

The Role Of Artificial Intelligence In Enhancing The Leadership Skills Of Academic Leaders In Public and Private Universities In The Northern Region From The Point Of View Of Faculty Members

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Abstract

The study aimed to reveal the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the Northern Region from the point of view of faculty members. To achieve the objectives of the study, the researcher prepared a tool consisting of (32) items distributed over three areas: administrative intellectual skills, the area of problem solving and decision making, and the area of technical skills. The study population consisted of all faculty members in public and private universities in the northern region, from whom a random sample was chosen. It reached (265) faculty members during the first semester of the year (2023/2024 AD). The results of the study showed that the overall arithmetic averages for the role of artificial intelligence in enhancing leadership skills among academic leaders in public and private universities came in at a moderate degree, and the results showed that there were statistically significant differences attributed to gender differences, in favor of males, type of university, and in favor of public universities, and there were no statistically significant differences. This is due to the difference in academic rank. The study recommended the need to encourage academic leaders in universities to employ artificial intelligence programs.

Keywords: Artificial Intelligence, Leadership Skills, Academic Leaders.

Introduction:

Recent decades have witnessed a tremendous development in the explosion of knowledge and information development, and there have emerged forces that control the world, and the plans of the responsible authorities to achieve their ambitious vision have tended to form a knowledge society, digital transformation and benefit from technology in all its fields, including artificial intelligence in all fields and sectors, the most important of which is education, and leadership is the essence of the administrative process as it is one of the most important areas of administrative performance; Especially in the current era of changes and technological transformations in all fields. Artificial intelligence has become one of the most important and indispensable modern topics, which has become practiced in all our institutions, whether educational or economic, and from here many trends were launched to focus on leadership practices and skills used by educational leaders in all educational institutions, through which modern administrative intellectual orientations are achieved that keep pace with the challenges of the twenty-first century, which is the era of knowledge and technology, and work with an extended strategic and technical thought and approach, and accordingly modern leadership administrative concepts have evolved to keep pace with these technologies, and to emphasize The need for the leader to possess all the leadership skills associated with this approach or modern administrative thought, especially in educational institutions (Eid, 2020). The employment of artificial intelligence and the radical changes it requires in the concepts of management in universities and their work systems as seen by (Mounir, 2019) improves the level of service performance within the university, reduces costs, reduces administrative complexities, and achieves administrative transparency. Perhaps the great development in the huge potential offered by artificial intelligence has brought about tremendous developments in all fields, especially its entry into the field of university education, as it connects, distinguishes and clarifies the different areas of learning in the neural network, which is a clear and apparent shift in the construction of knowledge (Eid, 2020). Artificial intelligence contributes to improving the leadership behavior of academic leaders and all faculty members, through (self-learning) that academic leader's resort to, in terms of following many steps, especially with regard to leadership skills that will increase creative and imaginative ability by resorting to drawings and programs that contribute to improving the educational process (Abdel Samie', 2001). With the integration of artificial intelligence in education and all educational institutions, this has reduced direct human interaction between employees themselves, and may also reduce direct interaction between academic leaders in universities

and faculty members, and reliance on modern technologies, which results in enhancing many administrative and educational tasks such as evaluation and follow-up, although the tasks will become more accurate and sensitive, especially when resistance to change appears from some faculty members working in universities, and administrative tasks and leadership practices will become more sensitive and more contradictory especially with traditional practices.

Artificial Intelligence:

Artificial intelligence is one of the important sciences that has attracted the attention of many researchers and academics in various fields, and it has witnessed tremendous development in various daily fields (Tomasik, 2019), and it was relied upon to help humans in their daily tasks that touch their aspects at all stages (Moor, 2016). Shawky (2017) defines artificial intelligence as the behavior and characteristics of computer programs, which make them simulate mental and human abilities and lifestyles. Burns (2017) defined it as the process of simulating human intelligence using machines, specifically in computer systems. Al-Dahshan (2019) defined it as the science of engineering intelligent machines; it is based on the creation of programs and computer devices capable of thinking in the same way that the human brain works and simulates the actions of humans. Based on the above, artificial intelligence is to simulate the human mind through the use and activation of computer devices and systems, and to follow up the human behavior of individuals within educational institutions by subjecting them to many experiences in certain situations, and then monitor their reactions in these situations, and simulate the way of thinking of humans through computer systems, and work to analyze them and ensure the effectiveness and conformity of artificial intelligence with this software in terms of its ability to analyze and learn, collect all evidence and information, and take The decision is based on analysis that simulates the human method. He pointed out (Al-Enezi, 2021) that artificial intelligence technology has many advantages, the most important of which is its embrace of knowledge, and what is meant by this is that the most important characteristic of artificial intelligence is its use of symbolic representation in expressing information, and the ability to learn through observation, and benefiting from previous experiences, so that it depends on the use of machine learning strategies. There are many characteristics of intelligent software systems, such as the ability to analyze, extrapolate, infer and represent, use the method of comparison, and work at a clear, specific and relatively stable level. (Shehata, 2023) stressed that high speed and the ability to perform tasks with high accuracy are among the most important characteristics of intelligence, stressing that the high ability to deduce, deduce and deal

with all contradictory and conflicting information is one of the greatest advantages, as well as the ability to estimate situations and relationships, and reach appropriate and logical conclusions related to all situations through the use of scientific logic. One of the most important features related to the e-learning environment is the ease of understanding and interpreting the rules, laws and regulations related to each specific goal, which helps in saving sufficient time, which is reflected positively, increasing the motivation of faculty members towards work, and performing tasks easier, and artificial intelligence has contributed to many distinguished qualitative leaps by creating an official database that includes all laws, regulations and educational procedures, and working to exploit them by helping various academic leaders in their educational institutions in the field of making Academic and educational decisions (Al-Mutairi, 2019), specifically in light of this digital transformation and the presence of many challenges that many academic leaders may face, especially with regard to the development and acceleration of data significantly, and how to use it to improve leadership skills and educational and administrative decisions in university institutions. (Koedinger, 2008). This idea is what AI supports and provides, especially in terms of decision support, decision-making, and leadership development (Bala, 2012).

Leadership Skills

Leadership focuses on many skills that will lead to increasing the effectiveness of the institution's members, increasing efficiency and productivity, increasing loyalty and job affiliation, and then achieving the goals and vision of the institution with a high degree of proficiency, which is what our universities call for, and from here we start to talk about the most important skills that the educational leader must possess, and perhaps the most important of these skills and the first of them is intellectual skills; thinking is meant idiomatically, as he pointed out (Abdel Fattah, 2004) It is a reflection of concrete reality on the five senses of Homo sapiens, who has the ability to analyze and synthesize things and link them according to their characteristics and features with each other, in addition to the presence of previous information and experiences in the individual. He defined it (Al-Ajmi, 2013) as the ability of the leader to see the organization he leads and his understanding of the interdependence between its parts, and his ability to visualize and understand the employee's relations with the institution, and the relations of the institution as a whole with the society in which he works, and in order for academic leaders to practice these skills efficiently and competently, awareness of some of the essential elements necessary for the educational leadership process is necessary. She also stressed (Al-Ghboun, 2019) that cognitive skills mean mental skills, and mean

the ability to think deeply about all variables, and predict all opportunities to lead institutional performance to the fullest. He also stressed (Kana'an, 2009) that they are the skills that an educational leader should possess in any leadership position he occupies, such as the skill of planning, organizing, coordination, permanent review, nutrition, reviewing guidance, writing down all tasks, work and all events, and the ability to visualize, and understand all organization practices. One of the leadership skills is technical skills, which means the knowledge of academic leaders specialized in any branch of science, and the ability to use them efficiently and effectively, which is consistent with achieving the goals (Al-Taweel, 2006), provided that he possesses the skills Related to communication and supervision of faculty members, specialized follow-up, providing them with assistance with regard to clarifying the objectives of the university, ensuring their follow-up, working on their academic development, ensuring their development by subjecting them to training and rehabilitation courses, and providing full assistance in their application. Al-Hadrami (2019) pointed to the need to develop educational programs, provide motivation to working individuals, and improve the level of performance of individuals. It means the leader's mastery of his work and doing it to the fullest and perfectly, and the ability to be familiar with all the work of officials, and to achieve achievement. There is the skill of problem solving and decision-making, as it is one of the most important skills that an academic leader possesses in managing his institution, which is that the leader has the ability to make decisions, and that he has the administrative skill that qualifies him to make decisions, plan, and the ability to choose the most appropriate alternative among the options.

The relationship between artificial intelligence and the leadership skills of academic leaders: Leadership skills are one of the most important foundations for academic leaders in the success of academic institutions, and directing them correctly and properly to achieve the objectives of the institution, by directing the behavior of individuals and influencing them positively, and intensifying and unifying efforts. Therefore, successful leadership is leadership that is able to move the efforts of individuals properly, create the appropriate conditions, create capabilities, coordinate efforts, and organize things in the right way towards the desired goals. Considering that leadership is an approach, a curriculum and a skill, and has multiple skills and characteristics, this leadership should work in appropriate environmental conditions, and the leader should possess the leadership qualities and skills essential to achieve success for academic leaders in accomplishing their tasks, and achieving a tangible impact on them, hence this study came to talk about modern computer technologies and systems capable of enhancing and

developing these skills (human skills, cognitive skills, and technical skills) such as artificial intelligence technology, which is a scientific-technical approach that possesses many privileges that qualify him for the success of institutional work. (Voltan, 2005) pointed out the need for the academic leader to possess all the necessary leadership skills, the most important of which are: keeping pace with modern developments and technologies, and the ability to use multiple modern management methods in his management of the institution, as well as institutional change that must be redesigned and changed repeatedly and sophisticated in line with modern changes in the modern digital, technological and technical age such as artificial intelligence. Artificial intelligence has made tremendous developments in all fields, especially its entry into the field of university education, as it connects the different areas of learning in the neural network, distinguishes and clarifies them, which is a clear and apparent shift in building knowledge, and artificial intelligence contributes to improving the leadership behavior of academic leaders and all faculty members, through (self-learning) that academic leaders resort to, in terms of following many steps, especially with regard to Leadership skills that will increase creative and imaginative ability by resorting to drawings and programs that contribute to improving the educational process.

Artificial intelligence has had an impact on all education sectors, it was necessary to look at how to apply artificial intelligence to the leadership styles of academic leaders in universities with faculty members, especially since the integration of education with artificial intelligence technology may contribute to reducing the pressures, administrative burdens and administrative tasks entrusted to them, which they carry out and practice daily. With the employment of artificial intelligence in education and all educational institutions, this has reduced direct human interaction between the employees themselves, and may also reduce direct interaction between academic leaders in universities and faculty members, and reliance on modern technologies, which results in enhancing many administrative and educational tasks such as evaluation and follow-up, although the tasks will become more accurate and sensitive, especially when resistance to change appears from some faculty members working in universities, and administrative tasks and leadership practices will become more sensitive and more contradictory especially with traditional practices.

Al-Maliki (2023) aimed to clarify the role of artificial intelligence applications in enhancing educational strategies in higher education (literature review) to clarify the role of artificial intelligence applications in enhancing educational strategies in higher education, and also addressed the strategic benefits that educational institutions

can obtain from integrating artificial intelligence in them, such as improving administrative functions, educational capabilities, research capabilities, and improved learning environments, as well as potential obstacles to Implementation that may limit its effectiveness, such as resistance to change and technical constraints, the study relied on the methodology of reviewing the narrative literature on twenty studies, and one of the most important results was that artificial intelligence has an important role in enhancing the role of teachers, improving the performance of learners and making the learning process more efficient, and the results also found that there is an urgent need to educate stakeholders in education about the importance of using artificial intelligence applications in education strategies, and not to make challenges an obstacle to employing it.

Al-Mugaiti (2022) conducted a study entitled *The Reality of Employing Artificial Intelligence and its Relationship to the Quality of Performance of Jordanian Universities from the Faculty Members' Point of View*. The study sample consisted of (370) faculty members, the descriptive correlational approach was used, a questionnaire was developed consisting of three parts; the first: includes demographic data, the second: to measure the degree of employment of artificial intelligence, and the third: to measure the degree of quality of performance of Jordanian universities. The results of the study showed that the degree of employment of artificial intelligence in Jordanian universities from the point of view of faculty members was Medium. The results also indicated that there were no statistically significant differences in the degree of employment of artificial intelligence according to variables: gender, academic rank, number of years of experience. While the results showed that there are differences according to the variable of the type of college and in favor of scientific colleges. The results also showed that the degree of quality of the performance of Jordanian universities came in an average degree, and that there were no statistically significant differences in the degree of quality of performance of Jordanian universities according to variables: gender, academic rank, number of years of experience, and type of college.

Al-Fifi (2022) conducted a study aimed at identifying the reality of employing artificial intelligence applications in education in Saudi universities from the point of view of faculty members (Taibah University as a model), and to achieve the objectives of the study, the researcher used the descriptive analytical approach to describe the reality of employing artificial intelligence applications in education in Saudi universities, and the study sample consisted of (210) faculty members at Taibah University, the study used a questionnaire to collect data from the sample. The study found that the degree of knowledge of faculty members at Taibah University in employing

artificial intelligence applications in education in Saudi universities came in all fields to a large degree, and the results showed that there are individual differences in employing artificial intelligence applications in education in Saudi universities, according to the degree variable in favor of the lecturer in the areas of (the importance of artificial intelligence applications).

Al-Habib (2022) conducted a study aimed at identifying the reality of employing artificial intelligence applications in training faculty members in Saudi universities from the point of view of education experts: a proposed conception, and the obstacles that limit the employment of these applications, and then presented a proposed perception for employing these applications, and to achieve this goal, the researcher used the descriptive survey approach, and the most important results of the study were that the members of the study sample agree to a (medium) degree on the reality of employing artificial intelligence applications in training faculty members in Saudi universities, and that The members of the study sample (agree) on the existence of obstacles that limit the employment of artificial intelligence applications in the training of faculty members in Saudi universities, and the study presented a proposed conception that included: justifications for the proposed conception, its objectives, procedural content, and application requirements.

Al-Ajmi (2021) conducted a study aimed at identifying the role of artificial intelligence (AI) in education from the point of view of students of the College of Basic Education in the State of Kuwait, and to achieve the objectives of the study, the researcher distributed a questionnaire to a sample of (229) students studying the computer course at the College of Basic Education, and the results of the study showed that there are differences in the responses of the study sample about the challenges facing students due to the academic year, and there are differences in the responses of the study sample due to gender and cumulative average.

Al-Ghboun (2020) conducted a study aimed at identifying the level of emotional intelligence and its relationship to the leadership skills of school principals in Bethlehem Governorate, and to achieve the objectives of the study, the researcher used two questionnaires for emotional intelligence and leadership skills, and the study population consisted of all (179) principals of Bethlehem schools. The results of the study found that the degree of practicing leadership skills in schools was high. The study also found that educational institutions are obliged to provide the necessary leadership training and to subject them all to academic and professional improvement and development.

Al-Muhaimeed (2020) conducted a study aimed at identifying the most important obstacles to evaluating training programs for faculty members using the Kirk-Patrick model at the Center for Skills and Leadership Development at Qassim University, and to achieve the objectives of the study, the Kirk-Patrick model was used from the point of view of faculty members, with an indication of the extent of the impact of the two variables (gender and college type) in that, and the study relied on the descriptive approach, and the study used the questionnaire tool to collect data, as it was distributed to a sample of (300) faculty members (males and females) at Qassim University, and The study concluded that there are a number of organizational, human and financial obstacles that prevent the application of the Kirkpatrick model, and concluded with a number of recommendations that emphasize the importance of activating the model, to improve the performance of the Center for Skills Development and Leadership at Qassim University.

The study (Ady, 2020) aimed to detect data management in smart city systems using artificial intelligence, and it took place in Hungary, and to achieve the goal of the study, a qualitative methodology based on data generation was used, the results of the study indicated that smart cities rely on artificial intelligence systems that are characterized by their high sensitivity, which calls for searching for the best means to protect those systems from theft or modification, the study pointed to a proposed role for the development of artificial intelligence systems based on monitoring the flow of data by A system based on specific standards that are continuously measured to ensure the effectiveness of smart systems in smart cities and the possibility of developing them, and building new smart cities.

Buah, (2020) stressed in his study, which aimed to identify the applications of artificial intelligence in energy systems with a focus on the phenomenon of social acceptance of energy projects, and was conducted in Europe. The study sample consisted of (198) volunteers from (15) different countries, and to achieve the objective of the study, the quantitative methodology based on the questionnaire, and the qualitative methodology based on the analysis of the simulation experiment carried out by the system for the energy project, were used. The results of the study showed an impact of the application of artificial intelligence systems at the level of communication The results also showed that artificial intelligence applications contribute to providing an opportunity for community participation in influencing project results and outputs from their homes using smart digital technologies.

Rienties, Simonsen, (2020) conducted a study that aimed to provide a brief overview of four distinct research areas: Artificial Intelligence

and Education (AIED), Computer Assisted Collaborative Learning (CSCL), Educational Data Mining (EDM), and Learning Analytics (LA). While all four areas focus on understanding learning and teaching using technology, each area has a unique or relatively common perspective that may be theoretical frameworks and methods. Ontology is appropriate, and the study concluded that researchers should be encouraged to transcend the boundaries of their field of specialization and work together in addressing complex challenges in education.

Zhao, (2019) conducted a study aimed at revealing the impact of the use of AI-based online teaching systems conducted in China. To achieve the objective of the study, a critical descriptive approach based on the analysis of teaching systems was used to analyze studies that used AI-based online teaching systems. The results indicated that the use of AI-based teaching systems via the Internet positively affected the academic achievement score of students.

Al-Dawood (2019) conducted a study aimed at identifying the role of self-training for academic leaders at King Saud University as an input to achieve administrative efficiency, and to identify the most important statistical differences attributed to variables (type, years of experience, and number of training courses). To achieve the objectives of the study, the researcher used the questionnaire and it was applied to all heads of academic departments and their two agents at King Saud University, numbering (100) faculty members, and the results of the study showed that the study members believe that the role of training leads to dealing with issues effectively, helps to improve leadership skills and interpersonal abilities, as shown to be statistically significant differences attributable to males.

Al-Mutairi (2019) conducted a study aimed at identifying the shortcomings and weaknesses in the application of artificial intelligence as an input to the development of educational decision-making in the Ministry of Education in the State of Kuwait, and to achieve the objectives of the study, the researcher used the Delphi method, and the results of the study found a weak reliance on artificial intelligence in solving problems related to problem solving.

Shteivi (2018) conducted a study aimed at the aim of the research to identify leadership skills (technical, humanitarian, intellectual) and their relationship to the level of job performance from the point of view of employees at the Palestine Technical College, and to achieve the objectives of the research, the researcher followed the descriptive analytical approach for its suitability to the subject of the research, and the research community consisted of all employees in the college, which numbered (176) workers, where the researcher relied on the questionnaire as a main tool to collect data on the problem in

question. The results of the research showed that the availability of leadership skills was to a large extent by (68.818), technical leadership skills were with a relative weight (69.690), followed by human leadership skills with a relative weight (68.312), followed by intellectual leadership skills with a relative weight (68.452). And that the level of job performance came with an average degree and a relative weight (66.128). The results also showed a statistically significant relationship at the level of significance ($\alpha \leq 0.05$) between technical leadership skills in all its dimensions (intellectual, humanitarian, and technical) and the level of job performance from the point of view of employees. It was also found that there were no statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the responses of the research sample members about leadership skills and the level of job performance attributed to variables: (gender, age, number of years of service, educational qualification, job title). Among the recommendations that emerged from the research is to seek to enhance the diverse leadership skills of employees in light of a training framework that combines multiple activities in the college, as well as work to improve the level of job performance of employees in the college by providing material and moral work requirements.

Luo, D. (2018) Study. This study aimed to make Prolo Java and AI language software to prepare a guide to the teaching system based on artificial intelligence, and it relied on the theory of the expert system of artificial intelligence, and at the same time designed the Struts + Spring Hibernate lightweight JavaEE framework, and the degree of coupling of each unit in the system has been greatly reduced to facilitate the expansion of functions for the future based on the principle of teaching the expert system based on artificial intelligence, and the results have shown that the system is applicable and useful. The conclusion indicates that the AI system is effective and has a certain reference significance. The current study agreed with most previous studies in terms of the scientific method used as a study (Al-Mugaiti, 2022), (Al-Fifi, 2022), and (Buah, & Kesse 2020). The current study benefited from previous studies in many aspects, the most important of which are: enriching the general framework and theoretical background of the current study, in light of the theoretical frames of reference for those studies, choosing the appropriate scientific method and determining its procedures, as well as identifying research tools and steps followed in preparing them.

Study Problem:

The problem of the study appeared because the researcher works in university teaching in Jordanian universities, and for the technical and technological role used in teaching, and the faculty member is

considered the backbone of university education for carrying out several tasks and roles within the university, including administrative and leadership roles at the university, teaching, scientific research and community service, and the quality of university education outputs depends largely on the quality of the performance of the faculty member and his efficiency in carrying out the academic roles entrusted to him, and the importance of the role played by academic leaders in universities. This is evident through the daily administrative dealing with faculty members, the largest category of students, administrators and members of the local community, which requires the availability of a high degree of leadership skills at an advanced level, as ignorance of the foundations of administrative work leads to obstruction of administrative work and all its procedures, and the lack of qualified and properly trained leaders may lead to obstructing the daily workflow and thus affecting performance levels. The main principle of artificial intelligence is to simulate and exceed the way humans absorb and interact with the world around us, which has quickly become the main pillar of innovation, after artificial intelligence has become equipped with several forms of machine learning that recognize data patterns in order to make predictions, artificial intelligence can provide a more comprehensive understanding of the abundance of available data, and rely on forecasts in order to automate highly complex tasks as well as usual tasks, Al-Dawood's study (2019) showed the role of self-training for academic leaders at King Saud University as an entry point to achieve administrative efficiency, and this was shown by the study (Ady, 2020), which revealed methods of data management in smart city systems using artificial intelligence, and the study of Shteivi (2018), which aimed to identify leadership skills and their relationship to the level of job performance from the point of view of employees. The problem of the study was to reveal the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the North From the point of view of faculty members, the researcher saw the need to conduct this study, and for this study answered the following questions:

Study Questions:

The first question: "What is the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the Northern Region from the point of view of faculty members"?

The second question: "Are there statistically significant differences at the level of significance ($0.05 = \alpha$) between the arithmetic means of the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the northern

region due to demographic variables (type of university, college, academic rank)"?

Objectives of the study: The current study aimed to achieve the following

- Revealing the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the Northern Region from the point of view of faculty members.
- Revealing the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the Northern Region due to demographic variables (type of university, college, academic rank).

The importance of the study: The current study gains its importance through the following

- This study contributes to providing a conceptual framework on employing artificial intelligence programs in administrative leadership, and employing artificial intelligence applications in training faculty members in Jordanian universities in terms of theoretical importance.
- Artificial intelligence programs contribute to enabling humans to use human language in dealing with machines instead of computer programming language, which makes machines and their use accessible to all segments of society.
- Smart systems contribute to the areas in which decision-making is made in these systems, and they enjoy independence, accuracy and objectivity, and therefore their decisions are far from error, bias, racism, prejudices or even external or personal interventions.
- Smart machines relieve humans of many risks and psychological pressures, and make them focus on more important and more humane things; and employ these machines with hard and dangerous work, explore unknown places, and participate in rescue operations during natural quarts.
- The faculty member benefits from programs that simulate the performance of the human expert in the field of his specific expertise to spread his findings of science, serve the community, provide administrative services to the responsible authorities and harness robots in human conversations with students, and smart learning systems are the first to justify him, to benefit from them in his self-learning, and the education of his students.
- This study contributes to its attempt to contribute to directing the attention of those working in the field of leadership and

management to help academic leaders, administrators and policy makers in making the appropriate administrative decision to promote these concepts among academic leaders of faculty members through the feedback provided by this study.

Study limits: The results of this study are determined by a set of limits, namely

- **Human, spatial and temporal determinant:** This study was applied to faculty members in public and private universities in Jordan during the first semester of the academic year (2023/2024).
- **Objective (procedural) determinant:** The results of the study were limited to the sincerity and stability of the study tool used, which was prepared and developed by the researcher, and was represented by the preparation of a questionnaire consisting of (3-2) paragraphs in light of the study variables (type of university, college, academic rank).

Terminological and procedural definitions of study terms

- **Artificial intelligence:** Ehab (2018) defines it idiomatically as the process of simulating human intelligence through computer systems, and this is done by studying the behavior of human behavior by conducting experiments on their behavior, putting them in situations, monitoring their reactions, thinking patterns, and dealing with these situations, and then trying to simulate the human way of thinking through complex computer systems. **The researcher defines it procedurally** as a science that examines its ability to simulate the human mind and intelligence of most educational leaders, and is measured by the degree to which the respondent answers the paragraphs of the questionnaire prepared for this purpose.
- **Trends:** Al-Nuseirat, Al-Tweissi, Al-Ma'ani and Krishan (2013) define it as a set of ideas, beliefs and knowledge that include positive or negative evaluations related to a central idea or topic, and that this knowledge produces certain patterns of behavior. **The researcher defines it procedurally** as the degree of feeling of faculty members and their tendency towards employing artificial intelligence, which is expressed as a result of their responses to the paragraphs of the tool prepared for this study.
- **Leadership skills:** defined by Al-Sha'er (2016) idiomatically as a set of cognitive, personal and technical attributes and abilities with efficiency and effectiveness that the leader possesses in order to carry out their work easily, accurately and quickly to achieve the required goals, and the researcher defines it procedurally as the skills possessed by academic leaders that

affect the behavior of faculty members and direct them towards achieving their goals efficiently and effectively, and measured by the degree to which the respondent answers the questionnaire prepared for this purpose.

- **Academic leaders:** Al-Najjar (2012) defines it idiomatically as the individuals entrusted with all administrative work at the university in addition to their work as academics, represented by (Dean of the Faculty, and Head of the Department) where they possess a set of skills, experiences, abilities and methods that qualify them to perform administrative tasks in order to achieve the goals and vision of the university, and the researcher defined it procedurally They are faculty members in public and private universities in the northern region, and they are the respondents to the questionnaire prepared for this purpose.

Method and procedures: The following are a description of the study population and sample, the study tool, methods of verifying its validity and stability, study variables, and statistical treatments that will be used to reach the results.

Study methodology: The researcher used the quantitative analytical survey method to collect and analyze data in order to answer the questions of the study, as this approach is the most appropriate for such studies.

Study population and sample:

The study population consisted of all faculty members in public and private universities in the Northern Region during the academic year (2023/2024). A sample of (265) faculty members from the study population was randomly selected, as shown in Table (1)

Table (1): Distribution of Study Sample Members According to Study Variables

Study variables	Categories	Iteration	Ratio
Gender	male	106	40.0%
	female	159	60.0%
	Total	265	100.0%
Academic Rank	Assistant Professor	72	27.2%
	Associate Professor	134	50.6%
	professor	59	22.3%
	Total	265	100.0%
University Type	Public Universities	156	58.9%
	Private Universities	109	41.1%
	Total	265	100.0%

Study Tool: The study tool was developed to measure "The role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the northern region from the point of view of faculty members", where the tool consisted of (32) items, distributed over three areas: **The first field:** intellectual skills, consisting of (10) paragraphs, **the second field:** problem solving and decision-making, and it consists of (8) paragraphs, **and the third field:** Technical skills, consisting of (14) items.

Believe the Study Tool:

A. Authenticity of the questionnaire: To verify the validity of the questionnaire, it was presented to a committee of arbitrators and experts in the field, numbering (12) arbitrators with competence and experience, and the directives and suggestions of the members of the committee were taken, as the linguistic wording of some paragraphs was modified when six arbitrators agreed on it.

B. Authenticity of the Construction of the Study Tool

To verify the validity of the construction, the study tool was applied to an exploratory sample consisting of (30) faculty members from outside the study sample, and to identify the sincerity of the internal consistency of the tool and the extent of the contribution of its component paragraphs, by calculating the Pearson correlation coefficient; The following table shows the paragraphs of the study tool with the total degree of the field to which it belongs:

Table (2): Correlation Coefficients of The paragraphs of the Study tool with the Total Degree of The field to Which it Belongs.

Intellectual skills			Problem Solving and Decision Making			Technical skills					
Paragraph	Correlation coefficient	Significance level	Paragraph	Correlation coefficient	Significance level	Paragraph	Correlation coefficient	Significance level	Paragraph	Correlation coefficient	Significance level
1	0.67**	0.000	1	0.81**	0.000	1	0.71**	0.000	11	0.69**	0.000
2	0.75**	0.000	2	0.81**	0.000	2	0.64**	0.000	12	0.70**	0.000
3	0.78**	0.000	3	0.65**	0.000	3	0.67**	0.000	13	0.63**	0.000
4	0.67**	0.000	4	0.57**	0.000	4	0.60**	0.000	14	0.72**	0.000
5	0.71**	0.000	5	0.60**	0.000	5	0.59**	0.000			
6	0.76**	0.000	6	0.63**	0.000	6	0.69**	0.000			
7	0.71**	0.000	7	0.70**	0.000	7	0.70**	0.000			
8	0.79**	0.000	8	0.66**	0.000	8	0.77**	0.000			
9	0.72**	0.000				9	0.65**	0.000			
10	0.80**	0.000				10	0.62**	0.000			

**** Statistically significant at the level of ($\alpha = 0.01$).**

*** Statistically significant at the level of ($\alpha = 0.05$).**

Table (2) shows that the values of the correlation coefficients of paragraphs on the field of intellectual skills have ranged between (0.67-0.80), and shows that the values of paragraph correlation coefficients on the field of problem solving and decision-making ranged between (0.57-0.81), and the values of correlation coefficients for the field of technical skills ranged between (0.59-0.77), and all these values were statistically significant, and this means that there is a degree of sincerity of internal consistency in paragraphs on the scale. Table 3 shows the values of the Pearson correlation coefficient, between the fields of the study tool and the overall score of the instrument:

Table (3): Matrix of Correlation Coefficients Between Domains and Total Score

domains	The scale as a whole
Intellectual skills	0.83**
Problem Solving and Decision Making	0.82**
Technical skills	0.85**

**** Statistically significant at the level of ($\alpha = 0.01$).**

*** Statistically significant at the level of ($\alpha = 0.05$).**

It is noted from Table (3) that there are high and statistically significant correlation coefficients at ($0.05 = \alpha$) between the domains with the total score of the tool, which ranged between (0.82 – 0.85), which means that there is a degree of internal consistency between the domains and the total score on the tool.

Stability of the study tool: To verify the stability of the study tool, the internal consistency method Cronbach's Alpha was applied, as the tool was applied to a sample consisting of (30) faculty members from outside the target study sample, and Table (4) shows the results of this:

Table (4) Cronbach's Alpha Internal Consistency Stability Coefficients

	Domain	Cronbach Alpha	Number of paragraphs
1	Intellectual skills	0.85	10
2	Problem Solving and Decision Making	0.81	8
3	Technical skills	0.89	14
	The tool as a whole	0.90	32

Table (4) shows that the values of the stability coefficients according to the Cronbach alpha method for the paragraphs of the tool the role of artificial intelligence in developing leadership skills among academic leaders in public and private universities in the northern region from the point of view of faculty members ranged between (0.81-0.89), while the Cronbach alpha coefficient on the paragraphs of the tool as a whole reached (0.90). These values are appropriate for the purposes of the present study.

- The degree of the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the Northern Region was determined from the point of view of faculty members at three levels through the following equation:

Category length = (highest value of the alternative – minimum value of the alternative) / number of scores.

$$= (5-1) / 3 = 1.33$$

Therefore, the scores (1-2.33) became low, (2.34-3.67) medium, and (3.68-5.00) high.

Study variables: The study included the following variables

First: Intermediate Variables:

Qualification Gender: It has two categories: (male, female).

Academic Rank: It has three categories: (Assistant Professor, Associate Professor, Professor).

University type: It has two categories: (governmental, private).

Second: Dependent Variables: The attitudes of faculty members in Jordanian public and private universities towards the impact of the role of artificial intelligence among academic leaders in developing their leadership skills, which is expressed in the arithmetic averages of the estimates of the sample members on the paragraphs of the questionnaire.

Statistical processing: arithmetic averages and standard deviations, Three-Way Manova test were used.

Study results and discussion: This study aimed to reveal "the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the Northern Region from the point of view of faculty members" by answering the following questions:

The results related to the first question, which stated: "What is the role of artificial intelligence in enhancing the leadership skills of

academic leaders in public and private universities in the Northern Region from the point of view of faculty members? "To answer this first question, the arithmetic averages and standard deviations of the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the Northern Region were calculated from the point of view of faculty members in general and for each field, and Table (5) shows this.

Table (5) Arithmetic Averages and Standard Deviations of the Role of Artificial Intelligence in Enhancing the Leadership Skills of Academic Leaders in Public and Private Universities in the Northern Region from the Faculty Members' Point of View

#	Domain	Arithmetic mean	Standard deviation	Rank	Level
1	Intellectual skills	3.11	0.57	1	medium
2	Problem Solving and Decision Making	2.76	0.44	2	medium
3	Technical skills	2.29	0.45	3	low
Total Grade		2.95	0.47		medium

It is noted from the results of Table (5) that the total arithmetic average of the role of artificial intelligence in enhancing the leadership skills of academic leaders in public and private universities in the northern region from the point of view of faculty members was (2.95), and with a standard deviation (0.45), and at an intermediate level. In first place was the field of "intellectual skills" with an arithmetic average (3.11), and with a standard deviation (0.57), and at an intermediate level. In second place came the field of "problem solving and decision-making" with an arithmetic average (2.76), and with a standard deviation (0.44), and at an intermediate level. In the third and last rank, the field of "technical skills" came with an arithmetic average (2.29), and with a standard deviation (0.45), and at a low level. The reason for this is the acceptance of academic leaders to employ the role of artificial intelligence in administrative work, due to its importance and ability to develop the leadership skills they possess compared to other methods, due to the algorithms it provides capable of recalling data about the skill possessed by the leader, and its analysis to choose the most appropriate based on scientific criteria; and contributes to the rehabilitation, and development of skills and reliance on human capabilities, and undergoing courses and skills without the use of emotional intelligence, which shows the strength and effectiveness of artificial intelligence in developing leadership skills of academic leaders. The results of this question agreed with the results of the study of Al-Mugaiti (2022), which showed that the degree of employment of

artificial intelligence in Jordanian universities from the point of view of faculty members was average, and also agreed with the results of the study (Al-Maliki, 2020), which aimed to Clarify the role of artificial intelligence applications in enhancing educational strategies in higher education, and also stressed the most important strategic benefits that can be obtained through educational institutions. It agreed with the results of a study (Reinties, 2020), which stressed the need to get rid of all obstacles that limit From the application of artificial intelligence in higher education, and agreed with the results of the study (Zhao, 2019), which indicated that the use of teaching systems based on artificial intelligence via the Internet and positively affected the degree of academic achievement of students, and the results of the study (Luo, 2019) pointed out that the artificial intelligence system is effective and has a certain reference importance, and differed with the results of the study of Al-Fifi (2022), which showed that the degree of knowledge of faculty members at Taibah University in employing artificial intelligence applications in education in Saudi universities, the results were average. The arithmetic averages and standard deviations for each of the paragraphs on the domains are presented in descending order on the domain, and Table (6) illustrates this:

Table (6): Arithmetic Averages and Standard Deviations of the Paragraphs of The Role of Artificial Intelligence in Enhancing the leadership Skills of Academic leaders in Public and Private universities in the Northern Region from the Point of View of Faculty Members In Descending Order

NO.	PARAGRAPH	ARITHMETIC MEAN	STANDARD DEVIATION	RANK	LEVEL
5	The leader's AI develops close and continuous follow-up.	3.70	0.96	1	HIGH
1	Artificial intelligence helps academic leaders analyze and infer the educational situation to achieve positive interaction.	3.62	0.79	2	MEDIUM
4	AI guides leaders to continuously blog business and events.	3.47	0.94	3	MEDIUM
2	AI fosters academic leaders to understand the organization it leads and to understand the interconnectedness between its parts.	3.23	0.88	4	MEDIUM
10	Artificial intelligence warns academic leaders of the need to provide and enforce regulations and laws related to work.	3.12	0.89	5	MEDIUM
8	Guides Artificial Intelligence Academic leaders take advantage of the mistakes faced by working individuals to take advantage of.	3.07	0.79	6	MEDIUM
3	Artificial intelligence academic leaders develop the ability to think creatively.	3.02	0.78	7	MEDIUM
7	Artificial intelligence develops the university to invest in the modern ideas proposed by faculty members and take their opinion.	2.94	0.86	8	MEDIUM

NO.	PARAGRAPH	ARITHMETIC MEAN	STANDARD DEVIATION	RANK	LEVEL
6	AI directs the academic leader to distribute work responsibilities based on specialization and experience	2.82	0.95	9	MEDIUM
9	Artificial intelligence promotes academic leaders to adopt new ideas to develop university work	2.13	0.75	10	LOW
TOTAL DEGREE IN THE FIELD OF INTELLECTUAL SKILLS		3.11	0.57	MEDIUM	
3	AI helps academic leaders save time and effort when making decisions	3.25	0.98	1	MEDIUM
2	Academic leaders rely on artificial intelligence to solve problems related to flight that is difficult for the human mind to take.	3.17	0.81	2	MEDIUM
1	Universities rely on the human element to enhance smart devices with the information necessary to develop leadership skills.	2.95	0.86	3	MEDIUM
7	Academic leaders and faculty members are trained in AI-based decision-making.	2.94	0.77	4	MEDIUM
4	Artificial intelligence contributes to the analysis of complex, easy, and decision-making choices.	2.92	0.90	5	MEDIUM
6	AI makes decisions by learning from past experiences in decisions like them.	2.32	0.74	6	LOW
8	AI helps identify weaknesses in sound decision-making.	2.28	0.83	7	LOW
5	AI helps make decisions based on learning from human input.	2.22	0.80	8	LOW
TOTAL DEGREE IN THE FIELD OF PROBLEM SOLVING AND DECISION-MAKING		2.76	0.44	MEDIUM	
4	AI helps academic leaders change their strategies to get new opportunities when making decisions.	2.88	0.84	1	MEDIUM
5	Artificial intelligence is contributing to the change in the selection criteria for academic leaders in universities.	2.83	0.85	2	MEDIUM
10	Artificial intelligence develops in academic leaders the ability to influence others.	2.38	0.99	3	MEDIUM
12	Artificial intelligence directs academic leaders to activate modern technological techniques to keep pace with developments in the field of specialization.	2.38	0.99	4	MEDIUM
13	Academic leaders have the ability to read the future of their college and set specific achievable goals.	2.34	0.83	5	MEDIUM
11	Artificial intelligence strengthens academic leaders in how to divide work and tasks according to a clear and specific organizational structure.	2.26	0.74	6	LOW
6	AI helps academic leaders have the ability to dialogue.	2.22	0.76	7	LOW
3	Artificial intelligence helps academic leaders provide traditional jobs to carry out other tasks that serve the educational process.	2.20	0.83	8	LOW
9	AI helps academic leaders employ feedback appropriately when making decisions.	2.19	0.72	9	LOW
8	AI helps academic leaders ignore small mistakes and focus on what matters most.	2.19	0.86	10	LOW
2	AI helps academic leaders find new smart jobs for faculty.	2.18	0.67	11	LOW

NO.	PARAGRAPH	ARITHMETIC MEAN	STANDARD DEVIATION	RANK	LEVEL
1	Artificial intelligence helps academic leaders have the ability to act strategically right, by constantly changing their strategies to get new opportunities.	2.13	1.00	12	LOW
7	AI develops academic leaders to hold evaluation meetings for faculty performance on a permanent and periodic basis.	2.12	0.66	13	LOW
14	Artificial intelligence guides academic leaders the ability to adapt to all the changes and developments around them.	1.77	0.60	14	LOW
TOTAL DEGREE IN THE FIELD OF TECHNICAL SKILLS		2.29	0.45	LOW	

Table (6) shows that the total arithmetic mean of the field of intellectual skills has reached (3.11), with a standard deviation of (0.57) and with an average degree, and the researcher attributes the reason for this to the role played by artificial intelligence in special operations related to intellectual skills, which enable them to solve and predict problems before they occur by retrieving information and data related to problems and decisions from their electronic sources for reference in solving problems, which the human element cannot do. In first place in the field came paragraph (5), which stipulates "artificial intelligence develops the leader of diligent and continuous follow-up", with an arithmetic average of (3.70), and a high score. In the last rank came paragraph (9), which stated "Artificial intelligence promotes academic leaders to adopt new ideas to develop university work" with an arithmetic average of (2.13) and a low score. Table (6) also shows that the total arithmetic mean for the field of problem-solving and decision-making was (2.76), with a standard deviation of (0.44) and a medium degree. In the first place in the field came paragraph (3), which stated that "artificial intelligence helps academic leaders save time and effort when making decisions" with an arithmetic average of (3.25) and an average score. In the last rank, paragraph (5), which stipulates "Artificial intelligence helps make decisions based on learning from human inputs" came with an arithmetic average of (2.22), with a low score. Table (6) shows that the total arithmetic mean for the field of technical skills reached (2.29), with a standard deviation of (0.45) and a low degree, and came in first place in the field paragraph (4), which stated "Artificial intelligence contributes to helping academic leaders change their strategies to obtain new opportunities when making decisions" with an arithmetic average of (2.88) and an average score. In the last rank, paragraph No. (14), which stated that "artificial intelligence guides academic leaders the ability to adapt to all changes and developments around them" came with an arithmetic average of (1.77) and a low

score. These results agreed with the results of the study (Al-Mugaiti, 2022) and the study (Al-Habib, 2022), which showed that the degree of employment of artificial intelligence was average, and differed with the results of the study (Al-Mutairi, 2019), and the results of the study (Al-Fifi, 2022), which showed that the degree of employment of artificial intelligence was large. It disagreed with the study (Al-Ghboun, 2020) in terms of the degree of practicing leadership skills in schools, as it was high. The current study agreed with the study (Al-Dawood, 2019) in terms of differences in gender and in favor of males, as he pointed out that the study members believe that the role of training leads to dealing with issues effectively, and helps to improve leadership skills and personal abilities, and showed that there are statistically significant differences attributed to males. As well as (Al-Ajmi, 2021) in terms of gender differences. It disagreed with the studies of both (Al-Mugaiti, 2022) and the study of (Shteivi, 2018) in that there were no differences due to the variables of rank and gender.

Second: The results related to the second question, which stated:

"Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the arithmetic averages of the responses of the study sample members on the role of artificial intelligence in developing leadership skills among academic leaders in public and private universities in the northern region according to variables (gender, academic rank, and university type)?" To answer the second question, the arithmetic averages and standard deviations of the responses of the study sample members on the role of artificial intelligence in developing skills were calculated. Leadership among academic leaders in public and private universities in the Northern Region according to study variables (gender, academic rank, and type of university), and Table (7) shows this.

Table (7): Arithmetic Averages and Standard Deviations of the Role of Artificial Intelligence in Developing Leadership Skills among Academic Leaders in Public and Private Universities in the Northern Region According to the Study Variables

Variable	Levels		Intellectual skills	Problem Solving and Decision Making	Technical skills	Performance as a whole
Gender	female N= 159	Arithmetic mean	3.01	2.67	2.21	2.86
		Standard deviation	0.64	0.49	0.46	0.53
	male N= 106	Arithmetic mean	3.26	2.90	2.41	3.10
		Standard deviation	0.41	0.29	0.39	0.30

Variable	Levels		Intellectual skills	Problem Solving and Decision Making	Technical skills	Performance as a whole
Academic Routine	Total N=265	Arithmetic mean	3.11	2.76	2.29	2.95
		Standard deviation	0.57	0.44	0.45	0.47
	professor N= 72	Arithmetic mean	3.08	2.70	2.20	2.91
		Standard deviation	0.44	0.46	0.47	0.40
	Associate Professor N= 134	Arithmetic mean	3.12	2.77	2.33	2.97
		Standard deviation	0.57	0.43	0.44	0.46
	Assistant Professor N= 59	Arithmetic mean	3.12	2.77	2.30	2.96
		Standard deviation	0.67	0.44	0.43	0.52
	Total N=265	Arithmetic mean	3.11	2.76	2.29	2.95
		Standard deviation	0.57	0.44	0.45	0.47
University Type	Government N=156	Arithmetic mean	3.20	2.81	2.36	3.02
		Standard deviation	0.56	0.38	0.42	0.44
	Private N= 109	Arithmetic mean	2.99	2.69	2.19	2.86
		Standard deviation	0.57	0.49	0.46	0.49
	Total N=265	Arithmetic mean	3.11	2.76	2.29	2.95
		Standard deviation	0.57	0.44	0.45	0.47

Table (7) shows apparent differences between the arithmetic averages. To show the statistical differences between the averages of the responses of the study sample members on the domains and the total degree of the scale according to the variables of the study, a multivariate variance analysis was used (MANOVA), and Table (8) shows the results of this.

Table (8): Results of Multivariate Triple-Variance Analysis (MANOVA) In the Responses of Study Subjects To the Role of Artificial Intelligence In Developing leadership Skills Among Academic leaders According To the Study Variables

Contrast Source/Variable	domains	Sum of squares	Degrees Freedom	medium squares	F value	level Significance
Sex Hotelling's = 0.086 Sig=0.000.	Intellectual skills	3.753	1	3.753	12.112	.001*
	Problem Solving and Decision Making	3.197	1	3.197	18.080	.000*
	Technical skills	2.162	1	2.162	11.772	.001*
	The tool as a whole	3.501	1	3.501	17.528	.000*
University Type Hotelling's = 0.052 Sig=0.004	Intellectual skills	2.641	1	2.641	8.523	.004*
	Problem Solving and Decision Making	.744	1	.744	4.208	.041*
	Technical skills	1.741	1	1.741	9.479	.002*
	The tool as a whole	1.655	1	1.655	8.284	.004*
Academic Rank Wilks' Lambda = 0.988 Sig=0.794	Intellectual skills	.134	2	.067	.216	.806
	Problem Solving and Decision Making	.053	2	.027	.150	.861
	Technical skills	.403	2	.202	1.098	.335
	The tool as a whole	.053	2	.027	.134	.875
Error	Intellectual skills	80.570	260	.310		
	Problem Solving and Decision Making	45.979	260	.177		
	Technical skills	47.759	260	.184		
	The tool as a whole	51.927	260	.200		
Adjusted total	Intellectual skills	87.161	264			
	Problem Solving and Decision Making	50.221	264			
	Technical skills	52.473	264			
	The tool as a whole	57.311	264			

*Significant at the level of ($\alpha=0.05$).

Table 8 shows the following:

1- Gender Variable: The results showed that there were statistically significant differences at the level of statistical significance ($0.05 = \alpha$) between the estimates of individuals on all areas (intellectual skills, problem solving and decision-making, technical skills) due to the difference in sex, as the statistical value of the (F) test on the fields was (12.112) (18.080) (11.772) and the level of significance (0.001) (0.000) (0.001) respectively, and all these values are considered statistically significant at ($0.05 = \alpha$). It also shows that there are statistically significant differences at the level of significance (0.05)

on the total degree of the instrument due to the difference in sex, where the value of ($\alpha=F$) on the tool as a whole reached (17.528) with a level of significance (0.000), and this value is statistically significant, as the differences were in favor of male individuals with an arithmetic average higher than females in all fields, the researcher attributes the reason for this to the lack of agreement of the study sample on the effectiveness of artificial intelligence in developing leadership skills, This is also due to the fact that males are more aware about the importance, role and impact of artificial intelligence in activating their leadership abilities and skills. The results of this study differed with the study of (Al-Ajmi, 2021), and agreed with the study (Al-Fifi, 2022), which showed differences in favor of males, and the study of (Muhaimeed, 2020) and in the tool as a whole.

2- Type of University: The results showed that there are statistically significant differences at the level of statistical significance ($\alpha = 0.05$) between the estimates of individuals on all fields (intellectual skills, problem solving and decision-making, technical skills) due to the different type of university, as the statistical value of the (F) test on the fields was (8.523) (4.208) (9.479) and the level of significance (0.004) (0.041) (0.002) respectively, and all these values are considered statistically significant at ($\alpha = 0.05$). It also shows that there are statistically significant differences at the level of significance (0.05) on the total degree of the instrument due to the difference in the type of university, where the value of ($\alpha=F$) on the tool as a whole (8.284) with a level of significance (0.004), and this value is statistically significant, as the differences were in favor of members of public universities with a higher arithmetic average than members of private universities in all fields, and in the tool as a whole, and the researcher attributes the reason for this to the keenness of government university administrations to Academic leaders, and the relentless pursuit of the application of all modern technologies, specifically from artificial intelligence programs; Public universities have programs, courses and workshops towards training administrators in employing artificial intelligence and developing leadership skills among academic leaders from faculty members and their implications for outputs. The results showed that there were statistically significant differences at the level of statistical significance ($\alpha = 0.05$) between the estimates of individuals on all areas (intellectual skills, problem solving and decision-making, technical skills) due to the difference in gender and in favor of males. The researcher attributes that there are differences between university employees in their different response to the role of artificial intelligence in raising their leadership skills and in all three areas of the questionnaire, and it appears through their preference for modern methods and full reliance on the employment of artificial

intelligence techniques at the present time, especially with the global changes that require the need to use them and their conviction of the importance of applying them, through the constant pursuit and continuous training of all faculty members in expanding their capabilities, and increasing the number of male academic leaders compared to females. The researcher attributes a difference in the nature and composition of females. It disagreed with Al-Muhaimeed's study (2020), which showed that there are a number of organizational, human and financial obstacles that prevent the application of the Kirk-Patrick model, and stressed the importance of activating the model, to improve the performance of the Skills and Leadership Development Center at Qassim University. The results showed that there were statistically significant differences at the level of statistical significance ($\alpha = 0.05$) between the estimates of individuals in all fields (intellectual skills, problem solving and decision-making, technical skills) due to the different type of university and in favor of public universities. The researcher attributed this to the keenness of public universities to constantly and continuously strive to keep pace with all technological and technical developments, especially in light of changes, and to achieve competitive advantage among scientific higher education institutions and achieve sustainable development. The researcher that the dynamic nature and high entrepreneurial spirit and innovation of faculty members and taking the initiative, which contribute significantly to the achievement and development of their leadership skills.

3- Academic Rank: The results showed that there were no statistically significant differences at the level of statistical significance ($\alpha = 0.05$) between the estimates of individuals on all fields (intellectual skills, problem solving and decision-making, technical skills) due to the difference in academic rank, as the statistical value of the (F) test on the fields was (0.216), (0.150) (1.098) and the level of significance (0.806) (0.861) (0.335) respectively, and all these values are not statistically significant at ($\alpha = 0.05$), there were no statistically significant differences at the significance level ($\alpha = 0.05$) on the total score of the instrument due to the difference in academic rank, where the value of (F) on the tool as a whole was (0.134) with a significance level of (0.875), and this value is not statistically significant, which indicates that there were no statistically significant differences in the sub-domains and the total score of the tool due to the difference in academic rank. University administrations seek to apply artificial intelligence in universities, which contributes to ensuring the continuity of academic leaders in performing their roles, and educational policy makers seek to conduct periodic reviews of a policy for the application of artificial intelligence so that all leadership and

administrative departments needed to work in educational environments rich in artificial intelligence are reviewed. The results of this study are consistent with the study of Al-Fifi (2020).

Recommendations: In light of the findings of the study, it recommends the following recommendations:

- The need to employ new strategies that enhance the effectiveness of artificial intelligence in developing leadership skills in the field of technical skills and activating the leadership skills of academic leaders.
- The need to develop the leadership skills of academic leaders to help them make the appropriate administrative decision and enhance all the skills of administrative faculty members.
- The need to activate artificial intelligence technology, provide the requirements and all the necessary capabilities for its application, and develop all the necessary plans and policies for that.

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