

عنوان البحث

أثر تطبيق الذكاء الاصطناعي على الوظائف الإدارية في المملكة العربية السعودية

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CHAPTER 1

INTRODUCTION

1.1. General Introduction

There is no question that artificial intelligence (AI) has a significant impact on the labor market and that this effect will continue in the near future as some jobs will be automated or completely eliminated, while others will be created or transformed. Because machines and programs that operate with artificial intelligence can perform routine and repetitive tasks with greater speed and accuracy than humans, this may naturally result in the abolition of jobs, but it may also lead to other changes in the labor market, such as job creation or transformation.

Artificial intelligence technology is rapidly evolving and producing many fundamental benefits for economies, societies and individuals. Artificial intelligence technologies across different sectors are introducing new products and services. Realizing the potential of artificial intelligence requires realizing these benefits as widely as possible.

One of the subfields of computer science is artificial intelligence, often known as smart machines or directed programming, which refers to a system's capacity for autonomous learning. Science and technology are at the heart of artificial intelligence. It is a science that merges a variety of disciplines, including psychology, linguistics, and computer technology, engineering, math, and cognitive sciences, etc. Additionally, it tries to create systems based on expertise in a certain sector so that senses can give a computer the capacity to think, see, speak, hear, and move.

The most recent development of the human mind in the final fifty years of the twentieth century is artificial intelligence. Before computers, electronics, or even electricity existed, humans looked for things that might share some of these traits. It aims to understand how to instruct the computer to carry out tasks better carried out by people, which causes it to replace some jobs.

On the other side, as artificial intelligence becomes more prevalent, new employment possibilities in fields like data science, machine learning, and others will arise. These positions demand a high level of competence and can pay well for their employees.

1.2. Research Questions

Due to their inability to interact and deal with the data of this era and its paces, the majority of institutions in developing countries seek development and progress. At this point, these institutions have no choice but to turn to artificial intelligence, where they discover a new and entirely different pattern from the traditional management of what artificial intelligence offers. Since most departments now rely on modern technology for all of their administrative tasks, including planning, organizing, directing, and electronic control, it is difficult to do without new and distinctive skills.

Traditional management no longer has a problem with managing people and administrative tasks alone; instead, it has a problem with the leaders' capacity to grow the organization and gain it more experience based on the vast number of fast-changing external variables in the surrounding workplace. Since the information and communication revolution significantly dominated the management of change by applying the available information to meet the objectives of institutions, reliance on information and communication technology has become the cornerstone of modern administrations.

The effectiveness of artificial intelligence is evident in eliminating administrative corruption and accelerating work that helps institutions achieve their goals, given the importance of artificial intelligence in the corporate world in general and the Saudi business climate in particular, which worries employees in Saudi organizations.

Since many services, whether governmental or private, are provided through the use of artificial intelligence applications, this results in the cancellation of some tasks and functions that employees once performed themselves. Saudi institutions are among the institutions that apply artificial intelligence and rely heavily on electronic business. This is represented in the ability of the employee to manage operations electronically.

From the foregoing, the researcher believes that it is necessary to identify the change in administrative jobs in Saudi institutions due to the use of artificial intelligence in the majority of businesses, which contributed to the reduction of a number of jobs, and therefore the research problem is summarized in answering the following main question:

What is the impact of using artificial intelligence applications on the future of administrative jobs in Saudi institutions?

Regarding the main question, the research can include the following sub-questions:

- 1- What is the reality of artificial intelligence in Saudi institutions?
- 2- What is the extent of the change in the quantity and quality of administrative jobs after the introduction of artificial intelligence in Saudi institutions?
- 3- Is there a statistically significant difference at the level of significance ($\alpha \leq 0.05$) from the point of view of employees in Saudi institutions about the impact of introducing artificial intelligence applications on administrative jobs according to (Educational Qualification - Age - Years of Experience)?

1.3. Research Objectives

This research aims to achieve the following objectives:

1. Identify the extent of use the Saudi institutions to artificial intelligence applications and their effects on the size and quantity of various administrative jobs.
2. Identify the impact of artificial intelligence components (expert systems - neural networks - networks of genetic algorithms) on administrative functions in Saudi institutions.
3. Provide recommendations to decision makers in Saudi institutions on the one hand, and individuals on the other hand, on how to benefit from artificial intelligence applications.

1.4. Significance of the Study

This research is important from different perspectives, as follows:

1. **Theoretical Importance:** This research will help to enrich the scientific library which will derive its importance from the depth of the debate on this subject, as it is considered the subject of the development of intelligence, one of the most

important topics that have huge effects on administrative jobs, because of its dangers in reducing jobs in institutions, and as indicated by many researches and studies that discuss and analyze the impact of artificial intelligence on the future of jobs, and this research will seek to verify the validity of hypotheses on this topic, also the research behind the fears that most individuals have about artificial intelligence and what this term could mean and its impact on administrative jobs, and whether artificial intelligence will replace employees in the labor market or not, all of which will give additional importance to the research. The importance of the research is represented in the results it presents to those in charge of managing Saudi institutions, by knowing the extent of the impact of the application of artificial intelligence on the future of administrative jobs.

2. **Practical Importance:** This research will enable organizations companies in Saudi Arabia to improve the vision related to the applications of artificial intelligence and its positive and negative effects on the administrative jobs in these institutions, and the jobs that artificial intelligence causes to be eliminated or curtailed, as well as the new jobs that it adds to the structure of administrative jobs in institutions.

CHAPTER 2

REVIEW OF LITERATURE

2.1. According to Artificial intelligence

A number of researchers have provided several definitions of artificial intelligence, Al-Talidi, (2021) described it as a field of computer science that focuses on building intelligent machines and has grown to be a crucial component of the technology sector. Basic Problems of Artificial Intelligence is one of the extremely technical and specialized areas of artificial intelligence research. A key component of artificial intelligence research is the programming of computers to have certain abilities, such as knowledge, reasoning, problem-solving, perception, learning, planning, the capacity to operate and move objects, and knowledge engineering.

AI is an abbreviation for artificial intelligence. Artificial intelligence (AI) is the result of using cognitive science techniques to construct something that can accomplish things that only humans can, such as thinking, natural communication, and problem solving. AI is significant because it has the potential to assist humans improve their cognitive abilities and to automate tasks that are currently difficult or impossible for humans to complete.

Artificial intelligence (AI), sometimes known as machine intelligence, is intelligence demonstrated by computers, as opposed to natural intelligence demonstrated by people and other animals, such as "learning" and "problem solving."

AI research is described in computer science as the study of "intelligent agents": any technology that observes its environment and performs actions that maximize its chances of success.

Artificial intelligence (AI) has penetrated our daily lives like never before, and we have yet to discover all of the various ways it might thrive.

Microsoft, Uber, Google, Facebook, Apple, Amazon, Oracle, Intel, IBM, and Twitter are all fighting to lead the market and acquire the most inventive and promising AI startups.

AI is a rapidly emerging technology with enormous potential to increase worker productivity, increase business efficiency, and inspire creativity in new goods and services. At the same time, AI can be used to automate current employment, aggravate inequality, and lead to worker discrimination. While earlier technical advancements in

automation tended to effect "routine" operations, AI has the potential to automate "non-routine" tasks, thus exposing broad swaths of the workforce to disruption. The challenge for governments is to promote AI growth and innovation while protecting employees and consumers from various sorts of harm (The Impact of Artificial Intelligence On the Future of Workforces in The European Union and The United States of America).

The three primary categories of artificial intelligence, which range from simple reaction to perception and self-interaction, are as follows (Al-Talidi, 2021):

1. Limited or inadequate artificial intelligence It is the most basic type of artificial intelligence, and artificial intelligence is preprogrammed to carry out specific tasks in a given environment. Behaviour is viewed as a reaction to a given situation, and artificial intelligence can only function within the constraints of its environment. An example of this is the IBM robot "Deep Blue," which defeated Garry Kasparov, the world chess champion.
2. Strong or general artificial intelligence is characterised by the capacity to gather information, analyse it, and build experiences from the circumstances it encounters. Examples of applications for this type of AI include instant conversation bots and personal self-help software.
3. 3. Superior artificial intelligence: These models, which are currently in the experimental stage and aim to mimic human behaviour, may be divided into two main categories. The first is that it has a limited capacity for social interaction while trying to comprehend how human ideas and emotions influence behaviour. As the future generation of super-intelligent robots, these models are capable of expressing their inner states, predicting the emotions and attitudes of others, and interacting with them.

A number of researchers have provided several definitions of artificial intelligence (Habeeb, 2017). A key component of the technology sector, artificial intelligence is a subfield of computer science that strives to build intelligent machines. High-tech research is a hallmark of artificial intelligence studies. Knowledge engineering is a crucial component of artificial intelligence research. The fundamental issues of artificial intelligence involve programming computers to possess qualities like knowledge, logic, problem-solving, perception, learning, planning, and the capacity to manipulate and move objects.

According to (Shukla & Vijay, 2023), artificial intelligence is a field of computer science that focuses on the study and development of computer systems. Artificial intelligence incorporates some forms of intelligence, such as systems that learn new concepts and tasks, and it helps us explore the world and come to informed conclusions. It was further defined as the science that is interested in examining the concepts that are incorporated into machines so that they can react to stimulation in a manner similar to how humans typically react, such as the capacity to think, judge, and intend, so that the machine can evaluate, criticize, and select various points of view within itself and thereby be able to produce work. By means of human talent (Ashehri,2019).

According to the study, artificial intelligence can be identified by several fundamental characteristics: It must meet the following requirements in order to be marketable: the system must be conceived of as the service it will provide in order to perform the purpose well enough, in comparison to other competing products, to justify its design and manufacture. It must be functional: the system must be able to perform the function for which it was designed.

Big data: As the availability of greater amounts of data and its sources (organized and unorganized) today allows the existence of artificial intelligence capabilities, and computing also helped, the researcher believes that artificial intelligence emerged in the 1950s of the 20th century and reached what it is today because of a combination of several factors. Along with the impact that social media platforms have had in the creation and sharing of AI tools and applications, they have also aided in the development of numerous AI-related fields, including deep learning and reinforcement.

Research Variables

The following variables are used to achieve the research's goals:

1. Independent variable: artificial intelligence, which consists of three variables:
 - Expert systems
 - Neural networks
 - Genetic algorithm network
2. Dependent Variable: Administrative positions in Saudi companies.

Since improving human capital performance inevitably results in higher levels of institutional effectiveness and considering that scientific research primarily contributes

to community service and civilized upgrading, it is a crucial source of human resource development that provides science and development in ordered, human capital is one of the most important factors affecting the success of institutions operating in various economic and service sectors (Al-Azzam, 2020).

It is still early for thinking and creativity, and the current success experienced by artificial intelligence programs is a development for specific software specialized in specific applied fields in which the machine includes the outcome of thinking. This is true despite the great progress created by artificial intelligence research towards imparting some of the characteristics of intelligence to say that there are programs that can simulate the human mind in its style on the computer. A person makes decisions based on his or her senses, knowledge, and personal experiences, both consciously and unconsciously. Because this information is ambiguous (vague, confusing, subjective), it is challenging for a computer to imitate a person's purpose (Ababneh & Hackett, 2019).

The particular talents that make up the human intellect that will be mimicked are summed up as follows (Al-Talidi, 2021):

1. Information is acquired and the capacity to learn and understand is developed by real practice, practical application, and experience gained; this enables correct issue differentiation, the separation of generalizations from specifics, and the exclusion of irrelevant information.
2. The capacity to react swiftly and with total flexibility to a variety of situations while maintaining objectivity, i.e., the freedom from being forced to engage in a certain behavior when repeatedly exposed to the same circumstance since this is behavior rather than automatic, intelligent behavior.
3. The capacity to choose wisely based on sensory and mental awareness of the problem's components, of options and their effects, and of the desired outcomes and the best actions that will lead to them.
4. The capacity to extrapolate general rules from specific examples, grasp the substance of things, and discern between various informational forms.
5. The capacity to learn new things and apply them to difficulties one experiences, in addition to life experience and situational awareness.

According to the study, artificial intelligence may be identified by five fundamental characteristics: It must be functional (the system must be able to execute the function for which it was built), manufactural (the system must be able to be manufactured at the current moment), and design (the system must be aesthetically pleasing). The system must be envisioned as the service it will give in order to accomplish the purpose well enough, in contrast to other competing goods, to justify its design and manufacturing. The system's design is both conceivable by the designers and marketable (Al- Taledy, 2021).

- **Expert systems**

An expert system is a subset of artificial intelligence (AI), which is a branch of computer science concerned with creating systems that perform human-like intelligent functions. To achieve the standards of a real expert system, human intelligence must be rivaled; in essence, human thinking and reasoning processes are copied. The expert system, for example, should ask intelligent questions, solve issues, explain reasoning, and defend findings. An expert system is essentially an intelligent computer program that employs and inference processes to handle issues that are challenging enough to necessitate significant human skill (Artificial Intelligence and Expert System: Intelligent Library).

Some argue that expert systems were first introduced in 1965 by Feigenbaum and Lederberg, who created the Dendral system, that split knowledge storage from its processing engine and employed a rule-based engine for problem resolution.

The Dendral system was created to help scientists develop hypotheses for chemistry difficulties. Others, however, believe that the Mycin system, which was developed in the 1970s for medical applications, was the first true expert system.

Expert systems built by the library will handle a variety of issues. Most will concentrate on limited domains with a focus on local issues. Libraries will be among the first to build expert systems such as information and referral systems. Expert systems will play a significant part in library instruction, and clearing centers will enable libraries to share instructional systems. For user support, tutorial systems may eventually replace library workbooks and various forms of in-house documentation.

The progress of expert systems as knowledge media will shape the future development of expert systems in libraries. Expert systems, which are already intelligent and

occasionally useful computer programmers, will someday play an essential part in recording the working knowledge of people.

The demand for domain-specific expertise, technical know-how, and data accessibility is enormous in spatial analysis. It can be hard to make appropriate decisions in the absence of robust mechanisms that provide integrative support at various stages of the process of making choices. A decision support system must be intelligent in order to efficiently manage information and apply the appropriate type of structured, semi-structured, and weakly structured knowledge to assist in making decisions in a user-friendly manner (Artificial Intelligence and Expert Systems).

Their advancement necessitates the use of artificial intelligence and expert system techniques for expressing and infer geographic knowledge; to manage model and data development, information, and control flows; and spatial information system technologies for handling and displaying data. All of this must be integrated in a smooth manner. representation of knowledge and inference, which are fundamental components of expert systems, are critical in spatial reasoning.

As the systems do not attribute meaning to the complex learnt correlation network, they may acquire associations based on correlations other than causation.

They can potentially learn faulty associations as a result of inadequate, biased, or incorrect training data. In most circumstances, developing a faulty model will result in non-optimal judgements. The possibility of making incorrectly informed or biased decisions without the system or its developers being aware of it is one of the reasons why the public is apprehensive about the deployment of artificial intelligence, according to a survey conducted by Araujo et al (Expert system gradient descent style training: Development of a defensible artificial intelligence technique).

The study proposes a viable solution to the machine learning challenge that does not require the evaluation of linked correlation meaning. It considers the use of an expert system, which is built with meaning-assigned fact nodes (e.g., symptoms, test results, and diseases in a medical expert system, such as the original Mycin) and correlation rules (e.g., associations between symptoms and test results, and the diseases that they

indicate). Machine learning approaches are used to optimize its decision-making processes.

A rule-based expert system is made up of five parts: a knowledge base, a database, an inference engine, an explanation facility, and a user interface. The domain knowledge is stored in the knowledge base. The database contains a set of facts that are utilized to compare to the IF- THEN rules. The engine for inference provides reasoning, allowing the expert system to arrive at a solution.

The explanation facility tells the user why this specific approach was chosen. The user interface allows the user to interact with the other expert system components. The external interface, developer interface, text editor, book keeping facilities, debugging aids, and run time knowledge acquisition are among the various additional components. The developer interface enables developers to make changes to the knowledge base, rules, and facts. To enter inputs, the text editor provides a notepad-like interface. To track the modifications performed by the knowledge engineer in the knowledge base or inference engine, a bookkeeping capability is offered. Debugging tools enable the tracing of all rules fired throughout programmer execution. The run-time knowledge acquisition function allows you to add information or facts that are not already in a knowledge base or database.

The Benefits of Rule-Based Expert Systems

- (1) It represents knowledge in a natural way using if-then rules.
- (2) It has a consistent rule base structure. Each rule is a distinct piece of knowledge.
- (3) It decouples the body of knowledge from the inference engine, allowing the knowledge base to be updated without interrupting execution.
- (4) Through associating certainty variables with the rule basis expert system, it can execute even with inadequate and uncertain knowledge.
- (5) It's simple to grasp, and rules can be self-documented without the need for explicit translation.
- (6) The rule core system can be created in stages. A short prototype with a few rules can be created, and if it achieves the required outcome, further rules may be included to improve performance and efficiency.

Disadvantages of rule base expert systems

- (1) It lacks a hierarchical framework of knowledge representation, making it difficult to understand the logical interconnectedness of rules.

- (2) It does an extensive search, which slows down the system and prevents it from being used for real-time applications.
- (3) It can't learn from prior mistakes and can't defy the rules if an exception happens.
- (4) It is based on specialists' prior expertise, gut instincts, and a trial-and-error technique.

- **Neural networks**

Artificial intelligence has advanced rapidly in tandem with the fast growth of computer application technology. Artificial intelligence improves life and work by bringing intellect, ease, and comfort. The use of artificial intelligence in financial platform governance, investment advisory in nature, financial supervision, risk prevention, and control. Intelligent advisors currently have a big amount of assets. Bionic pharmaceuticals and Nano-robots are also being developed, and will result in significant modifications in medical practices.

today the demand of entertainment and consuming information has grown into the standard, and artificial intelligence's "selection" impacts you and me.

The ultimate goal of artificial intelligence is to enable robots to learn, think, reason, and make decisions in the same way that people do.

Convolutional neural networks are derived from multilayer perceptron's. Convolutional neural network is a type of supervised learning model, which is obtained by superimposing multiple convolutional layers, fully connected layers, and pooling. Supervised learning is "the process of using a collection of samples of known categories to adjust the parameters of the classifier to meet the required performance, also known as supervised training or contingent teacher learning."(Research on neural network algorithm in artificial intelligence recognition).

Traditional neural networks' most prevalent activation functions are Sigmoid and Tanh. Because of the existence of the aforementioned functions, neural networks have non-linear mapping capabilities. The above functions are examined from a mathematical standpoint. The non-linear functions Sigmoid and Tanh exhibit lesser signal gains on both sides and bigger gains in the center. The result of feature space mapping is quite nice.

Artificial intelligence recognition technology is already widely used in everyday life. Artificial intelligence recognition technology has the potential to surpass today's

achievements and become an indispensable tool in human life. This is primarily due to its ability to incorporate neural network algorithms into artificial intelligence recognition technology, improving its accuracy and allowing artificial intelligence recognition technology to be recognized by everyone and thus widely used in life.

ANN is a computing system which analyses information in parallel in each node of a network (neuron) (Shiffman, 2014). Individual neurons (also known as nodes) in ANNs receive input, process it, and provide an output; the system of many densely connected neurons displays intelligent and rich behaviors (Shiffman, 2014). The ANN is a data processing pattern that is influenced by how human neural systems handle data (Stergiou and Siganos, 2014). ANN analysis reveals that it is a data analysis method that mimics the way and function of the human brain. It is made up of several closely connected neurons that work together to complete a given mission (Rhouma et al. 2011) (Neural Networks, Artificial Intelligence and the Computational Brain).

A bias value can cause the activation function to alter, which is necessary for successful learning. In a neural network, the activation function represents the frequency of action potential firing in a neuron's cell. The most basic type of an activation function [70] is binary, like a Heaviside step function, which indicates whether or not a neuron is firing. However, plenty of neurons have to be utilized for the computation beyond linear separation when employing linear activation functions. Meanwhile, an ANN built with linear activation functions in (1) is unable to achieve a stable state after training because the numerical value of the activation function grows indefinitely (Machine Learning for Wireless Networks with Artificial Intelligence: A Tutorial on Neural Networks).

In general, the following are the key elements of an ANN made up of many neurons:

- An input layer is made up of a number of neurons that are utilized to represent the input signal that will be relayed in the neurons.
- The output layer is made up of a number of neurons that represent the output signal.
- A hidden layer made up of neurons that simulate the human brain.
- An input weight matrix representing the strength of connections between neurons in the input layer and neurons in the hidden layer.
- A neuron weight matrix which represents the connections between neurons in the buried layer.

- The output weight matrix represents the connections between neurons in the output layer and neurons in the hidden layer.

The feed-forward neural network (FNN) is one of the most basic types of artificial neural networks. An FNN is made up of three layers: (a) input layer, (b) hidden layer(s), and (c) output layer. The input weight matrix in this FNN architecture captures the strength of the connections between the neurons in the input layer and the hidden layer.

The neuron-by-neuron weight matrix captures the strengths of connections between neurons in the hidden layer, while the output weight matrix includes the strengths of connections between neurons in the output layer and hidden layer.

Recurrent neural networks, spiking neural networks, and deep neural networks are the three more advanced varieties of ANNs.

- **Recurrent Neural Networks (RNNs)**

1) Recurrent Neural Network Architecture: In a typical ANN, it is considered that each of the inputs are independent of each other or that all outputs are independent of each other.

2) Recurrent Neural Network Training: Because the connections between units form a directed cycle in the RNN design, feed-forward gradient descent methods like back propagation cannot be employed directly.

3) RNN - Echo State Networks Example: Next, to provide further light on how RNNs work, we discuss echo state networks (ESNs), a type of RNN that is conceptually straightforward and simple to construct.

- **Spiking Neural Network**

Spiking neural networks (SNNs) are another essential type of ANN. In contrast to other ANNs, such as FNNs and RNNs, which utilize a single number to describe neuron activation, SNNs adopt a better representation of biological neural networks to denote neuron activation.

1) Spiking Neural Network Architecture: The architecture of neurons in SNNs is similar to that of neurons in biological neural networks.

2) Spiking Neural Network Training: As previously stated, the activation value of each spiking neuron varies over time, and thus the connection strength (weight value) between two neurons varies over time in SNNs.

3) Liquid State Machine Example SNN: A liquid state machine (LSM) is a reservoir computing technique that is conceptually simple and easy to construct as part of an SNN.

- **Deep Neural Networks**

So far, all of the ANNs that have been discussed, including FNN, RNN, and SNN, have presupposed a single hidden layer. A shallow neural network is a common name for such an architecture.

1) Deep Neural Network Training: DNNs are frequently more difficult to train than shallow ANNs due to gradient instability when using gradient-based approaches.

2) Long Short Term Memory (LSTM): LSTMs are a type of "deep learning" RNN that can store information for either long or short periods of time.

3) Convolutional neural network (CNN) and Deep Spiking Neural Networks are two further types of DNN. Convolutional neural networks (CNNs) and deep spiking neural networks (DSNNs) are two further forms of deep ANN designs that have recently been proposed in attempt to outperform existing DNN structures in diverse applications.

- **Genetic algorithm network**

Genetic Algorithms (GAs) are appropriate methods for efficient Neural Network (NN) training that require little computer power requirements and no data forming sample training set requirements.

Changing the parameters of the genetic algorithm is critical for the quality and efficiency of the neural network process of training. Furthermore, it is proved how the topology of neural networks influences the quality of the outcomes collected, particularly the ability to extrapolate the problem, i.e., solve the problem repeatedly with fresh input conditions.

Evolutionary algorithms address problems by mimicking the behavior of actual creatures and employing techniques common to biological evolution, like selection, reproduction, and mutation (The Influence of Genetic Algorithms on Learning Possibilities of Artificial Neural Networks).

The advantages of utilizing genetic algorithms include versatility. The principle of an evolutionary algorithm may be tweaked and altered to handle the most complicated problems that arise and to discover a workable solution. The entire population of all possible solutions is taken into the account, meaning that the algorithm is not limited to one particular solution, and it has an unlimited number of solutions.

This algorithm is appropriate for problems with a large number of variables where the properties of the interrelationships are so extensive that they are impossible to solve using a traditional solution approach. The designed solutions can change randomly when using evolutionary algorithms. If a new solution is preferable, it replaces the previous one.

CHAPTER 3

Administrative Jobs

Administrative procedures are the specialized tasks performed by administrators to ease the operation of organizations or businesses and help them reach their objectives for prosperity, growth, development, and improved outputs. Education, planning, direction, assessment, communication, decision-making, and feedback are other administrative procedures (Sun, 2019).

The purpose of the study (Martini & Damati 2019) was to determine how artificial intelligence applications will affect pharmaceutical industry jobs and how they would contribute to the creation of new medicines. They can replace people while completing medical tasks at work, and artificial intelligence technology has established its value as effective instruments. This involves the creation of novel machine learning algorithms to forecast improvements in medication solubility in water utilizing strategies like the utilization of hydrotropism. They are frequently used in great quantity in scientific investigations.

By using a case study of the company "Terhal Technology and Business Limited" and an applied study of mobile tax applications in Khartoum, the study (Adam, 2019) sought to understand the contribution of information and communication technology to the creation of suitable jobs and employment opportunities. The descriptive and statistical approach, which had a 91% recovery rate, involved gathering data from a random probability sample of travelers from a Khartoum-based travel agency. Since information and communication technology is still being applied in Sudan, it is unclear how this will affect the country's labor market. However, information and communication technology does expand work prospects. Information on, and interest in, Sudan's information and communication technology infrastructure because it fosters innovation and fills in digital shortages.

Regarding the study (2019, Bishop), which aims to identify the economic factors that influence the availability of job opportunities and labor supplies, including technological change and access to quality educational resources, the researcher used the analytical descriptive approach in order to achieve the study's objectives, and the study sample included 88 graduates from various universities. The findings showed that

the skills gap, or the mismatch between the abilities required for professions and the skills held by employees, is one of the most significant reasons that explain the current discrepancy between the available employment and the supply. The report recommended that policymakers enhance access to the availability of training and education in order to overcome the skills gap.

According to a research (Ajam, 2018), artificial intelligence has an influence on how activities associated to high-performance organizations are completed. The study and questionnaire distribution were carefully planned out by the Ministry of Science and Technology. A questionnaire was used to gather information about the four forms of artificial intelligence that were under investigation, including expert systems, neural networks, genetic algorithms, and intelligent agents in the ministry. Forty questionnaires were issued and collected in full. The use of artificial intelligence had a substantial correlation and an influence on the duties and work of the departments evaluated by the ministry, which is the most significant of a number of results made.

According to Norsky and Hoffman (2022), a good job must satisfy people's material, physical, emotional, and cognitive needs through employment content that is balanced in its demands on employees and its resources for them. balancing these demands in terms of their physical, emotional, and cognitive demands; requiring supportive and productive social interactions with managers and coworkers; fair contractual terms for the minimum pay, hours worked, and job security; Safe and healthy physical working circumstances also help to improve employees' subjective well-being in terms of engagement, dedication, and usefulness as well as their objective well-being in terms of material well-being and physical and mental health.

The current era is described as the era of administrative functions, and thus the use of administrative functions and resources. It is real money that exceeds in its importance and value other natural resources. Therefore, the clear interest in the human being, his development, the investment of his intellectual potential, and considering it the basis for achieving any progress in the effectiveness of the organization, as well as the interest in integrating the sources of benefiting from jobs, organizing and developing them, and highlighting the importance of benefiting from them, is an utmost necessity. The use of jobs has become the highest percentage in the composition of the national product of

the economically, technically and cognitively advanced countries, and the importance of exploiting job opportunities in building and developing individuals, groups, organizations and states. The departments have been interested in building development and employment programs and creating jobs to achieve continuous improvement in the main and supportive operations and activities of the organization (Awaad, 2018).

The researcher identifies the administrative functions in a practical way, as it is the sum of what the individual possesses in different ways of knowledge in the administrative field, which facilitates the performance of administrative work.

The Corona pandemic has accelerated the process of digital transformation for most companies, bringing remote work into the mainstream work system, and the World Economic Forum found that 80% of decision makers plan to accelerate the automation of processes, while half of them are ready to increase the automation of jobs in the company. The Forum reached these conclusions through a survey of more than 300 of the world's largest companies, which together employ eight million people worldwide (Al-Yahya, 2020).

The public sector is eager to increase the use of big data, the Internet of Things, and bots, and technology managers rely on artificial intelligence systems and machines to perform tasks that could previously be done manually. Industries like finance, healthcare, and transportation are showing renewed interest in artificial intelligence. According to the World Economic Forum, by 2025, computers will handle up to 65% of information and data processing and retrieval, leaving people to handle only 35% of the job (Al-Yahya, 2020).

A quarter of all occupations in the United States and Europe will be replaced by artificial intelligence technology, but this might also lead to the creation of new jobs and an increase in productivity. In the end, this may result in a 7% rise in the annual value of products and services produced throughout the world. Governments are eager to promote investment in artificial intelligence (AI), which they claim will "eventually increase productivity across the economy" and which is considered a "major advance" given its capacity to produce material that is strikingly comparable to that produced by people. Governments have made an effort to reassure citizens about its effects.

Organizations want to make sure that AI enhances rather than disrupts the way work is done, providing better employment rather than eliminating workers. The impact of artificial intelligence will also differ depending on the different industries in which it is used. For example, while 46% of administrative tasks and 44% of legal professions can be completed by AI, these percentages will fall to 6% in the construction industry and 4% in the maintenance industry, respectively (Vallance, 2023).

The examination of job quality must distinguish between three conceptual levels: worker wellbeing assessed at the level of the individual holding the job, job characteristics measured at the level of the job, and antecedents measured at a level higher than the workplace (such as the company, labor market, or welfare state). Job content is the most crucial of the four job dimensions since it is the primary indicator of employee outcomes in terms of behavior, attitude, and wellbeing (Humphrey et al., 2007). Work intensity and emotional load are frequent markers of job demands, whereas autonomy, social support, and feedback are examples of workplace resources.

2.3. Hypothesis

With regard to the hypotheses of the study, and in order to achieve the purpose of the study, hypotheses were hypothesized, and they were formed on the basis of previous and current studies on the issue of the impact of artificial intelligence on administrative jobs in Saudi institutions, as follows: -

Hypothesis -1

H1: There is no statistically significant relationship to the impact of artificial intelligence on administrative jobs in Saudi institutions.

Accordingly, the following can be derived from this hypothesis:

H1-1: The first sub-hypothesis: There is no statistically significant relationship to the impact of expert systems on administrative jobs in Saudi institutions.

H1-2: The second sub-hypothesis: There is no statistically significant relationship to the effect of neural networks on administrative functions in Saudi institutions.

H1-3: The third sub-hypothesis: There is no statistically significant relationship to the effect of the genetic algorithm network on administrative jobs in Saudi institutions.

CHAPTER 4

THE METHODOLOGY

3. In order to achieve the objectives of the study, the researcher will use the descriptive approach to present the background of the subject and explain its variables, and the inductive and analytical approach will be used in order to test the hypotheses of the study and analyze the data of the questionnaire in order to draw conclusions.

A questionnaire will also be designed to collect data on the extent to which Saudi institutions use artificial intelligence applications and their impact on administrative jobs, based on literature and previous studies related to the subject. The questionnaire will be prepared and designed using a five-point Likert scale. Statistical analysis will also be performed using the Statistical Package for Social Sciences (SPSS) program.

Research Population:

The population in this research are all employees who work in companies with different activities in the Saudi Market.

Research Limitations:

Locational Limits: This research will cover all companies with different activities in Saudi Arabia.

Time Limits:

This research will cover the time period from July to September 2023.

Objective Limits: This research is limited to know the impact of artificial intelligence on administrative jobs in the Saudi market.

Data Collection:

In this research, the researcher will gather the data depending on two main sources as following:

Secondary data:

Data obtained from multiple sources such as scientific journals, books, documents, periodicals, reports, websites, research papers and previous studies. This research will use secondary data to obtain the theoretical background for the subject of the impact of artificial intelligence on administrative jobs in Saudi institutions.

Primary Data:

It's the data particularly customized to the analysis's requirements. It's collected from the field throughout the designed questionnaire distributed to a sample of the research investigating the research's variables. The researcher realized that the questionnaire is the best tool to collect the data due to the sample size, the nature of the study, and the required data.

Statistical Analysis Tools:

The questionnaire will be analyzed by SPSS, and the following statistical tools will be employed:

- 1. Frequency and Descriptive Analysis:** To determine the measures of central tendency which are mean, mode, and median. These measures help the researcher to evaluate the results.
- 2. Cronbach's Alpha for Reliability Statistics:** To measure the reliability of the questionnaire to ensure it measures well what it should be designed for.
- 3. Pearson Correlation Coefficient for Validity:** To measure the correlation between variables.
- 4. One-sample T-Test:** To compare the sample mean with a predefined value. It requires a random sample, independent data, and normally distributed data.

5. Analysis of Variance (ANOVA): To compare the means of several variables to determine the differences among them. It helps to find out whether to reject or accept the null hypothesis.

6. Multiple Linear Regression Model: To clarify the relationship between several the research independent variables and the dependent variable.

CHAPTER 5

ANALYSIS AND RESULTS

Statistical analysis of the questionnaire data

Axes of the applied study and methods of answering the questions:

- The first axis is related to artificial intelligence: through this axis to identify the extent of knowledge of the respondents about this modern topic, as well as the extent to which institutions use these applications, the type of application used, and the percentage of reliance on it by employees.

- As for the second axis, it is related to the impact of artificial intelligence on administrative functions in institutions, through which it is possible to know the extent to which institutions keep pace with artificial intelligence applications and the extent of their need, as well as the impact of these applications on activity.

Note that answering the questionnaire questions according to the five-point Likert method is as follows:

Table (1) Five Likert style

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Source: Prepared by the researcher

Accordingly, the results of the study are explained according to the following table:

Table (2)

The answers on questions	Coding	arithmetic mean	relative weight
Strongly Disagree	1	From 1 to less than 1.8	less than 36%
Disagree	2	From 1.8 to less than 2.6	From 36% to less than 52%
Neutral	3	From 2.6 to less than 3.4	From 52% to less than 68%
Agree	4	From 3.4 to less than 4.2	From 68% to less than 84%
Strongly Agree	5	4.2 and more	84 % and more

Source: (Aishush, 2021).

Characteristics of the study sample

The study sample individuals are characterized by a set of characteristics represented by gender, age, specialization, job position and the duration of job experience, as these characteristics will be explained through the following table:

Frequencies

Table (3) Statistics

	Gender	Age	Social Status	Education	Income	Experience	Function al Degree
N	Valid	150	150	150	150	150	150
	Missing	0	0	0	0	0	0
Mean		1.7000	1.8400	2.0333	2.1667	2.3400	3.4333
Median		2.0000	2.0000	2.0000	2.0000	2.0000	4.0000
Mode		2.00	2.00	1.00	2.00	1.00	5.00
Std. Deviation		.45979	.81989	1.18388	.61760	1.12822	.79326

The following table shows some statistical indicators such as the mean, median, mode, and standard deviation of the personal data of the participants in the questionnaire. These indicators indicate that they are centered around the arithmetic mean, which indicates the consistency of the data.

Frequency Table

Table (4) Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	45	30.0	30.0
	Female	105	70.0	100.0
	Total	150	100.0	100.0

It is clear from the table related to gender data that 70% of the sample size are women and 30% are men.

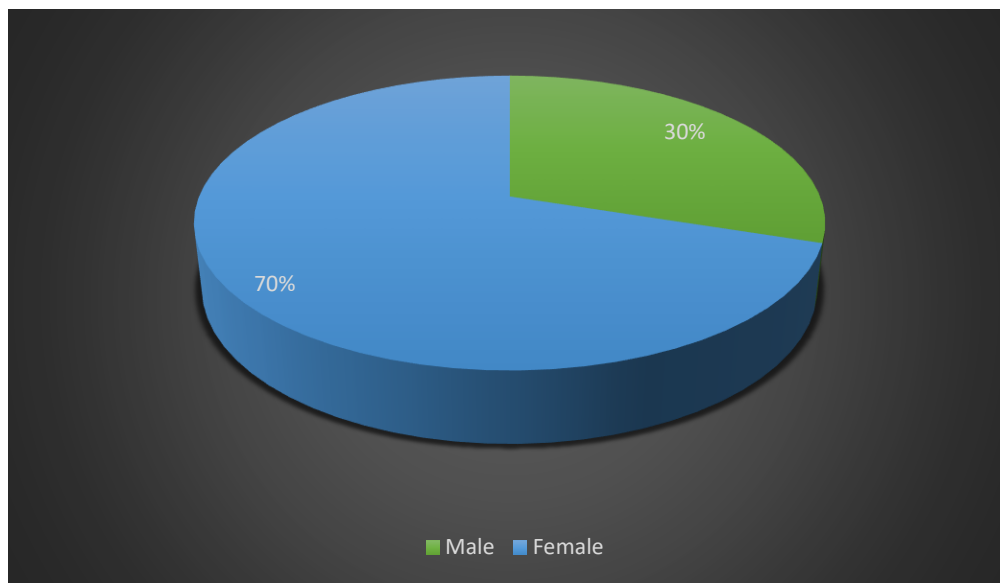


Figure (1) Gender

Table (5) Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 30	55	36.7	36.7	36.7
	From 30 To 39	72	48.0	48.0	84.7
	From 40 To 49	16	10.7	10.7	95.3
	From 50 To 59	6	4.0	4.0	99.3
	More than 60	1	.7	.7	100.0
	Total	150	100.0	100.0	

It is clear from the size of the sample in relation to age that 48% are between the ages of 30 and 39 years, 36.7% are under the age of 30, 10.7% are between the ages of 40 and 49, and 4% are between the ages of 50 and 59. 0.7% are over 60 years old.

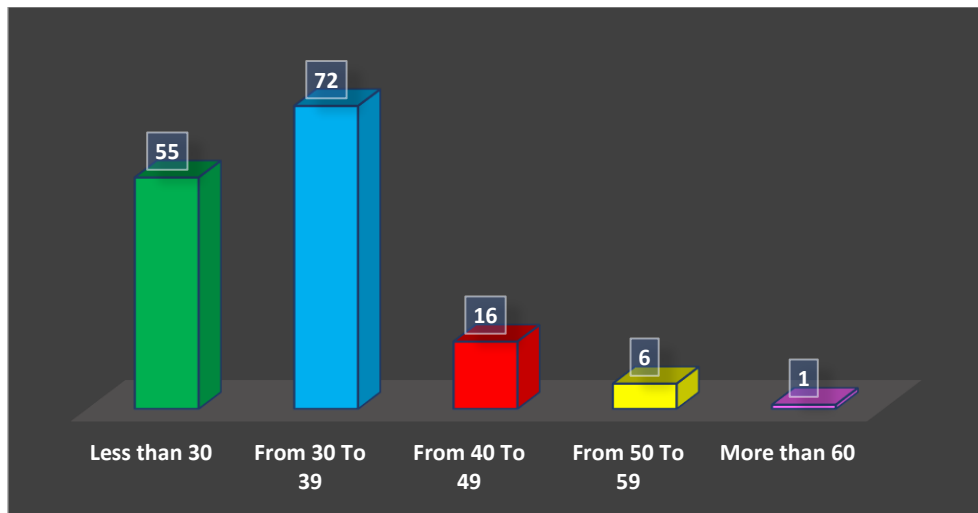


Figure (2) Age

Table (6) Social Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	69	46.0	46.0	46.0
	Single	40	26.7	26.7	72.7
	Divorced	33	22.0	22.0	94.7
	Widow	8	5.3	5.3	100.0
	Total	150	100.0	100.0	

It is clear from the previous table that 46% of the sample size are married, 26.7% are single, 22% are divorced, and 5.3% are widowed.

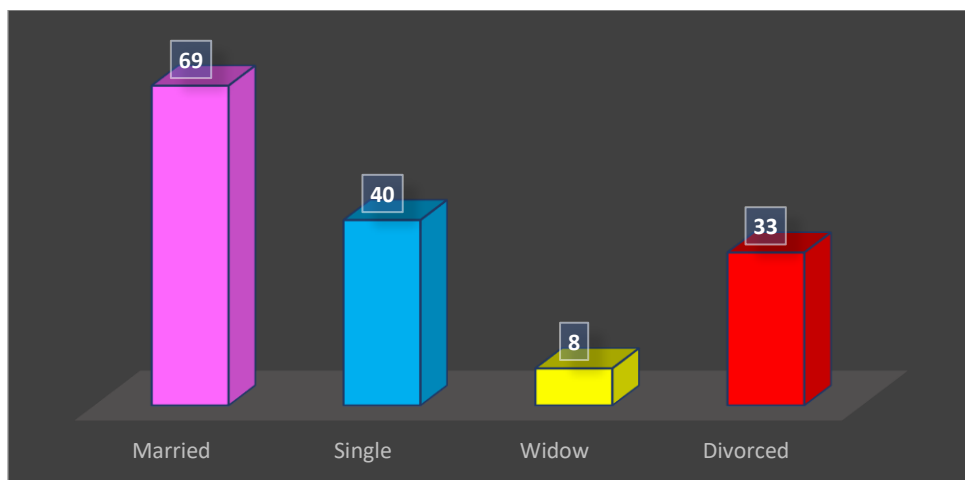
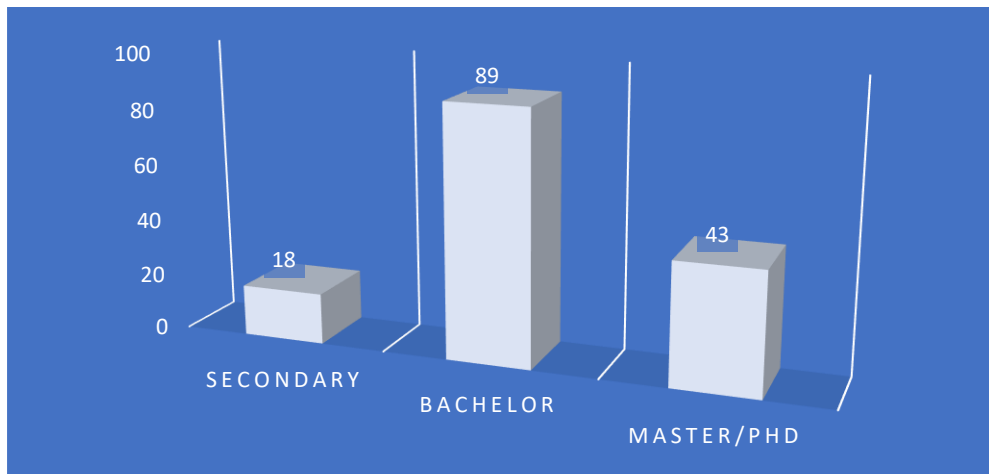


Figure (3) Social Status

Table (7) Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary	18	12.0	12.0	12.0
	Bachelor	89	59.3	59.3	71.3
	Master/PHD	43	28.7	28.7	100.0
	Total	150	100.0	100.0	

It is clear from the previous table that 59.3% of the sample size have a bachelor's degree, and 28.7% of the sample size obtained a master's or doctoral degree, and 12% obtained secondary education.

**Figure (4) Education****Table (8) Income**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 10	46	30.7	30.7	30.7
	From 10 To Less than 15	39	26.0	26.0	56.7
	From 15 To Less than 20	33	22.0	22.0	78.7
	More than 20	32	21.3	21.3	100.0
	Total	150	100.0	100.0	

It is clear from the previous table that 30.7% of the sample size have an income of less than 10 thousand riyals, and that 26% have an income from 10 thousand riyals to less than 15 thousand riyals, and that 22% have an income from 15 thousand riyals to less than 20 thousand riyals. And that 21.3% of the sample size have an income of more than 20 thousand Saudi riyals.

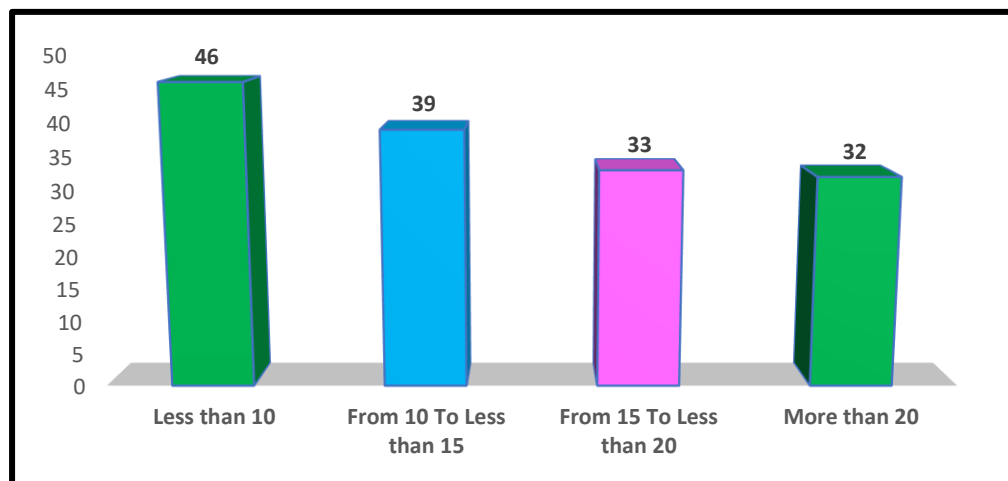


Figure (5) Income

Table (9) Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Till 10 Years	50	33.3	33.3	33.3
	10 Years to Less than 20	56	37.3	37.3	70.7
	More than 20 Years	44	29.3	29.3	100.0
	Total	150	100.0	100.0	

It is clear from the previous table that 37.3% of the sample size have experience from 10 years to less than 20 years, 33.3% of the sample size have experience up to 10 years, and 29.3% have experience of more than 20 years.

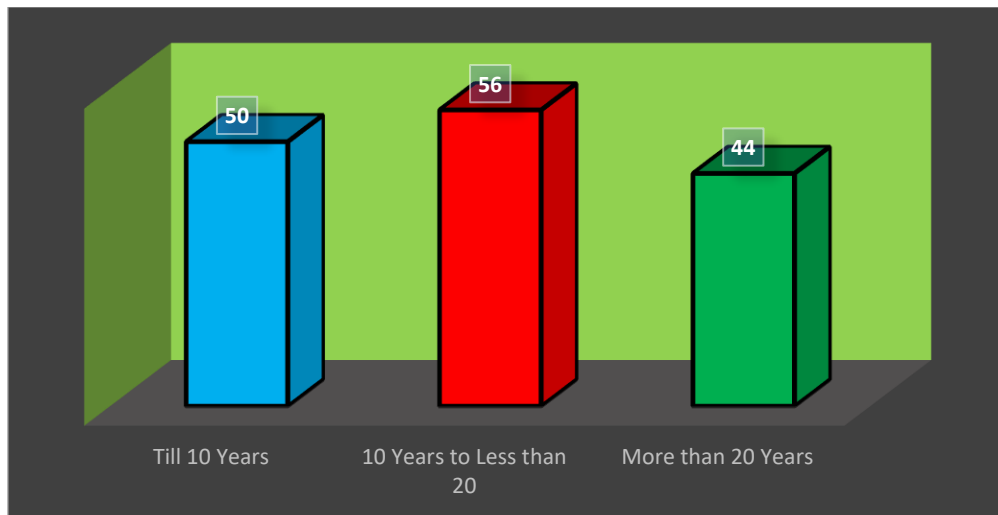


Figure (6) Experience

Table (10) Functional Degree

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Director general	29	19.3	19.3	19.3
	Department Manager	24	16.0	16.0	35.3
	Head of the Department	18	12.0	12.0	47.3
	Technical	18	12.0	12.0	59.3
	Employee	54	36.0	36.0	95.3
	Other	7	4.7	4.7	100.0
	Total	150	100.0	100.0	

It is clear from the previous table that 36% of the sample size are employees, 19.3% of the sample size are Director general, 16% are department managers, 12% are heads of departments, the same number are technicians, and 4.7% are other.

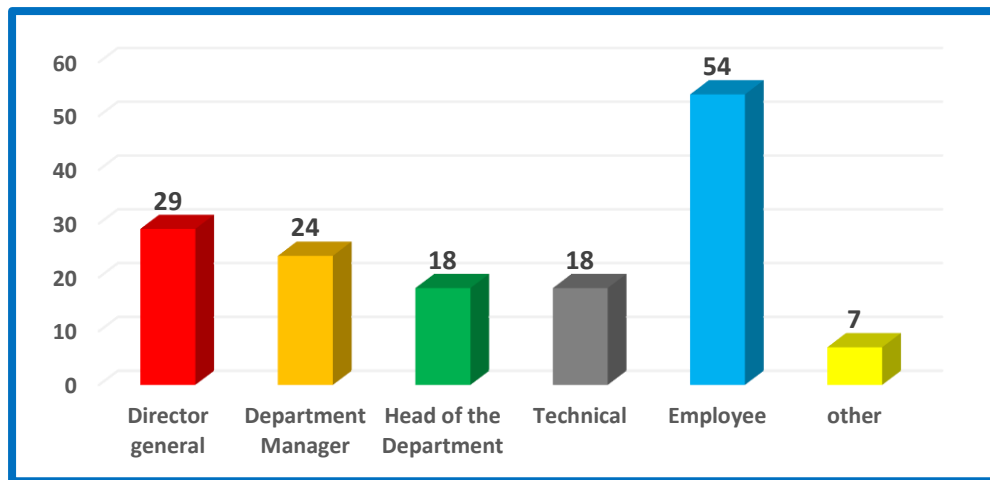


Figure (7) Functional Degree

Table (11) Part2: Artificial Intelligence

Statement												
	SD1	D1	N1	A1	SA1	Tot1	SD2	D2	N2	A2	SA2	Tot2
AES1	6	8	33	72	31	150	4.00%	5.33%	22.00%	48.00%	20.67%	100%
AES2	0	4	52	75	19	150	0.00%	2.67%	34.67%	50.00%	12.67%	100%
AES3	5	3	52	73	17	150	3.33%	2.00%	34.67%	48.67%	11.33%	100%
AES4	2	1	49	73	25	150	1.33%	0.67%	32.67%	48.67%	16.67%	100%
AES5	4	3	39	81	23	150	2.67%	2.00%	26.00%	54.00%	15.33%	100%
ANN1	8	3	48	76	15	150	5.33%	2.00%	32.00%	50.67%	10.00%	100%
ANN2	4	7	41	76	22	150	2.67%	4.67%	27.33%	50.67%	14.67%	100%
ANN3	5	4	33	81	27	150	3.33%	2.67%	22.00%	54.00%	18.00%	100%
ANN4	4	1	30	85	30	150	2.67%	0.67%	20.00%	56.67%	20.00%	100%
ANN5	5	5	49	71	20	150	3.33%	3.33%	32.67%	47.33%	13.33%	100%
AGAN1	5	1	42	80	22	150	3.33%	0.67%	28.00%	53.33%	14.67%	100%
AGAN2	2	3	59	65	21	150	1.33%	2.00%	39.33%	43.33%	14.00%	100%
AGAN3	4	0	41	83	22	150	2.67%	0.00%	27.33%	55.33%	14.67%	100%
AGAN4	5	1	51	77	16	150	3.33%	0.67%	34.00%	51.33%	10.67%	100%
AGAN5	2	3	40	82	23	150	1.33%	2.00%	26.67%	54.67%	15.33%	100%

It is clear from the table of the phrases of the second axis of the questionnaire that the sample size agreed on all the phrases of this axis.

Table (12) Part3: Administrative Jobs

Statement	SD1	D1	N1	A1	SA1	Tot1	SD2	D2	N2	A2	SA2	Tot2
BAJ1	8	8	62	63	9	150	5.33%	5.33%	41.33%	42.00%	6.00%	100%
BAJ2	3	10	60	59	18	150	2.00%	6.67%	40.00%	39.33%	12.00%	100%
BAJ3	3	11	52	56	28	150	2.00%	7.33%	34.67%	37.33%	18.67%	100%
BAJ4	2	16	53	57	22	150	1.33%	10.67%	35.33%	38.00%	14.67%	100%
BAJ5	4	20	46	57	23	150	2.67%	13.33%	30.67%	38.00%	15.33%	100%
BAJ6	4	18	45	56	27	150	2.67%	12.00%	30.00%	37.33%	18.00%	100%
BAJ7	4	14	46	57	29	150	2.67%	9.33%	30.67%	38.00%	19.33%	100%
BAJ8	2	11	45	62	30	150	1.33%	7.33%	30.00%	41.33%	20.00%	100%
BAJ9	15	24	52	41	18	150	10.00%	16.00%	34.67%	27.33%	12.00%	100%
BAJ10	17	27	50	37	19	150	11.33%	18.00%	33.33%	24.67%	12.67%	100%

It is clear from the table of the phrases of the third axis of the questionnaire that the sample size agreed on all the phrases of this axis.

Reliability

The following tables show the validity and reliability of the second axis of the artificial intelligence questionnaire.

Scale: Artificial Intelligence

Table (13) Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded ^a	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Table (14) Reliability Statistics

Cronbach's Alpha	N of Items
.867	15

It is clear from the previous table that Cronbach's alpha coefficient reached 0.867, which indicates the validity and stability of this axis.

Scale: Administrative Jobs

The following tables show the validity and reliability of the third axis of the administrative job questionnaire.

Table (15) Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded ^a	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Table (16) Reliability Statistics

Cronbach's Alpha	N of Items
.833	10

It is clear from the previous table that Cronbach's alpha coefficient reached 0.833, which indicates the validity and stability of this axis.

Scale: The Two Parts

The following tables show the validity and reliability of the total axes of the questionnaire on the impact of artificial intelligence on administrative jobs.

Table (17) Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded ^a	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Table (18) Reliability Statistics

Cronbach's Alpha	N of Items
.767	2

It is clear from the previous table that Cronbach's alpha coefficient reached 0.767, which indicates the validity and stability of all axis.

Correlations

The following tables indicate how the terms relate to each other.

Table (19) Correlations of Expert Systems

		AES1	AES2	AES3	AES4	AES5
AES1	Pearson Correlation	1	.291**	.284**	.154	.198*
	Sig. (2-tailed)		.000	.000	.059	.015
	N	150	150	150	150	150
AES2	Pearson Correlation	.291**	1	.310**	.404**	.292**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	150	150	150	150	150
AES3	Pearson Correlation	.284**	.310**	1	.424**	.148

	Sig. (2-tailed)	.000	.000		.000	.071
	N	150	150	150	150	150
AES4	Pearson Correlation	.154	.404**	.424**	1	.259**
	Sig. (2-tailed)	.059	.000	.000		.001
	N	150	150	150	150	150
AES5	Pearson Correlation	.198*	.292**	.148	.259**	1
	Sig. (2-tailed)	.015	.000	.071	.001	
	N	150	150	150	150	150

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The previous table refers to the phrases of the expert systems section in the second axis, to the extent to which the phrases relate to each other.

Table (20) Correlations of Neural Networks

		ANN1	ANN2	ANN3	ANN4	ANN5
ANN1	Pearson Correlation	1	.386**	.465**	.460**	.386**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	150	150	150	150	150
ANN2	Pearson Correlation	.386**	1	.483**	.291**	.323**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	150	150	150	150	150
ANN3	Pearson Correlation	.465**	.483**	1	.593**	.553**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	150	150	150	150	150
ANN4	Pearson Correlation	.460**	.291**	.593**	1	.536**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	150	150	150	150	150
ANN5	Pearson Correlation	.386**	.323**	.553**	.536**	1

Sig. (2-tailed)	.000	.000	.000	.000	
N	150	150	150	150	150

** . Correlation is significant at the 0.01 level (2-tailed).

The previous table refers to the phrases of the Neural Networks section in the second axis, to the extent to which the phrases relate to each other.

Table (21) Correlations of Genetic Algorithm Networks

		AGAN1	AGAN2	AGAN3	AGAN4	AGAN5
AGAN1	Pearson Correlation	1	.433**	.116	.319**	.292**
	Sig. (2-tailed)		.000	.158	.000	.000
	N	150	150	150	150	150
AGAN2	Pearson Correlation	.433**	1	.265**	.425**	.424**
	Sig. (2-tailed)	.000		.001	.000	.000
	N	150	150	150	150	150
AGAN3	Pearson Correlation	.116	.265**	1	.454**	.334**
	Sig. (2-tailed)	.158	.001		.000	.000
	N	150	150	150	150	150
AGAN4	Pearson Correlation	.319**	.425**	.454**	1	.334**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	150	150	150	150	150
AGAN5	Pearson Correlation	.292**	.424**	.334**	.334**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	150	150	150	150	150

** . Correlation is significant at the 0.01 level (2-tailed).

The previous table refers to the phrases of the Genetic Algorithm Networks section in the second axis, to the extent to which the phrases relate to each other.

Table (22) Correlations of Administrative Jobs

		BAJ1	BAJ2	BAJ3	BAJ4	BAJ5	BAJ6	BAJ7
BAJ1	Pearson Correlation	1	.306**	.274**	.266**	.422**	.256**	.281**
	Sig. (2-tailed)		.000	.001	.001	.000	.002	.001
	N	150	150	150	150	150	150	150
BAJ2	Pearson Correlation	.306**	1	.513**	.409**	.386**	.330**	.425**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	150	150	150	150	150	150	150
BAJ3	Pearson Correlation	.274**	.513**	1	.537**	.666**	.482**	.487**
	Sig. (2-tailed)	.001	.000		.000	.000	.000	.000
	N	150	150	150	150	150	150	150
BAJ4	Pearson Correlation	.266**	.409**	.537**	1	.592**	.674**	.443**
	Sig. (2-tailed)	.001	.000	.000		.000	.000	.000
	N	150	150	150	150	150	150	150
BAJ5	Pearson Correlation	.422**	.386**	.666**	.592**	1	.610**	.365**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	150	150	150	150	150	150	150
BAJ6	Pearson Correlation	.256**	.330**	.482**	.674**	.610**	1	.371**
	Sig. (2-tailed)	.002	.000	.000	.000	.000		.000
	N	150	150	150	150	150	150	150
BAJ7	Pearson Correlation	.281**	.425**	.487**	.443**	.365**	.371**	1
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.000	
	N	150	150	150	150	150	150	150
BAJ8	Pearson Correlation	.284**	.506**	.472**	.426**	.336**	.423**	.659**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000
	N	150	150	150	150	150	150	150
BAJ9	Pearson Correlation	.334**	.054	.147	.229**	.210**	.194*	-.019-

	Sig. (2-tailed)	.000	.514	.072	.005	.010	.017	.813
	N	150	150	150	150	150	150	150
BAJ10	Pearson Correlation	.274**	.123	.165*	.239**	.269**	.233**	.123
	Sig. (2-tailed)	.001	.135	.044	.003	.001	.004	.134
	N	150	150	150	150	150	150	150

Table (23) Correlations of Administrative Jobs

		BAJ8	BAJ9	BAJ10
BAJ1	Pearson Correlation	.284**	.334**	.274**
	Sig. (2-tailed)	.000	.000	.001
	N	150	150	150
BAJ2	Pearson Correlation	.506**	.054	.123
	Sig. (2-tailed)	.000	.514	.135
	N	150	150	150
BAJ3	Pearson Correlation	.472**	.147	.165*
	Sig. (2-tailed)	.000	.072	.044
	N	150	150	150
BAJ4	Pearson Correlation	.426**	.229**	.239**
	Sig. (2-tailed)	.000	.005	.003
	N	150	150	150
BAJ5	Pearson Correlation	.336**	.210**	.269**
	Sig. (2-tailed)	.000	.010	.001
	N	150	150	150
BAJ6	Pearson Correlation	.423**	.194*	.233**
	Sig. (2-tailed)	.000	.017	.004
	N	150	150	150
BAJ7	Pearson Correlation	.659**	-.019-	.123
	Sig. (2-tailed)	.000	.813	.134

	N	150	150	150
BAJ8	Pearson Correlation	1	-.003-	.131
	Sig. (2-tailed)		.975	.110
	N	150	150	150
BAJ9	Pearson Correlation	-.003-	1	.619**
	Sig. (2-tailed)	.975		.000
	N	150	150	150
BAJ10	Pearson Correlation	.131	.619**	1
	Sig. (2-tailed)	.110	.000	
	N	150	150	150

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The previous table indicates the extent to which the phrases relate to each other for the third axis.

T-Test

Table (24) One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
AES1	150	3.7600	.97403	.07953
AES2	150	3.7267	.71322	.05823
AES3	150	3.6267	.83984	.06857
AES4	150	3.7867	.77361	.06317
AES5	150	3.7733	.82857	.06765
ANN1	150	3.5800	.89944	.07344
ANN2	150	3.7000	.87278	.07126
ANN3	150	3.8067	.88003	.07185
ANN4	150	3.9067	.81386	.06645
ANN5	150	3.6400	.87685	.07159
AGAN1	150	3.7533	.83495	.06817

AGAN2	150	3.6667	.79145	.06462
AGAN3	150	3.7933	.78831	.06437
AGAN4	150	3.6533	.81089	.06621
AGAN5	150	3.8067	.76585	.06253

Table (25) One-Sample Test

Test Value = 0						
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
AES1	47.278	149	.000	3.76000	3.6029	3.9171
AES2	63.995	149	.000	3.72667	3.6116	3.8417
AES3	52.888	149	.000	3.62667	3.4912	3.7622
AES4	59.949	149	.000	3.78667	3.6619	3.9115
AES5	55.775	149	.000	3.77333	3.6397	3.9070
ANN1	48.748	149	.000	3.58000	3.4349	3.7251
ANN2	51.921	149	.000	3.70000	3.5592	3.8408
ANN3	52.978	149	.000	3.80667	3.6647	3.9487
ANN4	58.790	149	.000	3.90667	3.7754	4.0380
ANN5	50.842	149	.000	3.64000	3.4985	3.7815
AGAN1	55.056	149	.000	3.75333	3.6186	3.8880
AGAN2	56.740	149	.000	3.66667	3.5390	3.7944
AGAN3	58.935	149	.000	3.79333	3.6661	3.9205
AGAN4	55.179	149	.000	3.65333	3.5225	3.7842
AGAN5	60.876	149	.000	3.80667	3.6831	3.9302

The previous table refers to the t-test for the expressions of the second axis for all three sections, which shows that the value of t for all the expressions is 0.000, which means that it is less than 0.05.

Table (26) One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
BAJ1	150	3.3800	.88742	.07246
BAJ2	150	3.5267	.86464	.07060
BAJ3	150	3.6333	.93706	.07651
BAJ4	150	3.5400	.91688	.07486
BAJ5	150	3.5000	.99495	.08124
BAJ6	150	3.5600	1.00656	.08218
BAJ7	150	3.6200	.98764	.08064
BAJ8	150	3.7133	.91473	.07469
BAJ9	150	3.1533	1.13951	.09304
BAJ10	150	3.0933	1.17780	.09617

Table (27) One-Sample Test

Test Value = 0						
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
BAJ1	46.648	149	.000	3.38000	3.2368	3.5232
BAJ2	49.954	149	.000	3.52667	3.3872	3.6662
BAJ3	47.488	149	.000	3.63333	3.4821	3.7845
BAJ4	47.286	149	.000	3.54000	3.3921	3.6879
BAJ5	43.083	149	.000	3.50000	3.3395	3.6605
BAJ6	43.317	149	.000	3.56000	3.3976	3.7224
BAJ7	44.891	149	.000	3.62000	3.4607	3.7793
BAJ8	49.718	149	.000	3.71333	3.5657	3.8609
BAJ9	33.892	149	.000	3.15333	2.9695	3.3372
BAJ10	32.166	149	.000	3.09333	2.9033	3.2834

The previous table refers to the t-test for the statements of the third axis, which shows that the value of t for all the statements is 0.000, which means that it is less than 0.05.

One way

Table (28) ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
AES1	Between Groups	22.496	3	7.499	9.211	.000
	Within Groups	118.864	146	.814		
	Total	141.360	149			
AES2	Between Groups	13.572	3	4.524	10.616	.000
	Within Groups	62.221	146	.426		
	Total	75.793	149			
AES3	Between Groups	36.250	3	12.083	25.626	.000
	Within Groups	68.843	146	.472		
	Total	105.093	149			
AES4	Between Groups	22.236	3	7.412	16.167	.000
	Within Groups	66.937	146	.458		
	Total	89.173	149			
AES5	Between Groups	28.464	3	9.488	18.763	.000
	Within Groups	73.830	146	.506		
	Total	102.293	149			
ANN1	Between Groups	45.239	3	15.080	29.238	.000
	Within Groups	75.301	146	.516		
	Total	120.540	149			
ANN2	Between Groups	40.467	3	13.489	26.965	.000
	Within Groups	73.033	146	.500		
	Total	113.500	149			
ANN3	Between Groups	51.618	3	17.206	39.390	.000

	Within Groups	63.775	146	.437		
	Total	115.393	149			
ANN4	Between Groups	26.176	3	8.725	17.567	.000
	Within Groups	72.517	146	.497		
	Total	98.693	149			
ANN5	Between Groups	41.612	3	13.871	27.761	.000
	Within Groups	72.948	146	.500		
	Total	114.560	149			
AGAN1	Between Groups	29.717	3	9.906	19.502	.000
	Within Groups	74.157	146	.508		
	Total	103.873	149			
AGAN2	Between Groups	26.306	3	8.769	19.100	.000
	Within Groups	67.027	146	.459		
	Total	93.333	149			
AGAN3	Between Groups	25.408	3	8.469	18.405	.000
	Within Groups	67.185	146	.460		
	Total	92.593	149			
AGAN4	Between Groups	28.731	3	9.577	20.194	.000
	Within Groups	69.242	146	.474		
	Total	97.973	149			
AGAN5	Between Groups	22.421	3	7.474	16.794	.000
	Within Groups	64.973	146	.445		
	Total	87.393	149			

The previous table refers to an ANOVA analysis for the expressions of the second axis for all three sections, which shows that the level of significance for all the expressions is 0.000, which means that it is less than 0.05.

Table (29) ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
BAJ1	Between Groups	33.256	4	8.314	14.337	.000
	Within Groups	84.084	145	.580		
	Total	117.340	149			
BAJ2	Between Groups	33.523	4	8.381	15.605	.000
	Within Groups	77.870	145	.537		
	Total	111.393	149			
BAJ3	Between Groups	61.449	4	15.362	32.104	.000
	Within Groups	69.384	145	.479		
	Total	130.833	149			
BAJ4	Between Groups	67.436	4	16.859	42.276	.000
	Within Groups	57.824	145	.399		
	Total	125.260	149			
BAJ5	Between Groups	65.956	4	16.489	29.320	.000
	Within Groups	81.544	145	.562		
	Total	147.500	149			
BAJ6	Between Groups	64.345	4	16.086	26.929	.000
	Within Groups	86.615	145	.597		
	Total	150.960	149			
BAJ7	Between Groups	53.503	4	13.376	21.118	.000
	Within Groups	91.838	145	.633		
	Total	145.340	149			
BAJ8	Between Groups	49.186	4	12.297	23.620	.000
	Within Groups	75.487	145	.521		
	Total	124.673	149			
BAJ9	Between Groups	45.228	4	11.307	11.059	.000

	Within Groups	148.245	145	1.022		
	Total	193.473	149			
BAJ10	Between Groups	58.265	4	14.566	14.230	.000
	Within Groups	148.429	145	1.024		
	Total	206.693	149			

The previous table refers to an ANOVA analysis for the statements of the third axis, which shows that the level of significance for all the statements is 0.000, which means that it is less than 0.05.

One way

Table (30) ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Total1	Between Groups	26.038	3	8.679	50.413	.000
	Within Groups	25.136	146	.172		
	Total	51.173	149			
Total2	Between Groups	35.946	3	11.982	52.302	.000
	Within Groups	33.447	146	.229		
	Total	69.393	149			

The previous table refers to an ANOVA analysis for the total axes of the questionnaire, which shows that the level of significance for all expressions is 0.000, which means that it is less than 0.05.

Source: Aishush, Riyadh (2021). The contribution of organizational culture to the success of the application of knowledge management - a case study of some public bank agencies in Masila, a complementary note for obtaining a master's degree in management sciences, specializing in economics and knowledge management, Faculty of Economic and Commercial Sciences and Management Sciences, University of Mohamed Kheidar Biskra, Algeria, 2021.

CHAPTER 6

DISCUSSION AND CONCLUSION

5. This chapter contains extensive coverage of the discussion, interpretation, and validation of survey results. In addition, the chapter identifies discussions related to the limitations of the study that were previously clarified, and areas of future research, and the researcher will present the results and recommendations at the end of the chapter.

5.1. Discussion

This study was devoted to answering the study's main question: Do artificial intelligence applications (expert systems, neural networks, networks of genetic algorithms) affect administrative jobs in the Saudi market? Where the data was collected through the questionnaire that was implemented, and validity and reliability were tested, and then correlation and some other tests were used to test the hypotheses.

Along with the effects of the war in Ukraine and its broader economic repercussions, the global economic slowdown since the post-Corona pandemic has exacerbated layoffs at a time when businesses have also sought to address internal imbalances brought on by their recruitment efforts during the period. The pandemic and rising remote work patterns at the time forced businesses to hire additional staff in order to adapt to the changes in the labor markets at that time.

The discussion's goals are to clarify and characterize the relevance of your results in light of the existing knowledge about the research topic under investigation, as well as to explain any fresh insights or understandings that have evolved as a result of examining the issue. The research questions or hypotheses that were proposed and the literature review will always serve as a link between the discussion and the introduction. However, the discussion does more than simply restate or reorganize the first sections of the paper; it also explains in detail how the study was designed, how the research problem was defined, and how the hypotheses were developed.

5.2. Conclusion

The conclusion aims to help the reader understand why the research is important to him after he has finished reading the study. Note that the conclusion is not just a summary of the points or a rephrase of the research problem, but it is a compilation of the main points of this study.

5.2.1 Results:

3. Making machines intelligent is the focus of one of the newest subfields of computer science, known as artificial intelligence. Computers are capable of reasoning, deduction, providing answers to problems, and assisting in decision-making.
4. Artificial intelligence has a wide range of applications, each of which serves a particular purpose depending on its kind and aims to simplify administration and management of the various organisational operations.
5. Saudi institutions utilise artificial intelligence apps to manage and carry out a variety of administrative tasks, particularly the administration of HR, since these applications vary from institution to institution depending on the activity of the institution.
6. The extent of change in the quantity and quality of jobs after the introduction of artificial intelligence in Saudi institutions was high, and this indicates the agreement of the respondents that the introduction of artificial intelligence leads to a change in the quantity and quality of jobs, which affects the future of jobs in Saudi institutions.
7. According to the study, artificial intelligence may have an impact on employment and their availability in the Saudi market in the future. It may replace people in performing activities and result in the elimination of many positions, but it may also necessitate the creation of many new jobs in the Saudi market.

5.2.2 Recommendations

1. Work to develop and enhance the concept of artificial intelligence in the completion of daily tasks in Saudi institutions, through its continuous application.
2. The need to pay attention to creating new job opportunities through the use of experts in the field of artificial intelligence to follow up on its developments in order to improve the work environment in Saudi institutions
3. Conducting training courses for employees to clarify the role of artificial intelligence in serving the work environment in Saudi institutions.
4. The study recommends that companies in Saudi Arabia should use artificial intelligence to reduce the administrative workload.
5. The study recommends that companies in Saudi Arabia should use artificial intelligence to simplify tasks.
6. The study recommends that companies in Saudi Arabia should use artificial intelligence to predict employee success.
7. The study recommends that companies in Saudi Arabia should use artificial intelligence to select a candidate based on their skills.
8. It is recommended to conduct such a study in other countries, especially Arab countries because they have a similar social and cultural lifestyle.
9. It is advisable to apply the same variables to other manufacturing industries.
- 10.

5.5. Limitations and Scope for Future Research

All studies must have restrictions. The research design or technique may have restrictions that result in study limitations, and these variables may have an impact on the study's findings. Many researchers are hesitant to mention the limits of their research, however, since they believe doing so could diminish the significance of their work in the eyes of readers and reviewers.

As a result, it is possible to decide to end the section by making recommendations for more research. The influence of artificial intelligence applications on administrative employment in the Saudi market is a research topic that may be addressed by the study, but there are still a number of problems that need to be answered. to previously unanswered issues on this subject that have come to light as a result of this investigation. Therefore, it is essential to frame recommendations by tying the need for more research to the constraints of your study or tying it to significant concerns that have emerged from the information gathered throughout this research.

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Appendixes

RESEARCH ON

**The impact of the application of artificial intelligence on
administrative jobs in the Kingdom of Saudi Arabia**

**أثر تطبيق الذكاء الاصطناعي على الوظائف الإدارية
في المملكة العربية السعودية**

QUESTIONNAIRE BOOKLET

Reem Abdullah Al Zamil

ريم عبدالله الزامل

2023

Dear Respondent,

I am a Master 's degree candidate at the Saudi electronic university. Currently, I am conducting a study titled "**The Impact of application of artificial intelligence on administrative jobs in the Kingdom of Saudi Arabia**". The purpose of this study is to examine the application of artificial intelligence on administrative jobs in the Kingdom of Saudi Arabia.

I would like to request your cooperation to answer this questionnaire. Any information obtained will be kept strictly confidential and only be used for academic purposes. Your cooperation is highly appreciated.

Thank you in advance for agreeing to participate in this study.

Name: Reem Alzamil
Master Candidate
Faculty of Business and Administration
Midocean University
Saudi Arabia
Zamil.reem@hotmail.com

عزيزي المستجيب ،

أنا طالبة ماجستير (إدارة أعمال) في جامعة ميد او شن . أقوم حاليًا بإجراء دراسة بعنوان " أثر تطبيق الذكاء الاصطناعي على الوظائف الإدارية في المملكة العربية السعودية ". الغرض من هذه الدراسة هو فحص اثر تطبيق الذكاء الاصطناعي على الوظائف الإدارية في المملكة العربية السعودية.

أود أن أطلب تعاونكم للإجابة على هذا الاستبيان. سيتم الاحتفاظ بأي معلومات يتم الحصول عليها بسرية تامة ولن يتم استخدامها إلا للأغراض الأكاديمية. نقدر تعاونك كثيرًا.

شكرًا لك مقدمًا على موافقتك على المشاركة في هذه الدراسة.

اسم الطالب: ريم عبدالله الزامل

كلية الأعمال والإدارة

جامعة ميد او شن

المملكة العربية السعودية

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هاتف # 0503440515

Part1: Demographic information on respondents

الجزء الأول: معلومات ديموغرافية عن المستجيبين

1- Gender النوع

Male ذكر	Female أنثى

2- Age العمر

Less than 30	30 to 39	40 to 49	50 to 59	Above 60
أقل من 30	39-30	49-40	59-50	60 فأكثر

3- Social Status الحالة الاجتماعية

Single	Married	Divorced	Widow
اعزب	متزوج	مطلق	أرملة

4- Education التعليم

Secondary	Bachelor	Master/ Ph.D.
ثانوى	بكالوريوس	ماجستير/دكتوراه

5- Income (thousand) الدخل (بالآلاف)

Less than 10	From 10 To 15	From 15 To 20	More than 20
10 فأقل	من 10 لأقل من 15	من 15 لأقل من 20	20 فأكثر

6- Experience الخبرة

Till 10 Years	From 10 to 20	More than 20 Years
حتى 10	من 10 لأقل من 20	أكثر من 20

7- Functional Degree

Director general	Department Manager	Head of the Department	Technical	Employee	other

Part2: Artificial Intelligence

الجزء 2: الذكاء الاصطناعي

Please indicate your degree of agreement or disagreement with the following statements, so please sign (✓) for the choice that reflects your opinion by choosing one of the five alternatives.

يرجى الإشارة إلى درجة موافقتك على العبارات التالية. تشير جميع الأسئلة الواردة في هذا الاستبيان إلى اختيارك الذي حددته

Item	1	2	3	4	5
	لا أوافق مطلقا	لا أوافق	محايد	أوافق	أوافق جدا
	Strongly Disagree	Disagree	Natural	Agree	Strongly Agree
AES1					
AES2					
AES3					
AES4					
AES5					
ANN1					
ANN2					

	Transactions are completed with accuracy due to the superior ability of the technological devices used in the company					
ANN3	تعتمد الشركة على استخدام الأجهزة الذكية في تطوير أعمالها The company relies on the use of smart devices in developing its business					
ANN4	تهتم الشركة بإدخال تحديثات وتطويرات مستمرة The company is interested in introducing continuous updates and developments					
ANN5	تعتمد الشبكات العصبية على العديد من التطبيقات التي تساعد على التنبؤ والتخطيط ومعالجة العمليات داخل الشركة Neural networks rely on many applications that help predict, plan and process operations within the company					
	شبكات الخوارزميات الجينية Genetic Algorithm Networks					
AGAN1	تبحث أنظمة الخوارزميات عن مجموعة حلول وليس حلا واحدا Algorithmic systems look for a set of solutions, not a single solution					
AGAN2	تستخدم نظم الخوارزميات قوانين الاحتمالية ولا تستخدم القوانين التقليدية Algorithmic systems use probability laws and do not use traditional laws					
AGAN3	تركز أنظمة الخوارزميات الجينية على تطوير حلول ذات جودة عالية Genetic algorithm systems focus on developing high quality solutions					
AGAN4	تعتمد أنظمة الخوارزميات على تقييم الحلول بكل فاعلية Algorithmic systems rely on evaluating solutions effectively					
AGAN5	تقدم أنظمة الخوارزميات الحلول المناسبة بوقت قياسي Algorithmic systems provide appropriate solutions in record time					

Part3: Administrative Jobs

الجزء 3: الوظائف الادارية

Please indicate your degree of agreement or disagreement with the following statements, so please sign (✓) for the choice that reflects your opinion by choosing one of the five alternatives.

يرجى الإشارة إلى درجة موافقتك على العبارات التالية. تشير جميع الأسئلة الواردة في هذا الاستبيان إلى اختيارك الذي حددته

Item	1	2	3	4	5
	لا أوافق مطلقاً	لا أوافق	محايد	أوافق	أوافق جداً
	Strongly Disagree	Disagree	Natural	Agree	Strongly Agree
BAJ1	تزيد الشركة من استخدام الذكاء الاصطناعي لأداء العمليات دون تدخل بشري The company increases the use of artificial intelligence to perform operations without human intervention				
BAJ2	تستخدم الشركة الذكاء الاصطناعي لتحل محل المهام اليدوية The company uses artificial intelligence to replace manual tasks.				
BAJ3	تستخدم الشركة الذكاء الاصطناعي لاستبدال المهام المتكررة The company uses artificial intelligence to replace repetitive tasks				
BAJ4	تستخدم الشركة الذكاء الاصطناعي لتجنب الأخطاء تلقائياً The company uses artificial intelligence to automatically avoid mistakes				
BAJ5	تستخدم الشركة الذكاء الاصطناعي لتقليل عبء العمل الإداري The company uses artificial intelligence to reduce administrative workload				
BAJ6	تستخدم الشركة الذكاء الاصطناعي لتحويل المدخلات إلى مخرجات بجودة عالية				

	The company uses artificial intelligence to convert inputs into high-quality outputs					
BAJ7	استخدام الشركة لتطبيقات الذكاء الاصطناعي اثر بالفعل على تشغيل العنصر البشرى The company's use of artificial intelligence applications has already affected the employment of the human element					
BAJ8	تستخدم الشركة الذكاء الاصطناعي لتسريع عمليات العمل The company uses artificial intelligence to speed up work processes					
BAJ9	تستخدم الشركة الذكاء الاصطناعي لأستخدام اقل كميات من الموارد بكفاءة The company uses artificial intelligence to use the least number of resources efficiently					
BAJ10	تستخدم الشركة الذكاء الاصطناعي لتحسين الإنتاجية The company uses artificial intelligence to improve productivity					

Gratitude:

I appreciate you for sparing your time to fill out the survey. Your involvement means a lot to us and we highly value it. The information you shared is significant to my analysis and will enable me to make this topic.

Once again, I am very grateful for your contribution.

Sincerely

Name: Reem Al Zamil

Master Candidate

Saudi Arabia

Cell # 0503440515

إمتنان

أقدر لك توفير وقتك لملء الاستبيان. مشاركتك تعني لي الكثير و أقدرها بشدة. المعلومات التي شاركتها مهمة لتحليلنا وستمكنا من إنجاز هذا الموضوع.

مرة أخرى ، ممتنه جدًا لمساهمتك.

مع الشكر

اسم الطالب: ريم الزامل

المملكة العربية السعودية

تليفون : 0503440515

شكرا لكم..

Abstract

Purpose: Artificial intelligence is used in many fields. Employment is one of the most important areas that benefit from these technologies. On the other hand, it threatens to replace jobs. The purpose of the study is to study the impact of artificial intelligence on administrative jobs in Saudi companies.

Methodology: To achieve this study, data were collected from 150 managers, supervisors and employees working in different companies at administrative levels in the Saudi market through a questionnaire. After ensuring the naturalness, validity and stability of the tool, a descriptive analysis was performed and the correlation between the variables was examined. Finally, the effect was tested through multiple regressions using SPSS software.

Results: The result showed that Saudi companies apply both artificial intelligence and it affects differently the quantity and quality of administrative jobs that they have in the company, and it was also shown that there is a correlation between the applications of artificial intelligence and the amount of employment. Finally, the results indicate that there is a significant impact of total artificial intelligence on total employment in Saudi companies. Automation rated the highest impact on hiring, followed by efficiency, while ease of use did not show a significant impact on total hiring.

Limitations/Recommendations: The current study was conducted in Saudi companies. Therefore, future research recommends collecting more data over a longer period of time to verify the validity of the current model and measurement tool. It also recommends conducting similar studies on other sectors in Saudi Arabia.

Originality/Value: This study can be considered as one of the few studies that discusses the use of new technologies in business from the perspective of employees.

الملخص بالعربي

الغرض: يستخدم الذكاء الاصطناعي في العديد من المجالات. ويعتبر التوظيف من أهم المجالات التي تستفيد من هذه التقنيات. ومن ناحية أخرى، فإنه يهدد باستبدال الوظائف. الغرض من الدراسة هو دراسة تأثير الذكاء الاصطناعي على الوظائف الادارية بالشركات السعودية .

المنهجية: لتحقيق هذه الدراسة، تم جمع البيانات من 150 مديراً ومشرفاً وموظفاً يعملون في شركات مختلفة بمستويات ادارية في السوق السعودي عن طريق الاستبيان. وبعد التأكد من طبيعية وصدق وثبات الأداة، تم إجراء التحليل الوصفي وفحص الارتباط بين المتغيرات. وأخيراً تم اختبار التأثير من خلال الانحدارات المتعددة باستخدام برنامج SPSS.

النتائج: أظهرت النتيجة أن الشركات السعودية تطبق كلا من الذكاء الاصطناعي ويؤثر بشكل مختلف على كمية ونوعية الوظائف الادارية التي لديها في الشركة ، كما تبين أن هناك علاقة ارتباطية بين تطبيقات الذكاء الاصطناعي وكمية التوظيف. وأخيراً تشير النتائج إلى وجود تأثير معنوي للذكاء الاصطناعي الكلي على إجمالي العمالة في الشركات السعودية . وقد صنفت الأتمتة أعلى تأثير على التوظيف، تليها الكفاءة، في حين أن سهولة الاستخدام لا تظهر تأثيراً كبيراً على إجمالي التوظيف.

القيود/التوصيات: أجريت الدراسة الحالية في الشركات السعودية . ولذلك توصي الأبحاث المستقبلية بجمع المزيد من البيانات على مدى فترة زمنية أطول للتحقق من صلاحية النموذج الحالي وأداة القياس. كما توصي بإجراء دراسات مماثلة على قطاعات أخرى في السعودية .

الأصالة/القيمة: يمكن اعتبار هذه الدراسة واحدة من الدراسات القليلة التي تناقش استخدام التقنيات الجديدة في الأعمال التجارية من وجهة نظر الموظفين.