT BETWEEN PROBLEM FORMULATION AND DATA COLLECTION AND THE LEVEL OF QUALITY OF THE ADMINISTRATIVE DECISION		
	Formulating the problem and collect data	
The level of quality of the administrative decision	Correlation coefficient	**0.590
	Significance level	0
	Sample size	62
** *The correlation coefficient is statistically significant at the 0.01 level of significance*		

Table 6 demonstrates that the value of the correlation coefficient reached 0.590, which is a statistically significant value at the 0.01 level of significance, indicating the existence of a

moderate direct relationship between the degree of use of management information systems in formulating the problem and collecting data about it and the level of quality of the administrative decision. Thus, the more management information systems are used in formulating the problem and collecting data about it by academic leaders, the higher the quality of the administrative decision.

Formulation and Evaluation of Alternatives

The correlation coefficient was calculated between the degree of use of management information systems in formulating and evaluating alternatives (as an independent variable) and the quality of managerial decision-making (as a dependent variable). Table 7 presents the results.

Table 7		
THE CORRELATION COEFFICIENT BETWEEN FORMULATING AND EVALUATING ALTERNATIVES AND THE LEVEL OF QUALITY OF THE ADMINISTRATIVE DECISION.		
	Formulation and evaluation of alternatives	
The level of quality of the administrative decision	Correlation coefficient	**0.509
	significance level	0
	Sample size	62
** The correlation coefficient is statistically significant at the 0.01 level of significance		

Table 7 indicates that the value of the correlation coefficient reached 0.509, which is a statistically significant value at the 0.01 level of significance, suggesting a moderate direct relationship between the degree of use of management information systems in formulating and evaluating alternatives and the level of quality of the administrative decision. Thus, the more academic leaders use management information systems in formulating alternatives and evaluating them, the higher the quality of the administrative decision is.

Decision-Making, Implementation, Follow-up, and Evaluation

The correlation coefficient was calculated between the degree of use of management information systems in decision-making, implementation, follow-up, and evaluation (as an independent variable) and the quality of administrative decision-making (as a dependent variable). Table 8 presents the results.

Table 8		
CORRELATION COEFFICIENT BETWEEN DECISION-MAKING, IMPLEMENTATION, FOLLOW-UP, AND EVALUATION AND THE LEVEL OF QUALITY OF THE ADMINISTRATIVE DECISION		
	Decision-making, implementation, follow-up, and evaluation	
The level of quality of the administrative decision	Correlation coefficient	**0.495
	significance level	0
	Sample size	62
*** The correlation coefficient is statistically significant at the 0.01 level of significance*		

Table 8 shows that the value of the correlation coefficient was 0.495, which is statistically significant at the 0.01 level of significance. This indicates the existence of a

moderate direct relationship between the degree of use of management information systems in decision-making, implementation, follow-up, and evaluation and the level of quality of the administrative decision. Thus, the more management information systems are used in decision-making, implementation, follow-up, and evaluation by academic leaders, the greater the quality of the administrative decision is.

Previous studies have confirmed the existence of a positive correlation between the use of management information systems and the quality of administrative decision-making (Al Shobaki & Abu-Naser, 2017; Abu Amuna et al., 2017), because management information systems at Imam Abdulrahman bin Faisal University are one of the important factors in the quality of administrative decisions. The academic leaders of Imam Abdulrahman bin Faisal University are keen on the use of management information systems in decision-making because these systems provide the information required for effective decision-making.

These results are consistent with the study of Al-Wadi (2015), who confirmed the existence of a relationship between the quality of administrative decisions and management information systems in the Ministry of Education and Higher Education, with a correlation coefficient equal to 0.744. Abu Ramadan (2000) concluded that a strong relationship exists between the accuracy of the information provided by the administrative information system at the University of Jordan and managers' use of these systems in making their administrative decisions; the degree of strength ranged between strong and very strong.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the paper determined the degree of use of management information systems among academic leaders at Imam Abdulrahman Bin Faisal University during the decision-making process and identified the quality of administrative decision-making among the academic leaders. On the other hand, it sought to reveal the relationship between the degree of use of management information systems and the quality of the administrative decisions. The results showed that the degree of use of management information systems among the academic leaders in making administrative decisions was high in all areas, with an average rating of 3.7. in addition, the quality of administrative decision-making was very high, with the average rating of 4.08. A strong positive relationship was found between the degree of use of management information systems and the quality of administrative decision-making in three areas: (a) problem formulation and data collection, (b) formulation and evaluation of alternatives, and (c) decision-making.

In light of the findings of the current research, we offer several recommendations that may contribute to enabling academic leaders to practice management information systems efficiently and effectively as well as perfect their administrative decisions. These recommendations can be summarized as follows:

- Continuously adapt and update the management information systems used by senior leaders at Imam Abdulrahman bin Faisal University.

- Spread awareness of the importance of using management information systems in improving administrative decisions among employees of Imam Abdulrahman bin Faisal University.

- Empower academic leaders to enter all systems that help them make decisions.

- Host various seminars and workshops to explain how to make use of management information systems to optimize administrative decisions.

- Issue written guidance for the procedures to follow in the use of management information systems.

- Continuously and directly update information included in management information systems so that leaders can rely on them in administrative decision-making, especially in times of emergency.

- Facilitate and overcome all the difficulties and obstacles facing academic leaders when using the management information systems available at the university.

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