

**APPLICATION OF ARTIFICIAL INTELLIGENCE IN
ADMINISTRATIVE OPERATIONS AT SAUDI CULTURAL
MISSIONS: A PROPOSED VISION**

Prof. Fatma Abdullah Albeshr

Professor of Educational Administration and Planning,
faalbeshr@imamu.edu.sa

Abstract

This study explores the application of artificial intelligence (AI) in administrative operations at Saudi cultural missions, with the aim of improving efficiency, restructuring traditional units, and enhancing the quality of services provided to beneficiaries. The research identifies detailed objectives that focus on optimizing administrative performance, developing smart systems for supervisors and administrators, and utilizing AI to address complex administrative challenges. A proposed vision for implementation is presented, which includes establishing a specialized center within the General Secretariat of Saudi Cultural Missions to oversee the integration of AI across administrative units and to develop guidelines for safe and effective use. Findings indicate that respondents generally agree to a medium degree regarding both the current reality and the challenges of AI application within Saudi cultural missions, confirming the need for a structured vision to ensure sustainable improvement.

Keywords: Artificial intelligence, Administrative operations, Saudi culture, Administrative efficiency, Digital transformation.

Introduction:

The world is witnessing rapid developments in various aspects of life, and technology has taken the lead in the speed of development and change. This development has been reflected in various administrative, economic, political, and industrial fields. This has compelled developed countries to transition toward the digital world and technological transformation in their various sectors. The Kingdom of Saudi Arabia was not isolated from these transformations. Therefore, the Kingdom of Saudi Arabia has been keen to adopt the concept of government digital transformation in various sectors by replacing traditional administrative processes with digital ones and setting five-year plans and strategies to ensure the achievement of its goals with high quality and efficiency. It aims to reach a fully integrated digital government that facilitates all services for beneficiaries. One of these transformations is the establishment by the Kingdom of the **Saudi Data and Artificial Intelligence Authority (SDAIA)** to lead the national program for data and artificial intelligence in order to achieve the goal of making the Kingdom a global leader in data reliance (Unified National Platform, 2020). The **Tenth Development Plan (2015-2019)** also emphasized raising government efficiency and productivity and deepening a culture of quality and excellence among members of Saudi society by introducing technology

programs. This indicates that the country's leaders are aware that artificial intelligence technology helps in finding the necessary solutions for the problems and shortcomings that face various operations in national data management, through the process of analysis and production, and that the state of this technology in this regard is like the human mind when it manages (Al-Bisher, p. 18, 2021). The importance of artificial intelligence also lies in linking administrative units with each other and linking beneficiary individuals, and it helps in accessing digital materials in less time and with less effort through parallel processing in digital work environments by analyzing data and information and making decisions about them. Given the ability of artificial intelligence technology to store information and differentiate between various alternatives that exceed human capacity, it has been applied in administrative tasks in various environments. The administrative reality has witnessed multiple forms of administrative tasks performed by artificial intelligence, including: student evaluation tasks, automatic correction of certain types, which saves time for supervisors to perform other tasks, in addition to collecting student data and alerting about the status of students at risk of dropout (Jabali and Al-Qahtani, 2022, p. 261). The **Saudi cultural missions** are considered one of the most important public government institutions in the Kingdom of Saudi Arabia, which provide their services to beneficiaries, especially scholarship students for study and research. The Saudi cultural missions supervise more than **(122,000)** male and female students on scholarships and those studying at their own expense, who are studying in **(34)** countries, and they are responsible for following up on all their affairs (Ministry of Education, 2019).

Study Problem: The cultural missions are one of the most important government institutions that provide services to the public, as the Saudi government works to establish cultural missions as part of its diplomatic missions in foreign countries to provide its services to its citizens abroad, especially those on scholarships for study and research. The Ministry of Education seeks to develop the performance of the Saudi cultural missions in various countries of study, yet these efforts are still below expectations, as the cultural missions suffer from many administrative problems and obstacles that face scholarship students, including the cultural mission's delay in notifying scholarship students of new regulations and instructions, and the lack of clarity of the cultural mission's procedures, as the study by **(Al-Tamimi, 2019)** showed that one of the administrative problems for students on scholarships abroad is the abundance of routine administrative requirements from the cultural mission. The **(Al-Shuaibi, 2016)** study recommended the necessity of conducting studies in the field of the quality of cultural mission services in this sector because it is still absent from researchers, despite its importance and vitality and the large number of beneficiaries of its services. Academic supervisors at Saudi cultural missions also make many efforts to provide academic guidance to students, help them adapt, and provide them with support to overcome the difficulties they face. However, a number of studies have indicated some shortcomings in the provision of these services. The study by **(Al-Fifi, 2016)** showed that the most important administrative problem facing Saudi scholarship students is the mission's lack of organizing meetings with postgraduate students to discuss their problems and recommended raising the efficiency of academic supervisors at the missions. The study by **(Al-Abdul-Moneim, 2017)** revealed the most important obstacles

facing scholarship students, including: the difficulty of communicating with the supervisor, the supervisor's delay in responding to inquiries, weak communication from the supervisor, and the large number of tasks assigned to the supervisor, such as acceptance, academic guidance, clerical work, and others. The study by **(Al-Tamimi, 2019)** explained that one of the most important administrative problems for students on scholarships abroad is the abundance of routine administrative requirements from the supervisors at the mission. The Al-Basir study (1441) also confirmed that the delay in responding to a scholarship student's requests by the cultural mission is considered one of the administrative difficulties facing scholarship students of Imam Muhammad bin Saud Islamic University. The Farah study (2020) showed that the length of administrative procedures at the cultural mission for scholarship students' transactions causes them academic problems. Therefore, artificial intelligence helps in analyzing data and information for students and researchers to make decisions about them. It will also work to identify the administrative gaps between students and various academies, no matter how far the student's residence is from the mission. The importance of artificial intelligence also lies in the fact that the decision-making process takes place through a choice from a group of alternatives to solve a complex problem, which is what human intelligence does (Fulcher, 2006, 14). Also, the existence of an effective information system works to provide accurate information to serve the administration's information needs (Yaghi, 2003, p. 82). This achieves what **Vision 2030** aims for by activating technology and using devices with programs, data systems, and algorithms that simulate the human mind to benefit from them in various administrative operations, based on computer programs to solve problems, speed up completion, and make decisions in a logical manner. Artificial intelligence is a new and completely different pattern from traditional administration because it offers new and unique possibilities that are difficult to do without, in light of the availability of this great technological progress and the development of information systems. Administrative trends have gradually shifted from traditional to electronic administrations, seeking to benefit from the advantages of these modern administrations in all their fields, by increasing the efficiency of the work of administrations and institutions to improve their performance, as most administrations have come to rely on the use of modern technology in all administrative processes electronically, from planning, organizing, directing, and controlling (Khataybeh, 2015). Therefore, this study came in response to the recommendations of some previous studies, such as: the study by **Fernández, Fernández, and Aburto (2019)**, the study by **Adamu and Awwalu (2018)**, and the study by **Wadhwa (2017)**, which stressed the necessity of expanding the use and employment of artificial intelligence applications in education to achieve better learning. The studies by **Chang (2019)** and **Nadimpalli (2017)** also recommended the necessity of paying attention to the topic of artificial intelligence and its effect on raising the efficiency of administrative systems. Based on the above, the current study aims to provide a proposed vision for the application of artificial intelligence in administrative operations at Saudi cultural missions.

Study Questions:

Q1: What is the reality of administrative operations at Saudi cultural missions from the perspective of section supervisors and administrators working there?

Q2: What are the difficulties facing the application of artificial intelligence in administrative operations at Saudi cultural missions from the perspective of the study's population?

Q3: What is the proposed vision for the application of artificial intelligence in administrative operations at Saudi cultural missions?

Study Objectives:

1. To identify the reality of administrative operations at Saudi cultural missions from the perspective of section supervisors and administrators working there.
2. To reveal the difficulties facing the application of artificial intelligence in administrative operations at Saudi cultural missions from the perspective of the study's population.
3. To present a proposed vision for the application of artificial intelligence in administrative operations at Saudi cultural missions.

Study Importance:

1. As far as the researcher knows, this study is the only local one in the field of applying artificial intelligence in administrative work at Saudi cultural missions, which will increase the knowledge base in local libraries.
2. This study is considered a response to the state's directives to pay attention to the application of artificial intelligence in various government sectors.
3. To draw the attention of leaders at the Ministry of Education in general, and the senior leaders responsible for the affairs of Saudi cultural missions in particular, to the importance of applying artificial intelligence in administrative work.

Study Terms:

Artificial Intelligence: "It is that branch of computer science by which computer programs that simulate the style of human intelligence can be created and designed, so that the computer can perform some tasks instead of humans, which require thinking in a logical and organized manner" (Kazem, 2012, p. 4). Operationally, in this study, it is defined as: "Computer programs applied in administrative operations at the cultural missions in the Kingdom of Saudi Arabia that work to process the entered data, and have the cognitive ability and control over matters, understanding relationships, inferring knowledge, drawing conclusions, and solving problems."

Saudi Cultural Missions: Cultural missions are defined as: "One of the specialized agencies administratively and financially affiliated with the Ministry of Education, representing the Kingdom of Saudi Arabia in cultural and educational affairs, and as a cultural link between the Kingdom and the host country. They supervise scholarship programs abroad and work under

the umbrella of the embassies of the Custodian of the Two Holy Mosques abroad" (Secretariat of Cultural Missions, 2019).

Theoretical Framework

Artificial Intelligence

There are several definitions of artificial intelligence, including **Ming-Hwa Wang's** definition: "Artificial intelligence is the field of study that includes computational techniques to perform tasks that humans do and that require intelligence" (Wang, 2017, p.).

Artificial intelligence is also defined as: "a specific system for analyzing external data, deriving new knowledge rules, and adapting and using these rules to achieve new goals and tasks" (Khare, Stewart, & Khare, 2018, p. 67).

Patterson defines artificial intelligence as: "A branch of computer science that is concerned with the study and formation of computer systems that show some forms of intelligence. These systems have the ability to make very useful inferences about the problem at hand, and these systems can understand natural languages, or understand biological perception, and other capabilities that require intelligence when performed by humans" (Sheikh, 2018, p. 50).

Jonathan Deesing defines artificial intelligence as: "The science of creating smart computer programs and machines in an attempt to mimic human levels of intelligence" (Deesing, 2020).

In another definition of artificial intelligence: "It is the ability of devices to perform activities such as thinking, cognitive ability, control over matters, understanding relationships, and producing original ideas. Devices can represent human minds in the future, as they work by performing all the tasks that a human performs" (Borana, 2016, p.).

It is also defined as: "Certain behaviors and characteristics that are inherent in computer programs to simulate human mental ability and work patterns. The most important features of artificial intelligence are its ability to learn and infer" (Russel & Norvig, 2010, p. 201).

From this, we conclude that artificial intelligence is nothing but a simulation of the human mind through the work of computer systems in thinking, understanding, inferring and forming relationships, and solving problems.

Characteristics of Artificial Intelligence

Artificial intelligence has some characteristics that computer programs possess. These characteristics enable them to simulate human mental abilities and work patterns. The most important of these characteristics are learning, drawing conclusions, and performing things that are not programmed into the machine. Al-Ubaidi (2010, pp. 46-47) indicated that the most important characteristics of artificial intelligence are the following:

1. **Symbolic representation** of knowledge, using an optimistic experimental approach, the ability to deal with incomplete information, and the ability to learn.

2. It uses an approach similar to the human approach in problem-solving, and it deals with hypotheses simultaneously with high accuracy and speed, and there is a specialized solution for each problem and for each homogeneous class of problems.
3. It works at a consistent scientific and advisory level and does not fluctuate.
4. Its construction requires the representation of a huge amount of knowledge specific to a certain field, and it processes symbolic, non-numeric data through logical analysis and comparison operations.
5. It stimulates new ideas that lead to innovation, and it lacks feelings of fatigue and boredom.
6. It provides more than one copy of the system to compensate for experts.
7. It reduces reliance on human experts (Al-Mutairi, 2022, p. 151).

From the above, it is clear that human intelligence is similar to artificial intelligence in its ability to link events, predict events through input data, and solve problems with high accuracy and speed.

The Difference Between Artificial Intelligence Programs and Traditional Programs

The difference between artificial intelligence (AI) programs and traditional programs is determined as follows:

- Traditional computer programs deal with **data and information**, whereas AI systems deal with **knowledge**.
- Traditional programs require **clear and complete inputs** to reach a solution, while AI can find solutions to problems where data is **ambiguous or incomplete**.
- Traditional programs rely on technologies related to the conventional digital processing of data and information, while AI programs rely heavily on **knowledge processing** and the symbolic representation of this knowledge.
- AI programs are **required to provide an explanation and interpretation** for the results and solutions they reach and the method of solving they followed, whereas this is not required in traditional programs, and it is difficult to do so in those traditional systems (Barasouli and Abdul Hamid, 2019, p. 35).

We can conclude that artificial intelligence is faster and more accurate in completing administrative transactions, accessing knowledge, providing a clear and precise explanation for problems, deciphering ambiguous codes, and providing the best solutions for them, according to the input data.

Objectives of Artificial Intelligence

The science of artificial intelligence aims to understand the nature of human intelligence by enabling computer programs to simulate the intelligent behavior of humans. This means that

computer programs have the ability to solve problems or make decisions in specific situations. This is considered a significant turning point that goes beyond what is called "information technology." In information technology, the thinking process is performed by humans, and the main reason for using a computer is limited to its high speed (Al-Mutairi, 2022, p. 151). AI also aims to develop intelligent technologies to apply these technologies through computer devices, so that computers have intelligent behaviors when performing tasks or solving problems (Marcos, 2010, p. 14).

It aims to understand the nature of humans through computer programs that can simulate human behavior, which makes it an effective tool for dealing with educational procedures and the problems we face in education. AI has the ability to solve problems or act according to the situation.

Types of Artificial Intelligence

Artificial intelligence can be divided into three basic types, ranging from simple reactions to cognition and self-interaction, as follows (Khalifa, 2012, p. 75):

1. **Narrow Artificial Intelligence (Narrow AI):** This is the simplest type of AI, programmed to perform specific functions in a specific environment. Its behavior is considered a response to a specific situation, and it can only work in its own environment.
2. **Global or Strong Artificial Intelligence (General AI):** It is characterized by the ability to collect and analyze information and gather experiences from acquired situations to be qualified to make independent decisions.
3. **Super Artificial Intelligence (Superintelligence):** These are still experimental models, and the simulation aims to find humans. It can distinguish between two different situations: the first is an attempt to understand human thoughts and emotions that affect human behavior, and the second is the theory of a mind model. These models can express their internal state, predict and interact with the feelings and attitudes of others. They are the next generation of super-intelligent machines.

Thus, the multiplicity of types of artificial intelligence is clear according to the development and progress of computer systems and according to the need for them.

Artificial Intelligence in the Kingdom of Saudi Arabia

In 2020, the Kingdom of Saudi Arabia ranked **first in the Arab world** and **22nd globally** in the Global AI Index, up from 29th globally in 2019. The Kingdom also secured **second place globally** in the Government Strategy criterion and **ninth globally** in the Operating Environment criterion. This was according to the **Tortoise Intelligence** index report, which measures more than 143 indicators of the level of investment, innovation, and implementation of AI technologies across several criteria, such as the strength of infrastructure, operating environment, research, development, and others (Saudi Press Agency - SPA, 2020).

Saudi Cultural Missions

Objectives of Saudi Cultural Missions: The Saudi cultural missions abroad strive to achieve a set of noble goals, the most prominent of which are:

1. Serving scholarship students and overcoming the difficulties they face.
2. Participating in activities, events, and occasions in which the Kingdom of Saudi Arabia contributes in different countries, especially cultural activities related to the civilization of each country, and exchanging visits of intellectuals, book fairs, and others.
3. Receiving Saudi scientific delegations participating in conferences, seminars, and workshops and facilitating their tasks.
4. Presenting cultural, intellectual, and creative activities, and then various events that highlight the role of the scholarship student.
5. Holding special events to honor outstanding male and female students.
6. Supporting cultural missions with national cadres of qualified employees and specialized experts by holding scientific and cultural activities and events.

It is clear from the objectives of the Saudi cultural missions that they are keen to serve scholarship students and overcome the difficulties they may face, which confirms the great role that the missions play toward scholarship students (Ministry of Education - Education Abroad - Missions, 2020, pp. 2-10).

Tasks and Departments of Saudi Cultural Missions: Saudi cultural missions share the following departments:

1. Administrative Affairs
2. Financial Affairs
3. Academic Affairs
4. Cultural and Media Affairs
5. Information Technology
6. Social and Psychological Affairs

However, the tasks of these departments vary depending on the size of the mission and the number of students (Administrative Affairs: General Secretariat of Cultural Missions, n.d., pp. 6-7).

Literature review: Previous Studies

1. Artificial Intelligence

A study by **Michael Negnevitsky (2004)** titled, "Intelligence Systems," considered expert systems to be the key to success in the field of artificial intelligence despite the large number of intelligent developments in various fields of human knowledge. It is a mistake to overestimate the capabilities of this technology, as the difficulties are very complex and lie in both the technical and social worlds. The study's results concluded that expert systems are limited to a specific scope of expertise, and this scope is concerned with all the human psychological factors associated with it. Due to the narrow scope, expert systems are not as coherent and flexible as the user would like. When an expert system is given a different task from traditional problems, the system can try to solve it, and it can fail to do so, and it is difficult to verify the validity and integrity of expert systems, as there is currently no general method to analyze the degree of their completeness and consistency.

The study by **Wheatley & Hervieux (2019)** aimed to measure the role that artificial intelligence technology plays in university libraries in North America and the extent to which libraries are interested in supporting the adoption of this technology at all levels. The researchers evaluated 30 university libraries in Canada and the United States to determine the effectiveness of AI in library services. It reached a set of results, including:

- None of the libraries in the study sample adopted AI as part of their strategic plans.
- The libraries in the study sample gave a varying level of use to AI, but most of them are involved in offering courses on AI for students.
- Few of these libraries cooperate with other units within the university in order to coordinate efforts and initiatives regarding AI.

The study by **Johansson & Herranen (2019)** aimed to identify the reality of artificial intelligence in human resource management and to search for the implications of technological developments, especially AI, for the recruitment process. The study also aimed to identify the traditional recruitment process activities in which AI applications can be used. The study used the qualitative approach and relied on the interview as a data collection tool. The study population consisted of 8 experts in the field of human resource management from 8 international companies. The results of the study showed that the field of AI in recruitment is relatively new, and there are not many companies that use AI in all stages of the recruitment process. The study also indicated that the most suitable activities for applying AI are: pre-selection, communicating with candidates, and sending recruitment results to applicants.

The study by **Al-Huwaimel (2020)** aimed to diagnose the reality of the use of AI applications in human resource management at the Ministry of Education in the Kingdom of Saudi Arabia, to determine the requirements for their development using AI applications, and to present a proposed model for the development of human resource management at the Ministry of Education using AI applications. The study used the descriptive survey approach and relied on

the questionnaire and interview as data collection tools. The study population consisted of all managers and employees of human resource departments, teachers' affairs, educational training, and scholarship, numbering 639. One of the most prominent results was that the reality of using AI applications in human resource management at the Ministry of Education in the Kingdom of Saudi Arabia was "weak." The results also indicated that the most important requirements for developing human resource management at the Ministry of Education using AI applications are work style requirements, followed by infrastructure requirements, and finally administrative organization requirements.

The study by **Al-Sharari (2021)** aimed to analyze the effect of artificial intelligence on the quality of administrative decisions from the perspective of high school principals in Al-Jouf educational administration in the Kingdom of Saudi Arabia. The researcher used the descriptive analytical approach. The study sample consisted of 60 male and female principals of high schools in the Al-Jouf region in the academic year (2019-2020). The study reached some results, the most important of which is: there is a high statistically significant effect of the dimensions of artificial intelligence (management ability, user behavior, training and development, and the availability of experts) on the quality of the administrative decision. The study recommended the necessity of updating and developing the AI programs used to enable different administrations to make appropriate decisions at the right time.

The study by **Al-Zaaboot (2021)** aimed to reveal the aspects of convergence between artificial intelligence and the educational process and adopted the views of a number of literatures and theories explaining AI as a contribution to extrapolating the educational approach to AI technology. To achieve the objectives, the grounded theory approach for qualitative research was adopted, using the interpretive method. The most prominent results showed that the aspects of convergence between AI and the educational process are represented in the completion of some educational tasks, the completion of the teacher's administrative tasks, the change and development of curricula, the evaluation of students, the tracking of their experiences, and the change of the teacher's role from an indoctrinator of knowledge to a preparer and organizer of the learner's experiences within the classroom environment. The most prominent recommendations were: that officials understand the importance of planning the uses of AI carefully, with the involvement of actors in the field of education, such as the teacher and the learner.

Naif Jabali and Sara Al-Qahtani's (2022) study aimed to identify the degree of awareness of faculty members of AI skills in education and their relationship to experience and training programs at King Khalid University. The researchers used the descriptive approach and the questionnaire tool. The current research community consisted of all faculty members at King Khalid University in the second semester of the academic year (1441/1441 AH). The study sample was chosen by random method, where 411 of all faculty members at King Khalid University were selected. The research concluded that the degree of awareness of faculty members of AI skills is high. The results also concluded that there were no statistically

significant differences for the effect of experience and training programs on the degree of awareness of faculty members of AI skills in education.

Alya Al-Mutairi (2022) also conducted a study that aimed to measure the effect of an electronic learning environment based on AI on the development of e-learning skills among female students of the College of Education at Umm Al-Qura University. To achieve the study's objectives, the researcher used the quasi-experimental approach with the two-group system: the experimental group, which numbered 30 female students, and the control group, which numbered 30 female students. The experimental group was taught using an electronic learning environment based on AI, while the lecture method was used with the female students of the control group. For this purpose, the researcher designed a cognitive test to measure the cognitive aspects related to e-learning skills and an observation card to measure the performance aspect. The results of the study showed that there were statistically significant differences between the average scores of the female students of the experimental group in the development of the cognitive and performance aspects of e-learning skills in both the pre-application and the post-application, and this difference was in favor of the post-application. In light of the study's results, the researcher recommended working on building intensive training programs to develop e-learning skills among female students and the necessity of employing AI skills in the academic courses for female students at the university.

As for the study by **Al-Azzam and Al-Zafra (2023)**, it aimed to find out the effect of applying artificial intelligence on the quality of administrative decisions in the Emirate of the Asir region. The questionnaire was used as a tool to collect information and data for the sample individuals. The study population consisted of the employees of the Emirate of the Asir region, numbering 600 male and female employees. The sample was 200 employees, who were selected randomly. The results of the study concluded that there is a statistically significant relationship between the use of AI methods and the quality of administrative decisions. The results also showed a "positive" correlation between the academic qualification and the field of making administrative decisions. The study recommended the necessity of developing the skills of employees with the aim of dealing with the different methods of artificial intelligence.

Previous Studies: Cultural Missions

The study by **Al-Enezi (2012)** aimed to explore the future challenges that will face Saudi cultural missions abroad. The researcher used the Delphi method and applied his study to 25 missions. The cultural attaché was the main subject of the research. The study reached a number of results, the most important of which are: cultural and academic challenges averaged 69.75%, and the most important of them are: the lack of clarity of the plans of the Ministry of Higher Education regarding the cultural activity of the missions they work in, and the absence of specific tasks that make the missions independent of the work of the embassies. Also, the administrative challenges averaged 67.74%, and the most important of them are: the process of selecting and choosing employees in the missions is based on experience, and the weak communication between the cultural missions working abroad.

While the study by **Al-Shaabi (2016)** aimed to build a new scale called "QUSECUMI" to measure the quality of cultural mission services. The study population consisted of all Yemeni students studying abroad (9,300 male and female students). The study sample was 527 male and female students. One of the most important results of the study is that it provided a methodology for developing the "QUSECUMI" model to measure the quality of cultural mission services. It consisted of 45 items distributed over five dimensions: (support and assistance, place, communication, financial, and cultural and social).

The study by **Al-Qahtani (2019)** aimed to build a proposed vision for developing the performance of Saudi cultural missions in light of strategic management. The researcher used the descriptive survey approach through a questionnaire applied to the entire study population, which numbered 123 from cultural attachés, their assistants, Saudi academic supervisors, and leaders in the General Directorate of Cultural Missions. The study reached a number of results, the most important of which are: the reality of the performance of Saudi cultural missions for the dimensions of strategic management is arranged as follows: evaluation and follow-up, then application and implementation, then planning and formulation, and that the most important obstacles facing the development of the performance of Saudi cultural missions in light of strategic management are: the lack of communication between cultural missions abroad and the absence of coordination between the stages of strategic management. The researcher also built a proposed vision for developing the performance of Saudi cultural missions in light of strategic management.

Commentary on Previous Studies

The current study agreed with all previous studies in studying the topic of **artificial intelligence and cultural missions**. The current study differed from previous studies in studying the topic of artificial intelligence and its application to **administrative operations in Saudi cultural missions**. The current study also agreed with some of the previous studies in using the **descriptive survey approach** and the **questionnaire as a tool for collecting information**. The current study also agreed with some of the previous studies in the study population, who are **supervisors in cultural missions**.

The current study was unique from all previous studies in the **objective of this study**, which is to know the reality of administrative operations, the difficulties facing the application of artificial intelligence in administrative operations in cultural missions, and to provide a proposed vision for the application of artificial intelligence in administrative operations in Saudi missions. The current study also benefited from previous studies in writing the **theoretical framework** and building the **tool** in this study.

Study Methodology and Procedures

We will present a detailed overview of the field study's methodology and the procedures used to implement it and achieve its objectives. Starting with an explanation of the method used, then identifying the study's population and sample, and their distinguishing characteristics. In addition, we will explain how the data collection tool was designed, the mechanism for

verifying its validity and reliability, and finally, touch upon the procedures for its application and the statistical methods used to process the data and extract the results. The following is a detailed presentation of this:

Study Method

To achieve the study's objectives and answer its questions, the **descriptive survey method** was used. As defined by Al-Assaf (2016, p. 211), it is the method "that involves surveying all members of the research population, or a large sample of them, with the aim of describing the phenomenon under study in terms of its nature and degree of existence only, without going beyond that to, for example, studying relationships or inferring causes." This method is considered the most suitable for the current study because it relies on describing the actual reality of the phenomenon, and then analyzing the results and building conclusions in light of the current reality.

Study Population and Sample

The population of the current study consisted of all supervisors and administrators at the **Saudi Cultural Mission in the United Kingdom** in London, numbering (27) employees. Due to the limited size of the study population, a **comprehensive enumeration** approach was followed by applying the study tool to the entire population. After the field application, (21) valid questionnaires were obtained for statistical analysis.

Characteristics of the Study Population Members

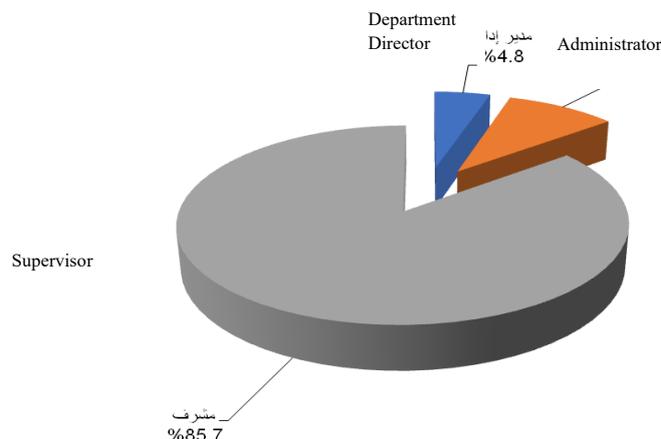
A number of key variables were identified to describe the members of the study population, including: (**nature of work - years of service at the mission**), which have significant indicators for the study results. They also reflect the academic background of the study population members and help establish the foundations upon which various study-related analyses are built. The details are as follows:

1. Nature of Work:

Table (1) Distribution of Study Population Members by Nature of Work

Nature of Work	Frequency	Percentage %
Department Director	1	4.8
Administrator	2	9.5
Supervisor	18	85.7
Total	21	100%

It is clear from Table (1) that **18** of the study population members, representing **85.7%**, have a nature of work as a supervisor, while **2** of them, representing **9.5%** (The text has a typo, it should be 9.5%, not 17.8%), are administrators. And **1** of them, representing **4.8%** of the total study population members, is a department director.

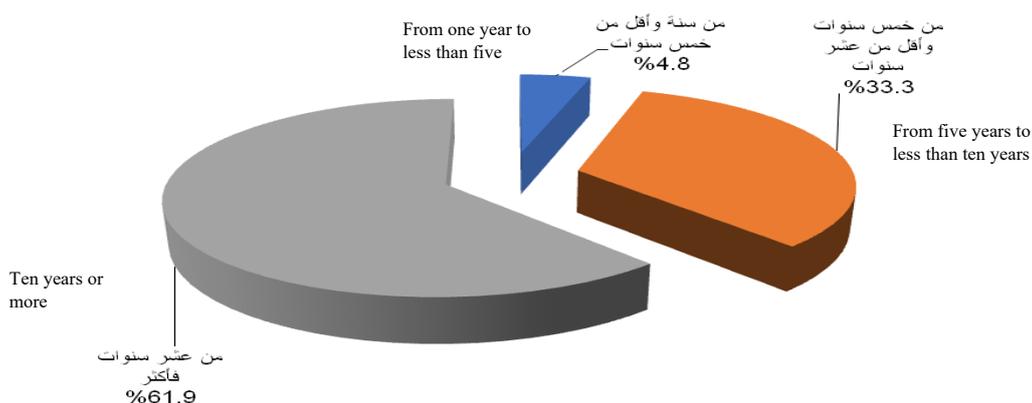


2. Years of Service at the Mission:

Table (2) Distribution of Study Population Members by Years of Service at the Mission

Years of Service at the Mission	Frequency	Percentage %
From one year to less than five years	1	4.8
From five years to less than ten years	7	33.3
Ten years or more	13	61.9
Total	21	100%

It is clear from Table (2) that **13** of the study population members, representing **61.9%**, have ten years or more of service at the mission. While **7** of them, representing **33.3%** of the total study population members, have from five to less than ten years of service at the mission. And **1** of them, representing **4.8%** of the total study population members, has from one to less than five years of service at the mission.



Study Tool:

The **questionnaire** was used as a data collection tool due to its suitability for the study's objectives, methodology, population, and for answering its questions.

1. Construction of the Study Tool:

After reviewing the literature and previous studies related to the current study topic, and in light of the study's data, questions, and objectives, the tool (the questionnaire) was constructed. In its final form, it consisted of three parts. The following is a presentation of how it was built and the procedures followed to verify its validity and reliability:

1. **Part One:** Contains an introductory overview of the study's objectives, the type of data and information to be collected from the study population members, with a guarantee of the confidentiality of the information provided and a commitment to use it for scientific research purposes only.
2. **Part Two:** Contains the preliminary data for the study population members, consisting of: (Nature of work - Years of service at the mission).
3. **Part Three:** Consists of **28 statements**, distributed across two main axes. Table (3) clarifies the number of questionnaire statements and their distribution among the axes.

Table (3) The Questionnaire and its Statements

Axis	Number of Statements
The reality of applying artificial intelligence in administrative operations at Saudi cultural missions	16
The difficulties facing the application of artificial intelligence in administrative operations at cultural missions	12
Questionnaire	28 statements

A **three-point Likert scale** was used to obtain the responses of the study population members, according to the following levels of agreement: (**High - Medium - Low**). This scale was then quantified by assigning a score to each of the previous statements, as follows: High (3) points, Medium (2) points, Low (1) point.

To determine the length of the three-point Likert scale categories, the **range** was calculated by subtracting the minimum value from the maximum value: $(3 - 1 = 2)$. This was then divided by the highest value in the scale: $(2 \div 3 = 0.67)$. After that, this value was added to the lowest value in the scale (1) to determine the upper limit for this category. Thus, the category lengths became as shown in the following table:

Table (4) Three-Point Likert Scale Category Divisions (Response Mean Limits)

#	Category	Category Limits	
		From	to
1	Low	1.00	1.67
2	Medium	1.68	2.34
3	High	2.35	3.00

The range length was used to obtain an objective judgment on the means of the study population members' responses after they were statistically processed.

B) Study Tool Validity:

The validity of the study tool means ensuring that it measures what it was designed to measure. It also means that the questionnaire includes all the elements that are to be analyzed on one hand, and that its statements are clear on the other, so that they are understandable to everyone who uses it. The validity of the study tool was ensured through the following:

1. Face Validity of the Study Tool (Expert Validity):

To determine the face validity of the questionnaire and ensure that it measures what it was designed to measure, its initial version was presented to a number of specialized experts on the study topic. The expert professors were asked to evaluate the quality of the questionnaire in terms of its ability to measure what it was designed to measure and to judge its suitability for the study's objectives. This was done by identifying the clarity of the statements, their relevance to the axis, their importance, their linguistic integrity, and by providing any recommended modifications, deletions, or additions to the statements. After gathering opinions and reviewing the notes, the necessary modifications agreed upon by the majority of the experts were made, and the questionnaire was then finalized.

2. Internal Consistency Validity of the Tool:

To verify the internal consistency validity of the questionnaire, **Pearson's Correlation Coefficient** was calculated to determine the degree of correlation of each statement in the questionnaire with the total score of the axis.

Table (5) Pearson's Correlation Coefficients for the Statements of the First Axis with the Total Axis Score

First Axis			
(The reality of applying artificial intelligence in administrative operations at Saudi cultural missions)			
Statement No.	Correlation Coefficient with Axis	Statement No.	Correlation Coefficient with Axis
1	0.815**	9	0.641**
2	0.766**	10	0.812**
3	0.729**	11	0.620**
4	0.803**	12	0.768**
5	0.792**	13	0.748**
6	0.765**	14	0.793**
7	0.776**	15	0.732**
8	0.812**	16	0.659**

First Axis
Statistically significant at the significance level of (0.01) or less.

It is clear from Table (5) that the values of the correlation coefficient for each statement with its axis are **positive** and **statistically significant** at a significance level of (0.01) or less. This indicates the internal consistency validity among the statements of the first axis and their suitability for measuring what they were designed to measure.

Table (6) Pearson's Correlation Coefficients for the Statements of the Second Axis with the Total Axis Score

Second Axis			
(The difficulties facing the application of artificial intelligence in administrative operations at cultural missions)			
Statement No.	Correlation Coefficient with Axis	Statement No.	Correlation Coefficient with Axis
1	0.661**	7	0.753**
2	0.557**	8	0.643**
3	0.745**	9	0.758**
4	0.743**	10	0.525**
5	0.665**	11	0.561**
6	0.658**	12	0.729**
Statistically significant at the significance level of (0.01) or less.			

It is clear from Table (6) that the values of the correlation coefficient for each statement with its axis are **positive** and **statistically significant** at a significance level of (0.01) or less. This indicates the internal consistency validity among the statements of the second axis and their suitability for measuring what they were designed to measure.

C) Study Tool Reliability:

The reliability of the study tool was verified by using the **Cronbach's Alpha (α) reliability coefficient**. Table (7) shows the Cronbach's Alpha reliability coefficient values for each axis of the questionnaire.

Table (7) Cronbach's Alpha Coefficient for Measuring the Reliability of the Study Tool

Questionnaire	Number of Statements	Questionnaire Reliability
The reality of applying artificial intelligence in administrative operations at Saudi cultural missions	16	0.948

Questionnaire	Number of Statements	Questionnaire Reliability
The difficulties facing the application of artificial intelligence in administrative operations at cultural missions	12	0.858
Overall Reliability	28	0.936

It is clear from Table (7) that the **overall reliability coefficient** is high, reaching (0.936). This indicates that the questionnaire has a high degree of reliability that can be relied upon for the field application of the study.

Study Application Procedures:

After ensuring the validity and reliability of the questionnaire and its suitability for application, it was applied in the field by following these steps:

1. Distributing the questionnaire electronically and in hard copy.
2. Collecting the questionnaires, which numbered (21) in total.

Statistical Processing Methods:

To achieve the study's objectives and analyze the collected data, several appropriate statistical methods were used with the **Statistical Package for Social Sciences (SPSS)**.

The following statistical measures were then calculated:

1. **Frequencies and percentages:** To identify the characteristics of the study population members and determine their responses to the statements of the main axes included in the study tool.
2. **Weighted Mean:** To identify the average responses of the study population members to each statement of the axes, and it is also useful for ranking the statements according to the highest weighted mean.
3. **Mean:** To determine the extent to which the responses of the study population members to the main axes are high or low, and it is also useful for ranking the axes according to the highest mean.
4. **Standard Deviation:** To determine the extent of deviation of the study population members' responses for each statement of the study variables and for each of the main axes from their arithmetic mean. It is noted that the standard deviation illustrates the dispersion in the responses of the study population members for each statement of the study variables, in addition to the main axes. The closer its value is to zero, the more concentrated the responses and the lower their dispersion.

Analysis and Interpretation of Study Results

We will provide a detailed presentation of the results reached by the current study by answering the study questions according to the appropriate statistical treatments and then interpreting these results as follows:

Answering the First Question: What is the reality of the application of artificial intelligence in administrative operations at Saudi cultural missions?

To identify the reality of the application of artificial intelligence in administrative operations at Saudi cultural missions, frequencies, percentages, arithmetic means, standard deviations, and ranks were calculated for the responses of the study population members on the statements of the reality of the application of artificial intelligence in administrative operations at Saudi cultural missions. The results were as follows:

Table 8: Responses of the Study Population Members on the Reality of Applying Artificial Intelligence in Administrative Operations at Saudi Cultural Missions, Arranged in Descending Order According to Approval Averages.

N o.	Stateme nt	Freque ncy (k)	Agreement Level			Arith metic Mean	Stand ard Devia tion	Categ ory	Ra nk
		Perce ntage (%)	Hi gh	Medi um	Lo w				
3	The supervisor and administrative employee benefit from AI applications in maintaining the security and confidentiality of data at work.	k	7	9	5	2.10	0.768	Medi um	1
		%	.333	9.42	23.8.				

No.	Statement	Frequency (k)	Agreement Level			Arithmetic Mean	Standard Deviation	Category	Rank
		Percentage (%)	High	Medium	Low				
9	The supervisor and administrative employees rely on special software to organize work at the mission.	k	5	11	5	2.00	0.707	Medium	2
		%	.238	4.52	23.8.				
2	The supervisor and administrative employees benefit from AI applications in organizing information and data in their work.	k	4	12	5	1.95	0.669	Medium	3
		%	.190	2.57	23.8.				
5		k	4	12	5	1.95	0.669		4

N o.	Stateme nt	Freque ncy (k)	Agreement Level			Arith metic Mean	Stand ard Devia tion	Categ ory	Ra nk
		Perce ntage (%)	Hi gh	Medi um	Lo w				
	The supervisor and administrative employee use advanced and modern AI software in their work.	%	.190	2.57	238.			Medi um	
4	The supervisor and administrative employee benefit from AI applications in building a database for all mission staff.	k	6	8	7	1.95	0.805	Medi um	5
		%	.286	1.38	333.				
1	The supervisor and administr	k	3	12	6	1.86	0.655	Medi um	6
		%	.143	1.57	286.				

No.	Statement	Frequency (k)	Agreement Level			Arithmetic Mean	Standard Deviation	Category	Rank
		Percentage (%)	High	Medium	Low				
	ative employe e use AI applicati ons to solve problems they face in their work.								
11	The supervisor and administrative employe e use AI applicati ons to evaluate the performa nce of mission staff.	k	3	12	6	1.86	0.655	Medi um	7
		%	.143	1.57	286.				
8	The supervis or and administr ative employe e use software to set	k	5	8	8	1.86	0.793	Medi um	8
		%	.238	1.38	381.				

N o.	State ment	Freque ncy (k)	Agreement Level			Arith metic Mean	Stand ard Devia tion	Categ ory	Ra nk
		Perce ntage (%)	Hi gh	Medi um	Lo w				
	future plans for the mission.								
1 0	The supervis or and administr ative employe e rely on special software to help analyze the current situation of the mission.	k	5	8	8	1.86	0.793	Medi um	9
		%	.23 8	1.38	38 1.				
7	The supervis or and administr ative employe e use special software to determin e the mission's vision,	k	4	9	8	1.81	0.750	Medi um	10
		%	.19 0	9.42	38 1.				

N o.	State ment	Freque ncy (k)	Agreement Level			Arith metic Mean	Stand ard Devia tion	Categ ory	Ra nk
		Perce ntage (%)	Hi gh	Medi um	Lo w				
	mission, and objective s.								
6	The supervis or and administr ative employe e use AI software applicati ons in making decisions in their work.	k	5	7	9	1.81	0.814	Medi um	11
		%	.23 8	3.33	42 9.				
1 6	The supervis or and administr ative employe e employ AI applicati ons in developi ng the skills of their employe es by	k	3	10	8	1.76	0.700	Medi um	12
		%	.14 3	6.47	38 1.				

N o.	Stateme nt	Freque ncy (k)	Agreement Level			Arith metic Mean	Stand ard Devia tion	Categ ory	Ra nk
		Perce ntage (%)	Hi gh	Medi um	Lo w				
	training them to complete administrative tasks.								
15	The supervisor and administrative employee employ AI applications in simulating the work of creative designers in proposing solutions .	k	2	10	9	1.67	0.658	Low	13
		%	.95	6.47	42.9.				
12	The supervisor and administrative employee's predictio	k	2	10	9	1.67	0.658	Low	14
		%	.95	6.47	42.9.				

No.	Statement	Frequency (k)	Agreement Level			Arithmetic Mean	Standard Deviation	Category	Rank
		Percentage (%)	High	Medium	Low				
	n of future problems is done through AI applications.								
13	The supervisor and administrative employee use "Narratives for Tableau" software in preparing administrative reports that contain a written and organized explanation of charts.	k %	3 .143	7 3.33	11 524.	1.62	0.740	Low	15

N o.	Stateme nt	Freque ncy (k)		Agreement Level			Arith metic Mean	Stand ard Devia tion	Categ ory	Ra nk
		Perce ntage (%)	Hi gh	Medi um	Lo w					
1 4	The supervis or and administr ative employe e benefit from algorith ms to avoid bias in decisions	k	1	10	10	1.57	0.598	Low	16	
		%	.4 8	6.47	47 6.					
Overall average							1.83	0.538	Medium	1 8 3

It is clear in Table (8) that the study population members agree to a **medium degree** on the reality of applying artificial intelligence in administrative operations at Saudi cultural missions, with an arithmetic mean of **1.83 out of 3.00**. This average falls into the second category of the three-category scale, (from 1.68 to 2.34), which is the category that indicates a medium degree option on the study tool. The researcher interprets the study population's medium-degree agreement on the reality of applying artificial intelligence in the cultural mission in the UK as due to the important role of the cultural missions in coordinating between the scholarship authorities in the Kingdom and the universities and institutes where students study. This necessitates the cultural mission to apply computer software in administrative operations so that the cultural mission can perform the roles assigned to it, which include supervision, follow-up, development, and solving problems that scholarship students may face. Therefore, the agreement of the study population members was to a medium degree. This result differs from the result of the study by **Al-Sharari (2021)** that there is a high effect of applying artificial intelligence on decisions, and the study by **Al-Huwaimel (2020)** that the degree of the reality of applying artificial intelligence in human resource management is weak.

It is clear from the results in Table (8) that the most prominent features of the reality of applying artificial intelligence in administrative operations at Saudi cultural missions are represented in statements numbered: (3, 9, 2, 5, 4, 1, 11, 8, 10, 7, 6, 16) which were arranged in descending order according to the agreement of the study population members on them to a **medium degree**, as follows:

1. Statement No. (3), which is: "The supervisor and administrative employee benefit from artificial intelligence applications in maintaining the security and confidentiality of data at work," came in the first place in terms of the study population's medium-degree agreement on it, with an arithmetic mean of **2.10 out of 3**. The researcher interprets this result as a medium degree due to the importance of the cultural missions, as they are one of the sensitive government institutions that require a high degree of information protection and confidentiality to protect and preserve the information and data of their scholarship students. Therefore, this statement came in the first place in terms of the agreement of the study population members.
2. Statement No. (9), which is: "The supervisor and administrative employee rely on special software to organize work at the mission," came in the second place in terms of the study population's medium-degree agreement on it, with an arithmetic mean of **2.00 out of 3**. It is clear from the previous statement that work in the cultural mission requires computer software that helps the supervisor to follow up on the educational process of the scholarship students and make the necessary decisions to organize their affairs, and helps the administrative employees to complete the required tasks. Therefore, it came in the second place in terms of the agreement of the study population members.
3. Statement No. (2), which is: "The supervisor and administrative employee benefit from artificial intelligence applications in organizing information and data in their work," came in the third place in terms of the study population's medium-degree agreement on it, with an arithmetic mean of **1.95 out of 3**. The researcher interprets this result by the extent to which the supervisor and administrative employee benefit from artificial intelligence applications in administrative operations, such as planning, organizing, supervising, and following up, due to the large number of scholarship students, their spread in the UK, and their distance from the cultural mission's headquarters in London. Therefore, it came in the third place in terms of the agreement of the study population members.
4. Statement No. (5), which is: "The supervisor and administrative employee use advanced and modern artificial intelligence software in their work," came in the fourth place in terms of the study population's medium-degree agreement on it, with an arithmetic mean of **1.95 out of 3**. The researcher interprets this result by the importance of the role played by cultural missions, as they represent the official channel for communication with scholarship students and those studying at their own expense in the UK. In addition, the cultural mission is concerned with cultural and scientific relations at all levels, and this

requires the use of advanced and modern software in administrative work. Therefore, it came in the fourth place in terms of the agreement of the study population members.

5. Statement No. (4), which is: "The supervisor and administrative employee benefit from artificial intelligence applications in building a database for all mission staff," came in the fifth place in terms of the study population's medium-degree agreement on it, with an arithmetic mean of **1.95 out of 3**. The researcher interprets this result by the importance of having a database of information and data to make it easy for supervisors and administrators to follow up on the progress of scholarship students in their studies, organize cultural activities, supervise and follow up on students' activities, and help them overcome the obstacles they face. Therefore, the agreement of the study population members on statement No. (4) was to a medium degree.

It is clear from the results in Table (8) that the least prominent features of the reality of applying artificial intelligence in administrative operations at Saudi cultural missions are represented in statements numbered: (15, 12, 13, 14) which were arranged in descending order according to the study population's **low-degree** agreement on them, as follows:

1. Statement No. (15), which is: "The supervisor and administrative employee employ artificial intelligence applications in simulating the work of creative designers in proposing solutions," came in the thirteenth place in terms of the study population's low-degree agreement on it, with an arithmetic mean of **1.67 out of 3**. The researcher interprets this result as taking a low degree because the study population members agreed that the supervisor or administrator does not need high-level programming skills that simulate designers in their practice of administrative operations in their work at the cultural mission. Therefore, the agreement of the study population members on statement No. (15) was to a low degree.
2. Statement No. (14), which is: "The supervisor and administrative employee benefit from algorithms to avoid bias in decisions," came in the sixteenth place in terms of the study population's low-degree agreement on it, with an arithmetic mean of **1.57 out of 3**. The researcher interprets this result as it is sometimes difficult to avoid bias; a person may search for information that supports their beliefs about a decision and reject data that contradicts what they believe, and this may be in the interest of the scholarship student.

Answering the Second Question: What are the difficulties facing the application of artificial intelligence in administrative operations at Saudi cultural missions?

To identify the difficulties facing the application of artificial intelligence in administrative operations at cultural missions, the frequencies, percentages, arithmetic means, standard deviations, and ranks were calculated for the responses of the study population members on the statements of the difficulties facing the application of artificial intelligence in administrative operations at cultural missions. The results were as follows:

Table 9: Responses of the Study Population Members on the Difficulties Facing the Application of Artificial Intelligence in Administrative Operations at Cultural Missions, Arranged in Descending Order According to Approval Averages

No.	Statement	Frequency (k)	Agreement Level			Arithmetic Mean	Standard Deviation	Category	Rank
		Percentage (%)	High	Medium	Low				
6	The abundance of administrative burdens on the supervisor and administrative employee.	k	9	7	5	2.19	0.814	Medium	1
		%	9.42	3.33	8.23				
10	The weak infrastructure of the cultural mission for applying artificial intelligence software in administrative work.	k	6	11	4	2.10	0.700	Medium	2
		%	6.28	4.52	0.19				
8	Some administrative employees' fear of failure in the application.	k	4	13	4	2.00	0.623	Medium	3
		%	0.19	0.62	0.19				
12	The absence of regulations governing the use of artificial intelligence applications.	k	5	10	6	1.95	0.740	Medium	4
		%	8.23	6.47	6.28				
5	The scarcity of human cadres with computer skills to apply artificial intelligence in work.	k	5	10	6	1.95	0.740	Medium	5
		%	8.23	6.47	6.28				
11	The weak legal protection that controls the	k	3	13	5	1.90	0.625	Medium	6
		%	3.14	9.61	8.23				

No.	Statement	Frequency (k)	Agreement Level			Arithmetic Mean	Standard Deviation	Category	Rank
		Percentage (%)	High	Medium	Low				
	employment of artificial intelligence.								
4	The lack of experience of the supervisor and administrative employee in the field of artificial intelligence applications in administrative work.	k	3	13	5	1.90	0.625	Medium	7
		%	3.14	9.61	8.23				
9	The weak awareness of the importance of artificial intelligence applications in administrative work.	k	3	13	5	1.90	0.625	Medium	8
		%	3.14	9.61	8.23				
1	The lack of readiness of the devices and software in the scientific mission for applying artificial intelligence.	k	6	7	8	1.90	0.831	Medium	9
		%	6.28	3.33	1.38				
7	Resistance to change by the supervisor and administrative employee in administrative work.	k	5	8	8	1.86	0.793	Medium	10
		%	8.23	1.38	1.38				
3	The weak qualification level of the supervisor and administrative	k	2	12	7	1.76	0.625	low	11
		%	5.9	2.57	3.33				

No.	Statement	Frequency (k)	Agreement Level			Arithmetic Mean	Standard Deviation	Category	Rank
		Percentage (%)	High	Medium	Low				
	employee for artificial intelligence applications.								
2	The high financial costs required for the application of artificial intelligence.	k	2	9	10	1.62	0.699	Medium	12
		%	5.9	9.42	6.47				
Overall Average						1.92	0.441	Medium	

It is clear from Table (9) that the study population members agree to a **medium degree** on the difficulties facing the application of artificial intelligence in administrative operations at cultural missions with an arithmetic mean of **1.92 out of 3.00**. This average falls into the second category of the three-category scale (from 1.68 to 2.34), which is the category that indicates a medium-degree option on the study tool. The researcher interprets the study population's medium-degree agreement on the difficulties axis as the cultural mission in the UK may face some difficulties that hinder the application of artificial intelligence in administrative operations, including the absence of algorithms that are compatible with the nature of administrative work in the cultural mission, or the scarcity of financial allocations for applying artificial intelligence in administrative operations in the cultural mission. This result is consistent with the findings of the **Michael Negnevitsky (2004)** study that artificial intelligence faces complex difficulties in technology or from those who practice technology.

It is clear from the results in Table (9) that the most prominent difficulties facing the application of artificial intelligence in administrative operations at cultural missions are represented in statements numbered: (6, 10, 8, 12, 5, 11, 4, 9, 1, 7, 3), which were arranged in descending order according to the study population members' agreement on them to a **medium degree**, as follows:

1. Statement No. (6), which is: "The abundance of administrative burdens on the supervisor and administrative employee," came in the first place in terms of the study population's **medium-degree** agreement on it, with an arithmetic mean of **2.19 out of 3**. This can be due to the large number of scholarship students, especially after the opening of the King Salman Scholarship Program, against the small number of

supervisors and administrators working in the missions, and the state's directive to reduce the number of supervisors and administrators and restructure the cultural missions, as stated by the Human Resources Manager at the mission. This led to an abundance of routine work and follow-up on the needs of scholarship students. Therefore, the agreement of the study population members on statement No. (6) was to a medium degree.

2. Statement No. (10), which is: "The weak infrastructure of the cultural mission for applying artificial intelligence software in administrative work," came in the second place in terms of the study population's **medium-degree** agreement on it, with an arithmetic mean of **2.10 out of 3**. We can interpret this statement as possibly being due to the scarcity of financial allocations from the ministry for development in cultural missions, despite the modernity of the buildings of the cultural missions. The researcher visited the cultural mission in London and Washington, and all of them are modern buildings. The scarcity of the budget allocated for development may be due to the large financial allocations (salaries, tickets, health insurance, etc.) for the large number of scholarship students and their companions. Therefore, the agreement of the study population members on statement No. (10) was to a medium degree. This is what the **Al-Huwaimel (2020)** study emphasized, that providing an infrastructure for applying artificial intelligence is a basic requirement.
3. Statement No. (8), which is: "Some administrative employees' fear of failure in the application," came in the third place in terms of the study population's **medium-degree** agreement on it, with an arithmetic mean of **2.00 out of 3**. The researcher can interpret this result as some of them may fear losing their jobs if they fail, or some of them may not receive the necessary support for development, so they feel frustrated, afraid, and confused in performance, and consequently fail in performance. Some of them have difficulty adapting and responding to change, and therefore fear failure in the application. Therefore, the agreement of the study population members on statement No. (8) was to a medium degree. The study by **Al-Azzam and Al-Zafra (2023)** recommends the necessity of developing the skills of employees with the aim of dealing with the different methods of artificial intelligence, and thus the fear of failure will disappear.
4. Statement No. (12), which is: "The absence of regulations governing the use of artificial intelligence applications," came in the fourth place in terms of the study population's **medium-degree** agreement on it, with an arithmetic mean of **1.95 out of 3**. This result can be interpreted as artificial intelligence is modern and in the process of being applied in several government sectors, and there is no center in the Ministry of Education for artificial intelligence concerned with setting the regulations and systems that govern the use of artificial intelligence in administrative work at cultural missions. Therefore, the agreement of the study population members on statement No. (12) was to a medium degree. The study by **Al-Zaaboot (2021)** recommends the importance of planning the

use of artificial intelligence, which requires setting regulations and systems that govern the use of artificial intelligence in administrative operations.

5. Statement No. (5), which is: "The scarcity of human cadres with computer skills to apply artificial intelligence in work," came in the fifth place in terms of the study population's **medium-degree** agreement on it, with an arithmetic mean of **1.95 out of 3**. The researcher can interpret this result as most supervisors and administrators have easy computer skills that enable them to write reports, follow up on emails, and respond to them from scholarship students, or that the appointment of employees in the missions is based on years of experience only. However, applying artificial intelligence in administrative operations requires high computer skills that enable them to solve problems, develop work, and make future decisions about the situations of scholarship students. Therefore, the agreement of the study population members on statement No. (5) was to a medium degree. This differs from the findings of the study by **Jabali and Al-Qahtani (2022)** that the degree of awareness of faculty members of artificial intelligence skills is high and is consistent with the result of the study by **Al-Enezi (2012)** which emphasizes that the process of selecting and choosing employees in the missions is based on experience.

It is clear from the results in Table (9) that the least prominent difficulties facing the application of artificial intelligence in administrative operations at cultural missions are represented in statement No. (2), which is: "The high financial costs required for the application of artificial intelligence," with an arithmetic mean of **1.62 out of 3**. The researcher interprets this result as it requires the existence of modern technologies, and sophisticatedly manufactured and programmed computer machines and devices to simulate the work of the human mind, as well as cooperation with international research institutes to benefit from international experiences in the application of artificial intelligence, and providing periodic maintenance for devices, and providing protection programs for entered data and information, and providing practitioners from supervisors and administrators who have high skills in using computers. Therefore, the agreement of the study population members on statement No. (5) was to a medium degree.

Answering the Third Question: What is the proposed vision for the application of artificial intelligence in administrative operations at Saudi cultural missions?

Methodology: The proposed vision was built according to a scientific methodology, including several stages arranged as follows:

1. Collecting literature and theoretical frameworks on the topic.
2. Studying the reality of applying artificial intelligence in administrative operations at Saudi cultural missions through a questionnaire submitted to supervisors and administrators working at the Saudi Cultural Mission in the UK in London.
3. Analyzing the results of the field study, extracting the findings, and including them in the vision.

4. Reviewing the proposed vision by the arbitrators.
5. Presenting the proposed vision in its final form.

Philosophy:

1. Change and development are a way of life and a universal law.
2. The cultural mission is a government institution that provides its services to beneficiaries, especially scholarship students and researchers.
3. Globalization and the rapid technological development and advancement it imposes must be kept up with.
4. The Kingdom of Saudi Arabia is adopting modern administrative trends through digital transformation in the management of the government sector.
5. Cultural missions need development and change to serve the largest number of students in different countries of the world.

Premises:

1. The Tenth Development Plan (1438-1441 AH), whose priorities include improving the effectiveness of government performance, raising the efficiency of its productivity, and deepening the culture of quality and mastery among members of Saudi society through the introduction of technology programs.
2. The results of the current field study.
3. The state's direction and interest in establishing the National Center for Artificial Intelligence (SADIA).

Justifications:

1. The results of Arab and foreign studies have revealed the importance of using artificial intelligence in business management to achieve quality and reduce cost and effort.
2. The application of artificial intelligence will transform Saudi cultural missions into integrated, interconnected smart units.
3. Due to the large number of scholarship students and their spread in several cities that are far from the mission, applying artificial intelligence is the optimal solution for supervising, following up, and monitoring students.
4. The application of artificial intelligence will enable officials in cultural missions to restructure the mission and rebuild its administrative and traditional systems, so that employees are transformed into knowledge creators.
5. The need for a proposed vision for the application of artificial intelligence in the management of the Saudi cultural mission.

Objectives: The proposed vision primarily aims to apply artificial intelligence in administrative operations at Saudi cultural missions.

Detailed Objectives:

1. Improving the quality of administrative work and the administrative environment in Saudi cultural missions, and developing new smart methods and technologies that work to raise the ideal efficiency of administrative performance.
2. Increasing the efficiency and effectiveness of administrative practices and operations for supervisors and administrators by applying systems based on the use of smart computers.
3. Restructuring and rebuilding the stagnant and traditional administrative units in Saudi cultural missions and transforming them into units with high efficiency and effectiveness.
4. Analyzing difficult and complex administrative problems and reaching superior solutions.
5. The leaders in the General Secretariat of the Missions follow up on the administrative activity of the Saudi cultural missions and the services that the missions provide to the beneficiaries.

Requirements:

1. Providing an appropriate technical environment for applying artificial intelligence.
2. Providing a sufficient number of supervisors and administrators with practical and scientific competence who are capable of using artificial intelligence.
3. Providing training courses and programs in the field of artificial intelligence for administrative employees working at Saudi cultural missions.
4. Allocating a sufficient budget to meet the needs of Saudi cultural missions for advanced computer devices.
5. Providing support and periodic maintenance for computer devices.
6. Providing a strong and fast internet network in all departments and facilities at Saudi cultural missions.
7. Following up on, developing, and improving computer programs to face future challenges.

Stages of Applying the Proposed Vision

1. Establishing a specialized center within the General Secretariat of Saudi Cultural Missions to follow up on the application of artificial intelligence in all administrative units across various Saudi cultural missions, and creating a document to define the controls that ensure the safe and proper use of artificial intelligence.

2. Updating and developing the devices used to be compatible with artificial intelligence programs.
3. Spreading the culture of artificial intelligence among administrative employees working at Saudi cultural missions through various programs and initiatives, and organizing workshops on the mechanisms of applying artificial intelligence.
4. Providing training courses to raise technology-related skills in how to use artificial intelligence applications in administrative work for supervisors at Saudi cultural missions.
5. Allocating a specific budget for the application of artificial intelligence.
6. Following up and measuring the impact of applying artificial intelligence on the efficiency and effectiveness of administrative work in supervision, beneficiary follow-up, and strategic planning for the development of work in cultural missions.

Obstacles to Applying the Proposed Vision and Ways to Overcome Them

1. The increasing speed of technological change, transformation, and development in administrative methods makes it difficult for cultural missions to keep up. This can be overcome with courses, initiatives, and foresight for everything new for the benefit of the missions.
2. The reduction of the number of administrative employees working at cultural missions by more than half after the restructuring of cultural missions and rationalizing spending. This can be overcome by reconsidering the re-appointment of those with scientific and practical experience in technology in general and in artificial intelligence in particular.
3. The weak culture of artificial intelligence among some supervisors and administrators working at Saudi cultural missions. This can be overcome by holding cultural and training courses, workshops, and spreading the culture of awareness of the importance of artificial intelligence.
4. The use of traditional methods in administrative work, bureaucracy, and routine. This can be overcome by setting new procedures and work rules that are compatible with the application of artificial intelligence, and establishing an artificial intelligence center for the General Secretariat of the Missions to follow up on the work and set regulations and systems to define work controls.

Summary of Results

1. The study population members agree to a **medium degree** on the reality of applying artificial intelligence in administrative operations at Saudi cultural missions, with an arithmetic mean of **1.83 out of 3.00**.

2. The study population members agree to a **medium degree** on the difficulties facing the application of artificial intelligence in administrative operations at cultural missions, with an arithmetic mean of **1.92 out of 3.00**.
3. A proposed vision was presented for the application of artificial intelligence in administrative operations at Saudi cultural missions.

Recommendations

1. Building intensive training programs to develop artificial intelligence skills among supervisors and administrative employees working at cultural missions.
2. Working on appointing scientific and practical expertise in the field of administrative systems in general, and in artificial intelligence in particular, from among the supervisors and administrative employees in cultural missions.
3. Reducing the administrative burdens on supervisors in cultural missions.
4. Continuously following up on the infrastructure of devices, software, and networks to ensure their validity during the application of artificial intelligence programs, in light of the rapid developments and changes in information and communications technology.
5. Establishing a good incentive system for those who excel in the field of work in the artificial intelligence program in administrative work.
6. Providing support from the General Secretariat of Cultural Missions for the application of artificial intelligence, by spreading the culture of electronic administrative work, and spreading the advantages and benefits resulting from the application of artificial intelligence.
7. Enacting the necessary legislation and regulations to organize electronic administrative work based on artificial intelligence, as well as legislation concerned with information protection.
8. Allocating a sufficient budget for the application of artificial intelligence and providing an information crime protection system that preserves the entered data and achieves information security for cultural missions.
9. Establishing a specialized center in the General Secretariat of Saudi Cultural Missions to follow up on the application of artificial intelligence in all administrative units in various Saudi cultural missions, and creating a document to define the controls that ensure the safe and proper use of artificial intelligence.

References

- [1] Al-Azzam, Saad; and Al-Zafra, Fayez. (2023). The effect of applying artificial intelligence on the quality of administrative decision-making in the Emirate of the Asir region, *The Arabic Journal of Administration*, Vol. 43, No. 4 (under publication) - December.

- [2] Al-Bashr, Fatima Abdullah. (2021). *Artificial Intelligence in Administrative Work: Requirements and Challenges*. Amman: Dar Al-Hamid for Publishing and Distribution.
- [3] Al-Tamimi, Nouf Nasser. (2019). The Problems Facing Graduate Students on Scholarship Abroad at Prince Sattam bin Abdulaziz University. *Journal of Educational Sciences*, 419, 18-474.
- [4] Jebli, Nayef; and Al-Qahtani, Sara. (2021). The Degree of Faculty Members' Awareness of Artificial Intelligence Skills in Education and Its Relationship to Experience and Training Programs at King Khalid University, *Journal of the Association of Arab Universities for Education and Psychology*, Vol. 9, No. 3.
- [5] Khataybeh, Nour Abdel-Halim. (2015). The Degree of Academic Leaders' Satisfaction with the Application of E-Management and Its Relationship to Performance Quality in Jordanian Public Universities in the Northern Governorates. Unpublished doctoral dissertation, Yarmouk University, Irbid.
- [6] Khalifa, Ehab. (2018). Opportunities and Threats of Artificial Intelligence in the Next Ten Years. *Al-Ahdath Journal* (27).
- [7] Al-Zaaboot, Sumayah. (2021). *Innovative Human, Social, and Natural Research, Our Vision for a Prosperous Economy and a Better Future by (2030)*.
- [8] Al-Sharari, Jamal. (2021). The Effect of Artificial Intelligence on the Quality of Administrative Decision from the Perspective of High School Principals in Al-Jouf Educational Region, *Suluk Journal*, Vol. 8, No. 1, pp. 14-37.
- [9] Al-Shuaibi, Muhammad Al-Saghir. (2016). A Proposed Scale for Evaluating the Quality of Cultural Mission Services Provided to Students. *38(147)*, pp. 37-11.
- [10] Sheikh, Hijrah. (2018). The Role of Artificial Intelligence in Managing the Electronic Customer Relationship of the Algerian People's Credit (CPA), *The Academy Journal for Social and Human Studies*, Vol. 10, No. 2, Hassiba Ben Bouali University, Chlef, Algeria.
- [11] Al-Abdulmonem, Fahd Muhammad. (2017). Administrative Obstacles Facing Scholarship Students in the United States of America and the United Kingdom and Proposed Ways to Overcome Them: A Field Study. *Educational and Psychological Studies*, 94, 99-143, 171-11.
- [12] Al-Ubaidi, Raafat Asim. (2010). The Role of Artificial Intelligence in Achieving Green Production: An Exploratory Study of the Performance of Managers in a Sample of Operating Industrial Companies. *Kirkuk University Journal of Administrative and Economic Sciences*, 5(1), 37-12.
- [13] Al-Assaf, Saleh Ahmed. (2016). *Introduction to Research in Behavioral Sciences*. 3rd ed. Riyadh: Dar Al-Zahraa for Publishing and Distribution.
- [14] Al-Enezi, Saud Eid. (2012). A Predictive Study of the Most Important Challenges that Saudi Cultural Missions Abroad will Face until (2020). *Arabian Gulf Message*, 33(126), 65-114.

- [15] Al-Faifi, Abeer Massoud. (2016). Administrative and Academic Problems Facing Saudi Graduate Students on Scholarship at British Universities (A supplementary research for a master's degree, unpublished). Imam Muhammad bin Saud Islamic University.
- [16] Al-Qahtani, Muhammad Majdal. (2019). The Development of the Performance of Saudi Cultural Missions in Light of Strategic Management: A Proposed Vision. [Unpublished doctoral dissertation]. Imam Muhammad bin Saud Islamic University.
- [17] Marqous, Samir Saad. (2010). The Use of Artificial Intelligence and Expert Systems in Building a Tax Knowledge Base and Developing the Performance of the Tax Officer. *Journal of Economics and Accounting*, (132).
- [18] Al-Mutairi, Alia. (2022). The Effect of an Electronic Learning Environment Based on Artificial Intelligence on the Development of E-Learning Skills among Female Students of the College of Education, *The Arab Journal for Science and Research Publishing. Journal of Curricula and Teaching Methods*. Vol. 1, No. 7, June.
- [19] Al-Huwaimel, Ibtisam Nasser. (2020). *The Development of Human Resource Management at the Ministry of Education in the Kingdom of Saudi Arabia Using Artificial Intelligence Applications: A Proposed Model*. Unpublished doctoral dissertation, King Saud University, Riyadh.
- [20] Saudi Press Agency (SPA). (2020). The Kingdom is First in the Arab World, and 22nd Globally in the Global Artificial Intelligence Index. Retrieved on 1/24/2022.
- [21] Wang, M. -H Artificial Intelligence and Subfields, Adjunct. Department of (2017) Computer Engineering: Santa Clara University.
- [22] Deesing, J. (2020). What is Artificial Intelligence? Retrieved from <https://www.lifewire.com/what-is-artificial-intelligence-4149995>
- [23] Nadimpalli, M. (2017). Artificial Intelligence Risks and Benefits. *International Journal of Innovative Research in Science, Engineering and Technology*, 6(6), 1-5
- [24] Chang, W. Y. (2019). A Data Envelopment Analysis on the Performance of Using Artificial Intelligence-Based Environmental Management Systems in the Convention and Exhibition Industry. *Ekoloji Dergisi*, 107
- [25] Borana, J. (2016). Applications of artificial intelligence & associated technologies. *Proceeding of International Conference on Emerging Technologies in Engineering, Biomedical, Management and Science*.
- [26] Johansson, J. & Herranen, S. (2019). The application of artificial intelligence (AI) in human resource management: Current state of (AI) and its impact on the traditional recruitment process. Bachelor Thesis, Jonkoping University, Sweden.
- [27] <https://www.spa.gov.sa/viewfullstory.php?lang=ar&newsid=21650>
- [28] Wheatley, A., & Hervieux, S. (2019). Artificial Intelligence in Academic Libraries: An Environmental Scan. *Information Services & Use*, Pre-press (Pre-press), 1-10.
- [29] Wikipedia. (s. d.). NAO (robotique). Retrieved from Wikipedia: <https://fr.wikipedia.org/wiki/NAO>
- [30] 30-29 July 2021 - Istanbul - Turkey, The Twelfth International Scientific Conference, pp. 239-272

- [31] Khare, K., Stewart, B., & Khare, A. (2018). Artificial Intelligence and the Student Experience: An Institutional Perspective. *IAFOR Journal of Education*, 6(3), 63-78.
- [32] Russel, S., & Norvig, P. (2010). *Artificial Intelligence: A modern approach*. New Jersey: Pearson Education, Inc.
- [33] Wadhwa, D. (2017). USING ARTIFICIAL INTELLIGENCE TECHNOLOGIES FOR PERSONALIZED LEARNING AND RESPONSIVE TEACHING: A SURVEY. *International Journal Of Advance Research in Science and Engineering*, 6 (1), 207-217
- [34] Adamu, S; Awwalu, J (2018). The Role of Artificial Intelligence (AI) in Adaptive eLearning System (AES) Content Formation: Risks and Opportunities involved. *International Conference & Exhibition on ICT for Education, Training & Skills Development. ELearning Africa, Kigali Rwanda, September 26-28.*
- [35] Fernández, Y; Fernández, L; Aburto, L (2019). Artificial Intelligence and its Implications in Higher Education, *Propósitos y Representaciones*, Vol. 7, N° 2: pp. 536-568