

عنوان البحث:

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

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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.

Problem statement:

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.

Research Questions:

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)?

Research Variables:

The research seeks to reach its objectives through the following variables:

1. **Independent Variable:** artificial intelligence that includes 3 variables:

- 1.1. Expert systems.
- 1.2. Neural networks.
- 1.3. Networks of genetic algorithms.

2. **Dependent Variable:** Administrative jobs in Saudi Organizations.

Research Model:

Based on the literature review, the research model can be developed to link the impact of artificial intelligence and administrative jobs in Saudi Organizations. Figure 1 below shows the correlation between independent variables and dependent variable.

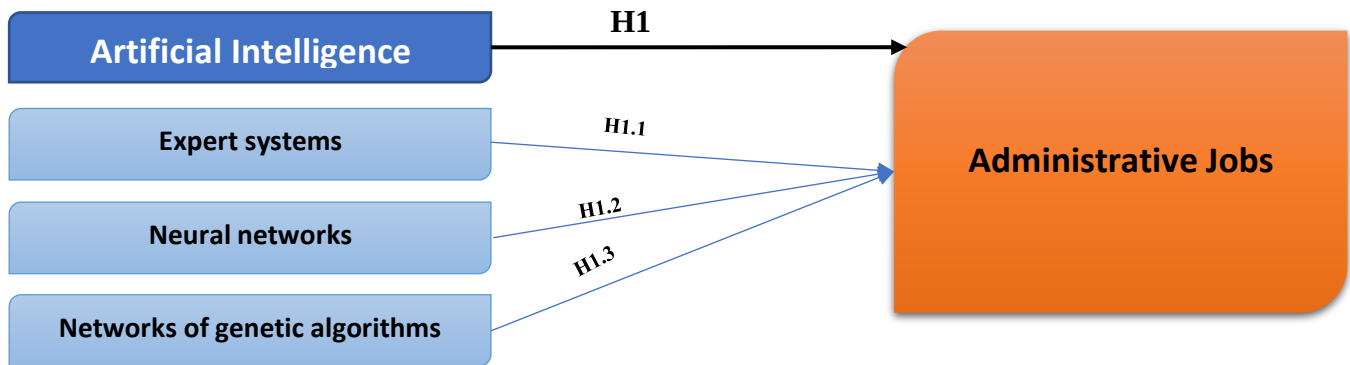


Figure 1: Study Model
Source: Developed by the Researcher

Research Hypothesis:

Based on the research framework, the main hypotheses can be formulated and moreover, three sub-hypotheses can be extracted based on each variable of artificial intelligence:

H1: There is a significant effect at level $\alpha \leq 0.05$ of artificial intelligence on administrative jobs in Saudi Organizations.

H1.1: There is a significant effect at level $\alpha \leq 0.05$ of Expert systems on administrative jobs in Saudi Organizations.

H1.2: There is a significant effect at level $\alpha \leq 0.05$ of Neural networks on administrative jobs in Saudi Organizations.

H1.3: There is a significant effect at level $\alpha \leq 0.05$ of Networks of genetic algorithms on administrative jobs in Saudi Organizations.

Research Objectives

1. This research aims to achieve the following objectives:
2. Identify the reality of artificial intelligence in Saudi organizations.
3. Highlighting the extent of change in the quantity and quality of jobs after the introduction of artificial intelligence in Saudi organizations.
4. Identify the application and use of artificial intelligence methods and its role in changing the structure of administrative jobs.
5. To provide recommendations that help in improving the knowledge of Artificial intelligence applications and its great impact on various jobs.

Research Importance:

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.

Literature Review

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.

Methodology:

This study will use a descriptive analytical approach. Because quantitative research involves the process of gathering, assessing, interpreting, and presenting study results, the descriptive analytical approach is suited for the nature of this research. In order to answer queries about the study issue, the descriptive analytical approach relies on characterizing the phenomenon and spotting patterns in the data. It is also a crucial part of practically any research effort since it conveys knowledge in a way that is pertinent to the research question about capabilities, requirements, technologies, activities, rules, people, and situations. The survey will also be used by the researcher, who will utilize SPSS to analyses the data.

The goal of the study was to describe the relationship between artificial intelligence and administrative jobs in the Saudi market using the Multiple Regression Model for the study.

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where:

β_0 , β_1 are coefficients related to variables, but β_0 is a constant coefficient.

Y = administrative jobs.

X1, is the independent variables which are stated below:

X1 = artificial intelligence.

ε = the error term.

Research Population:

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

Research Limitations:

1. **Locational Limits:** This research will cover all companies with different activities in Saudi Arabia.
2. **Time Limits:** This research will cover the time period from July to September 2023.
3. **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:

1. **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.
2. **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.

The General Perception of the research Structure:

The research consists of five chapters as follows:

The first chapter deals with the presentation of basic data such as the introduction, the research problem, the research questions, the importance of the research, the research objectives, etc.

The second chapter is concerned with presenting the previous literature on the subject of the research, and it will be divided into two main parts, a section that discusses artificial intelligence, and a section that discusses administrative functions.

The third chapter is concerned with presenting the methodology, the size of the original community of the research subject, the size of the sample, the research method, how to collect data, and how to analyze the data.

The fourth chapter is concerned with presenting the statistical analysis of the data collected from the questionnaire that was applied to the research sample, with the presentation of tables and figures, and then testing the research hypotheses.

The fifth chapter is concerned with presenting the discussion related to the research variables, the result of testing hypotheses, and the results and recommendations.

A list of references used in the research.

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