The Reality of Using Artificial Intelligence Applications in Scientific Research from the Point of View of Faculty Members at the University of Ha'il

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Abstract

The current study aimed to identify the reality of using artificial intelligence applications in scientific research from the point of view of faculty members at the University of Ha'il. The descriptive survey method was used, through a questionnaire consisting of (30) items, and the validity and reliability of the tool was confirmed. The sample consisted of (243) faculty members at the University of Ha'il who were selected by a simple random method. After collecting and processing the data. The results showed a high degree of use of artificial intelligence in scientific research, and there are no statistically significant differences due to the faculty members variables of gender, experience, and academic rank. In light of these results, the researchers recommended the use of artificial intelligence applications in scientific research without compromising the ethics of scientific research.

Keywords: *Artificial intelligence, Scientific Research, Faculty members at University of Ha'il.*

Introduction

Artificial intelligence (AI) expresses various software systems that include hardware and everything related to the interconnection between various processes, which are designed by experts for various purposes, including research, as they have specific and deep goals that are related to the goals for which they were created (HLEG, 2019). Many studies have tried to identify a concept for artificial intelligence to distinguish it from other traditional information technologies, and to understand artificial intelligence, as intelligence includes mental activities, such as thinking, learning, understanding, and solving problems, while the term "artificial" refers to something made by humans and not natural, so artificial intelligence can be understood as creating machines capable of simulating human intelligence (Mikalef and Gupta, 2021). This is consistent with Smith (2023) who defined artificial intelligence (AI) as the simulation of human intelligence in machines programmed to think and act like humans. Berente, et, al., (2021) noted that AI can also be understood as a moving frontier for computing developments that address increasingly complex decision-making problems, but Kaplan and Haenlein (2019) defined artificial intelligence (AI) as the ability of a system to interpret and learn data, and then use these applications to achieve goals and tasks.

It is also known as those computer systems that have the ability to perform tasks in a manner similar to the human mind. They are tools that recognize speech and chats and have the ability to visually perceive, make decisions, and translate texts to and from any language in the world, and their working principle is algorithms, statistical patterns, and machine learning techniques (Bankar & Lihitkar, 2023). It is also defined as a technology that has the ability to perform work and human intelligence completely in carrying out tasks, recognizing and automating information and data, solving problems, understanding language, seeing things more clearly, making decisions, and working quickly (Saiful et al., 2024). It is also defined as a set of tools and applications that are based on algorithms that do the work of humanity and carry out their actions in an intelligent manner (Belmir & Daira, 2025).

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(Mijwil, 2023) confirms that students' use of artificial intelligence in the scientific research process has become an essential tool, as artificial intelligence is characterized by what enables students to generate research ideas that help them complete their tasks easily and smoothly. Artificial intelligence also helps students quickly interpret the results resulting from data analysis and enables them to automate various tasks. Among the services provided by artificial intelligence is linguistic proofreading of research writings. It is also used to arrange and organize materials. It also enables students to create an initial draft of what has been written other than applying (Chat GPT) and (Chat BOT).

The Importance of Artificial Intelligence and Its Tools In Scientific Research:

Salvagno, et, al., (2023) have pointed out the importance of artificial intelligence tools in scientific research, because they contain techniques such as machine learning, processing and extracting information that enable student researchers to write articles and scientific research of high quality. Artificial intelligence tools also allow student researchers to review and summarize previous literature and studies and analyze citations, which improves their scientific research writing and raises its quality better. Al-Alaq (2024) emphasizes the importance of artificial intelligence tools in writing scientific research, as the importance of these tools is highlighted by enabling students to access theoretical literature and previous studies in huge numbers with a real source through research browsers such as Google. In this browser, students find thousands of research papers and websites that contain scientific research, articles, literature, and previous studies related to the topic of their research, such as the SearchOlic tool, which is a search engine that enables students to discover millions of articles, books, and scientific research that support the features of artificial intelligence.

Artificial intelligence is distinguished in scientific research in the tools it provides that help students write scientific articles. Arshan (2023) mentioned many of these tools and their purpose, such as (Connected Papers), (Research Rabbit), and (Litmaps), which are tools that enable students to obtain previous studies, arrange them, summarize them, and save them in a library that student researchers can refer to. They also enable students to visually draw research that is related to their field of specialization. "Research buddy" tool, which connects student researchers to summaries of previous studies related to the research topic. While the "Jenni tool" aims to help student researchers generate new ideas in other language and enables them to chat and ask questions to create research content. The "Perplexity" tool contributes to generating ideas in a language determined by the student researchers. The "Schobot and Katteb" tools help in formulating theoretical frameworks and previous studies, among the tools that provide inquiries and chat services are (Poe), (Ejaba), (Bing),(Chatpdf), and (Teach anything). There are tools specialized in documentation, such as "Mendeley and Zotero". On the other hand, there are translation tools such as "Quillbot, Google Translate", and "Online doc translator".

Bankar & Lihitkar (2023) mention tools that help students in scientific research that rely on artificial intelligence (Humata AI), which is an application based on artificial intelligence that allows its users to download articles as PDF files with the aim of generating data that has been deleted. This application also provides students with opportunities to ask questions related to the given document so that Humata AI describes everything related to this document in the official language. While the tool (TypeSet.jo), which is a web-based platform, is one of the most important services that student researchers use in this tool to coordinate their articles and manuscripts and make the editorial formats required to submit the research. Likewise, the Elicit tool uses several algorithms with the aim of processing language and making the search more understandable to its reader. This tool also provides customized search results from various sources; The ChatGPT tool is also considered one of the artificial intelligence tools in scientific research. It contributes to improving writing and makes it easier for students to reach the entire scientific community. It also contributes to students overcoming the language barrier, especially for non-English speaking students, through the grammar and language checks that this tool provides. It also enables student researchers to write practical research and check grammatical, spelling, and linguistic errors with ease (Castellanos-Gomez, 2023). The tool (ChatGPT) corrects vocabulary and makes it more clear, concise and useful, which improves the quality of scientific research. This tool also has the ability to formulate and create paragraphs and make it more effective, in addition to saving students effort and time in writing, which gives them the opportunity to complete a lot of research in a short time. This tool also reviews

opinions and reactions by creating a draft of the research that students write and publishing it for them to receive feedback to improve the quality of that research (AlZaabi et al., 2023).

The study (Chen, 2023) conducted in China aimed to reveal the role of (ChatGPT), which is one of the artificial intelligence tools in writing scientific research, and the extent to which it helps in writing research in the English language. To achieve the objectives of the study, the researcher wrote this article in Chinese and it was translated into English via (ChatGPT). Then this article was manually reviewed, edited again, and summarized, which was originally written in Chinese, in (6) sentences via (ChatGPT, and then translated it into English using Deep1 Translator, an artificial intelligence tool that specializes in translation.

Artificial intelligence in the field of education aims to have two main goals: technological, which is represented by students using computer devices to complete their tasks. Its scientific goal, which is to enable artificial intelligence to enable researchers to use concepts and models that help answer their questions related to the subject of their research (Bodin, 2018).

The Importance of the Study:

Artificial intelligence and its tools have become greatly intertwined in various areas of life, as it is considered one of the most important technological developments achieved by the current era, and one of those areas is the educational field. Therefore, it is necessary for institutions of higher education and scientific research to keep pace with artificial intelligence and its tools in order to develop the skills of researchers, and this is also imposed on them, because artificial intelligence has a role in improving the quality of research presented by students.

The importance of artificial intelligence tools lies in what they contribute to scientific research, such as the speed of research completion: these tools enable the analysis of large quantities of data with speed and accuracy that exceed the ability of humans, and they also help researchers identify trends and patterns that make them more efficient than traditional research methods. And identifying researchers' research trends: Artificial intelligence tools help determine research questions and trends. Accuracy in completing the research: It helps researchers scrutinize the research, scrutinize it for errors, and correct them. It also enables the researcher to draw conclusions more accurately than traditional methods. And developing new technologies: These tools help researchers analyze data in huge numbers with the aim of developing new technologies. For example, these tools can be used to define and develop research objectives (Salvagno et al., 2023). Despite what McFarland (2023) mentioned, artificial intelligence tools have become a part of researcher' daily lives. However, there is a shortage in educational institutions in possessing the ability to employ artificial intelligence and its tools that would enhance students' education and make them more able to share information through these tools. Also, the results of a study (Belmir & Dair, 2025) on a sample of university professors and doctoral students in Algeria indicated that there are positive trends towards the use of artificial intelligence tools in scientific research.

The importance of artificial intelligence tools is highlighted through the services it provides to researchers, including improving scientific results. It also enables researchers to generate research products such as predictions, decisions, and recommendations that will affect the environments with which they interact, in addition to enabling students to provide educational research and experiments that are attractive and eager for the results (Igbokwe, 2023). Andersen, et, al., (2025) pointed out the importance of artificial intelligence tools in scientific research. After conducting a survey of users of the Research Gate tool and Academia.edu, the reasons that encourage researchers to use these tools were discovered, such as saving time and increasing research efficiency. Therefore, the importance of this study emerged in identifying the reality of using artificial intelligence applications in scientific research from the point of view of the faculty members at the University of Ha'il in the Kingdom of Saudi Arabia.

Study Objectives:

The study aimed to identify the reality of using artificial intelligence applications in scientific research from the point of view of faculty members at the University of Ha'il in the Kingdom of Saudi Arabia. And

identifying the statistical significance of the differences according to the variables of faculty members: gender, experience, and academic rank.

Study Problem

The problem of the current study emerged from the researchers' observation that some faculty members have begun to move towards using popular artificial intelligence tools recently in writing their scientific research, and they rely mainly on them for most elements of the research, and previous studies have begun to discuss and study this phenomenon extensively. Both (González et al., 2022) and (Dargaa et al., 2023) study point out that despite the positives of artificial intelligence in scientific research, there are many negatives when using it in that research, such as students misusing it, which leads to the emergence of ethical issues such as plagiarism and lack of transparency in the information generated through it. It also enables students to obtain fake references that reduce the quality of their practical research. Such negatives are due to the use of artificial intelligence tools without oversight and their use without responsibility and to meet researchers' self-interests, which makes these tools controversial and criticized in various research sectors. Also, Burkhard (2022) conducted a study aimed at revealing students' perceptions of artificial intelligence tools for writing. The results of the study indicated that there is a difference in students' attitudes regarding the use of writing tools supported by artificial intelligence; For example, there are those whose idea was to question the credibility of the writing, and some of them used it without taking caution and insight, which led to plagiarism.

like that (Kammer et al., 2023) conducted a study aimed at revealing the role of artificial intelligence in writing scientific research, and identifying the pros and cons of artificial intelligence in writing these research. To achieve the objectives of the study, studies and scientific literature related to writing biomedical scientific research were reviewed using the (PubMed) tool, which is one of the artificial intelligence tools. The results of the study indicated that (PubMed) improves the quality of biomedical scientific research writing. The results of the study also showed that there are ethical concerns in using this tool in research writing, in addition to the expectation of losing jobs and publishing misleading and false scientific content. Badouh and Mitroff (2024) conducted a study in Morocco that aimed to reveal artificial intelligence tools and their uses in scientific research among university students. The results of the study showed that students' attitudes toward employing artificial intelligence tools in scientific research were positive. The results of the study showed that there are challenges facing students while using artificial intelligence tools, as most of the tools are not free. The results of a study (McKearin, 2024) at the University of Illinois in the United States of America indicated that most students' opinions were positive about the use of artificial intelligence tools in writing research, and their opinions also indicated concerns about the impact of artificial intelligence tools on scientific integrity.

Therefore, the problem of the study arises in identifying the reality of using artificial intelligence applications in scientific research from the point of view of faculty members at the University of Ha'il in the Kingdom of Saudi Arabia. Some believe that this use could harm the outcomes of scientific research in terms of presenting theoretical literature as it should, the amount of plagiarism, scientific theft, etc. It may also lead to weak scientific research skills among researchers, or the research may lose its scientific value because it is limited to collecting and organizing information without any benefits to the researcher himself. The problem of the study is summarized in answering the following questions.

Study Questions:

The first question: What is the reality of using artificial intelligence applications in scientific research from the point of view of faculty members?

The second question: Are there statistically significant differences at the significance level ($\alpha \leq 0.05$) in the reality of using artificial intelligence applications in scientific research from the point of view of faculty members according to variables (gender, experience, and academic rank)?

Study Hypotheses:

First Hypothesis (H01): "There is no statistically significant high score at the level of (α ≤ 0.05) for the reality of using artificial intelligence applications in scientific research from the point of view of faculty members".

Second Hypothesis (H02): "There are no statistically significant differences at the significance level (α ≤ 0.05) in the reality of using artificial intelligence applications in scientific research from the point of view of faculty members according to variables gender, experience, and academic rank".

Study Limitations:

Spatial limitations: This study was conducted at the University of Ha'il - Kingdom of Saudi Arabia.

Human limitations: The study was conducted on university faculty members.

Time limits: The study was conducted in the first semester of the 2024-2025 academic year.

Objective limits: The results of the study are determined in light of the characteristics of the study tool in terms of validity and reliability, the extent of the credibility of the answers from the study participants, and their demographic and academic characteristics.

The Methodology:

This part of the research includes the study methodology that was used to achieve the goals and objectives of the study, and also includes a description of each of the study population and the study sample and the method that was used by the researcher to withdraw the sample from the population, in addition to describing the demographic characteristic of the study sample members, and the sources of data collection and examining the internal consistency of the study tool, and the statistical method used in this study.

Study Methodology

This study is based on the descriptive analytical method, to achieve the objectives of this study to identify the reality of using artificial intelligence applications in scientific research from the point of view of faculty member. The data was collected by reviewing the theoretical literature and previous studies related to the subject of the study. The quantitative survey questionnaire was used to obtain data from the sample of the study sample.

This method is based on scientific, accurate and integrated method description of the existing situation or problem using a descriptive analysis. It is also based on the facts associated with it and unlimited to describing the phenomenon. It includes analyzing data, measuring, and interpreting it, arriving at an accurate analysis and evaluating solutions and proposals to address them.

Study Population

The study population consists of faculty members at the University of Ha'il- Kingdom of Saudi Arabia.

Study Sample

The sample of the study was consisted of (243) faculty members at the University of Ha'il, they were randomly selected from the population of the study. The researchers attribute the reason for choosing that sample to conduct research test on them because they have the ability to deal with the basic concepts related to the variables of the study.

Academic and Demographic Characteristics of the Study Sample

The following is a description of the characteristics of the study sample according to the gender, expert, and academic rank variables, as shown in the following tables.

Table (1) The Distribution of the Study Sample According to the Gender Variable (N=243)

Category	Frequency	Percentage
Male	100	41.2
Female	143	58.8
Total	**243**	**100.0**

Referring to the results of the statistical analysis contained in table No. (1) related to the analysis of the characteristic of the study sample individuals according to the gender variable, the result of the analysis indicated that most of the samples are from the "female" category, as their number reached (143) and their percentage was (58.8%), but the lowest percentage was (41.2%) for "male" category, with (100) participants.

Table (2) The Distribution of the Study Sample According to the Experience Variable (N=243)

Category	Frequency	Percentage
1_5 years	26	10.7
6_10 years	123	50.6
11 and above	94	38.7
Total	**243**	**100.0**

Referring to the results of the statistical analysis contained in table No. (2) related to the analysis of the characteristic of the study sample individuals according to the experience variable, experience "6_10 years" came in the first place with a percentage of (50.6%), then "11 and above" category by frequencies (94) and (38.7%), while experience "1_5 years" came in the last place with a percentage (10.7%).

Table (3) The Distribution of the Study Sample According to the Academic Rank Variable (N=243)

Category	Frequency	Percentage
Professor	39	16
Associate professor	57	23.5
Assistant professor	81	33.3
Part time doctor	66	27.2
Total	**243**	**100.0**

Referring to the results of the statistical analysis contained in table No. (3) related to the analysis of the characteristic of the study sample individuals according to the academic rank variable, academic rank "Assistant professor" came in the first place with a percentage of (33.3%), while academic rank "professor" came in the last place with a percentage (16%).

Study Instrument:

In order to achieve the objectives of the study, answer its question and hypothesise testing, the researcher develops the study tools (questionnaire) by referring to the theoretical literature and some previous studies related to the study variables as (Boden , 2018; Bankar, & Lihitkar, 2023; Arshan, 2023; Andersen, et, al., 2025 ; Belmir, & Daira, 2025). Thus, the researcher uses two main sources to collect information, namely:

Secondary sources: the researcher used a set of secondary sources represented in books, Journals, masters and doctoral dissertations, report's issued by companies related to the subject of the study, and internet sites that deal with the subject of the study, in order to enhance the theoretical framework.

Primary sources: A special questionnaire was developed as a primary tool for collecting data from the study sample, as the study tool included a set of items that were formulated within one scale, were the Five Likert scale was used, so that each answer takes relative importance, and the study questionnaire included three main parts:

The first part: The first part of the questionnaire consists of a book addressed to the study sample, explaining the purpose of the study and thanking the study sample for their cooperation with the researcher, in addition to a promise to deal with the study data confidentially and for the purpose of scientific research.

The second part: The second part of the questionnaire described the characteristics of the study sample, such as gender, experience, and academic rank.

The third part: The third part of the questionnaire included (30) paragraphs to identify the reality of using artificial intelligence applications in scientific research from the point of view of faculty members at University of Ha'il.

The range of answers of the study sample to the paragraphs of the questionnaire ranged from (1_5) in the Five Likert scale, where the answers of the study sample were given five weights confined to (strongly agree, agree, neutral, disagree, and strongly disagree) as each answer was given a weight as it is shown in table (4).

Table (4) Likert-Type Scale

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
5	2	3	2	1

The researcher used Five Likert scale to include five degree, which reflect the degree of consent, it was also relied on to measure the level of importance of each paragraph of the questionnaire through the category length above formula, and the following classification was relied upon to judge the arithmetic average as follows: From 1- 2.33 Low agreement degree. From 2.34 to 3.66 Medium agreement degree. From 3.37 – 5 High agreement degree.

Validity and Reliability:

Face Validity

The validity of the content was confirmed by presenting the questionnaire to a group of experts in the field of scientific research and the use of artificial intelligence tools at the university of Ha'il. Their comments were collected on the suitability of the questionnaire paragraphs in terms of language and the duration of their suitability to the objectives of the study, their observations were taken into account and some paragraphs were reformulated to become clearer.

Inter-Item Correlation Test

To ensure the correlation of items with the overall score of the questionnaire, it was applied to a pilot sample consisting of (25) faculty members from the study population, and the correlation coefficients between each item and the overall score of the scale were extracted. Table (5) shows this.

Table (5) Correlation Coefficients Between Each Item and the Overall Score

Item No	Person correlation	Sig.	Item No	Person correlation	Sig.
1	.419**	0.000	16	.806**	0.000
2	.481**	0.000	17	.801**	0.000
3	.640**	0.000	18	.806**	0.000
4	.575**	0.000	19	.813**	0.000

5	.735**	0.000	20	.789**	0.000
6	.463**	0.000	21	.826**	0.000
7	.452**	0.000	22	.833**	0.000
8	.652**	0.000	23	.815**	0.000
9	.407**	0.000	24	.785**	0.000
10	.713**	0.000	25	.713**	0.000
11	.728**	0.000	26	.730**	0.000
12	.698**	0.000	27	.787**	0.000
13	.758**	0.000	28	.676**	0.000
14	.707**	0.000	29	.797**	0.000
15	.769**	0.000	30	.702**	0.000

Table (5) shows that the correlation coefficient between each item and the Overall degree of scale "reality of using artificial intelligence applications in scientific research from the point of view of faculty members", ranged between (0.407 - 0.833), all of them significant at level of Sig. ($p = \leq 0.01$), which are accepted to apply the study.

Reliability:

The reliability was measured through Cronbach's Alpha test to identify the internal consistency of the questionnaire paragraphs, the level of reliability is distributed between (0-1), the decision rule is that the questionnaire study tool is stable if the alpha value is more than (70%), and the questionnaire reliability equitation (Cronbach's Alpha) was applied to the questionnaire as whole, it's reached (0.94) which are high stability coefficient to apply study.

Statistical Treatment

To process the data collected through the questionnaire, the researchers used the Statistical Package for Social Sciences V (25) (SPSS), and the following statistical analysis method were applied; Frequency and percentage to identify the demographic distribution of the study sample. Correlation coefficients between each item and the total degree of scale. Cronbach's Alpha was calculated to identify the internal consistency of the paragraph of the questionnaire. Means and standard deviations of the study sample responses to the questionnaire paragraph, and total degree of scale. Also, One-sample t-Test was applied, to extract the power of answers about the reality of using artificial intelligence applications in scientific research from the point of view of faculty members. **(**3 Way ANOVA) was applied to explore the difference for the reality of using artificial intelligence applications in scientific research due to gender, experience, and academic rank variables.

The Results and Discussion:

This part of the research deals with the practical aspect of this study, as it contains an analysis of the study sample's responses to all paragraphs of the questionnaire in order to identify the reality of using artificial intelligence applications in scientific research from the point of view of faculty members, and in this part the question of the study will be answered in order to achieve the goals and objectives of this study, also study hypotheses will be testing.

Results and discussion for the first question: What is the reality of using artificial intelligence applications in scientific research from the point of view of faculty members?

To answer this question, means and standard deviations were extracted for the items of the scale, table No. (6) below show this.

Table (6) Descriptive Analysis for the Scale Items (N=243)

No.	Item	Mean	St.dev	degree	Rank
1	AI equips me with innovative research ideas.	4.14	0.47	High	1
2	AI applications provide me with references that relate to my research topic.	4.10	0.54	High	4
3	AI applications help me as I write theoretical literature on my subject of study.	3.89	0.65	High	12
4	AI applications help me document and proofread the list of references.	4.02	0.62	High	6
5	Artificial intelligence applications help in obtaining previous studies and writing their summaries.	3.85	0.76	High	15
6	AI applications help translate previous studies.	4.11	0.51	High	3
7	I inquire about what I need in my studies based on the robots available in artificial intelligence.	4.13	0.56	High	2
8	I use AI applications to analyze articles and identify what restricts me.	3.98	0.67	High	7
9	AI helps me develop my research skills.	4.09	0.56	High	5
10	I examine the citation ratio of the study through AI applications.	3.81	0.69	High	18
11	I use artificial intelligence applications to reach the research gap that guides me to formulate study hypotheses	3.96	0.81	High	9
12	AI applications help me proofread my studies.	3.89	0.77	High	13
13	I use artificial intelligence applications to sort and organize high-quality references related to my studies.	3.92	0.75	High	10
14	Get studies published in all languages with AI applications.	3.98	0.73	High	8
15	Employ artificial intelligence applications in tracking references to previous studies that have been used, and citations to reach their original sources.	3.73	0.73	High	26
16	I develop critical thinking skills using AI applications.	3.80	0.97	High	19
17	AI applications help me paraphrase some text to serve my research topic.	3.75	0.98	High	23
18	I use artificial intelligence applications in designing study tools and distributing them electronically to the target sample.	3.69	0.95	High	27
19	Employ artificial intelligence applications to organize and classify the data collected for research purposes.	3.66	0.97	Medium	28
20	Using artificial intelligence applications to examine the reliability of information available in previous studies.	3.74	1.02	High	25
21	AI applications help me transcribe interview information, videos, and sounds into written texts.	3.82	0.87	High	17
22	I use AI applications to connect ideas with logical evidence.	3.78	0.87	High	21
23	AI applications enable me to verify sources of information in published research on the topic studied.	3.79	0.85	High	20
24	The use of artificial intelligence applications accelerates the completion of all research tasks and elements.	3.75	0.77	High	24
25	AI applications help me avoid the topics studied and saturated in previous studies.	3.60	0.81	Medium	30
26	Artificial intelligence applications open new horizons in scientific research and development	3.92	0.88	High	11
27	AI applications take me to the results of international and modern research on the topic studied.	3.86	0.91	High	14

28	AI applications help me identify the right journals to publish my research results.	3.78	0.85	High	22
29	I use artificial intelligence to analyze the collected study data.	3.65	0.94	Medium	29
30	AI applications help me summarize and interpret results.	3.84	0.74	High	16
	Mean Overall	**3.87**	**0.55**	**High**	

Table No. (6) shows that the highest means reached (4.14) out of for item No. (1) "AI equips me with innovative research ideas" by high agreement degree, then item No. (7): "I inquire about what I need in my studies based on the robots available in artificial intelligence." by means (4.13) high agreement degree, then item No. (6): "AI applications help translate previous studies" by means (4.11) high agreement degree, but the lowest means was (3.60) for item No. (25) "AI applications help me avoid the topics studied and saturated in previous studies" by medium agreement degree, and means reached (3.87) for overall scale by high agreement degree; "reality of using artificial intelligence applications in scientific research from the point of view of faculty members". Therefore, it can be said that faculty members at the University of Ha'il use artificial intelligence applications to a high degree in scientific research processes, especially organizing, translating and editing the results of published studies for use in their scientific research, as these applications help in accelerating these processes and writing theoretical literature related to the subject of their research.

These results are consistent with the study Al-Alaq (2024) emphasizes the importance of artificial intelligence tools in writing scientific research, as the importance of these tools is highlighted by enabling students to access theoretical literature and previous studies in huge numbers with a real source. Majwell (2023), and Andersen, et, al., (2025) pointed out the importance of artificial intelligence tools in scientific research which confirms that students' use of artificial intelligence in the scientific research process has become an essential tool. Also, Chen (2023) study conducted in China aimed to reveal the role of (ChatGPT), which is one of the artificial intelligence tools in writing scientific research.

Results and discussion for the second question: Are there statistically significant differences at the significance level (α ≤ 0.05) in the reality of using artificial intelligence applications in scientific research from the point of view of faculty members according to variables (gender, experience, and academic rank)?

To answer this question, means and standard deviations were extracted for reality of using artificial intelligence applications in scientific research from the point of view of faculty members according to variables: gender, experience, and academic rank, table No. (7) below show this.

Table (7) Means and Standard Deviations Due To Gender, Experience, And Academic Rank Variables (N=243)

Variable	Category	N	Mean	Standard deviation
Gender	Male	100	3.89	0.48
	Female	143	3.85	0.59
Experience	1_5 years	26	3.74	0.77
	6_10 years	123	3.83	0.59
	11 and above	94	3.96	0.39
Academic rank	Professor	39	3.95	0.52
	Associate professor	57	3.94	0.43
	Assistant professor	81	3.74	0.63
	Part time doctor	66	3.88	0.56
Mean Overall		243	**3.87**	**0.55**

Table No. (7) shows means and standard deviations for the reality of using artificial intelligence applications in scientific research from the point of view of faculty members due to (gender, experience, and academic rank), and to detect significant differences, the analysis of variance (3 Way ANOVA) was applied, table No. (8) shows that.

Table (8) The Result Of (3 Way ANOVA) To Explore the Difference Due To (Gender, Experience, And Academic Rank) (N=243)

Source	Sum of square	df	Standard	F. value	Sig
Gender	.060	1	.060	.204	.652
Experience	1.354	2	.677	2.289	.104
Academic rank	1.608	3	.536	1.813	.146
Error	69.791	236	.296		
Corrected total	72.952	242			

Table No. (8) shows that there are no statistical significant differences at the significance level ($\alpha \leq 0.05$) in the reality of using artificial intelligence applications in scientific research from the point of view of faculty members due to gender, F value was (.204) by sig (.652); due to experience, F value was (2.289) by sig (.104); and due to academic rank, F value was (1.813) by sig (.146).

This is due to the fact that faculty members, regardless of their gender and academic variables, agree that their use of artificial intelligence applications in scientific research is high; this explains the effectiveness of these applications in helping researchers complete their research in easier ways and with acceptable technology. They also clearly acknowledge, through answering the questionnaire paragraphs, that they use these technologies to access useful previous studies and accomplish some research tasks in an appropriate manner.

These results are consistent with the results of the study of Salvagno, et, al., (2023) pointed out the importance of artificial intelligence tools in scientific research, as they contain techniques such as machine learning, processing and extracting information that enable student researchers to write high-quality scientific articles and research.

Hypotheses Testing

Results and discussion for the first hypothesis:

(H01): "There is no statistically significant high score at the level of ($\alpha \leq 0.05$) for the reality of using artificial intelligence applications in scientific research from the point of view of faculty members".

Due to testing this hypothesis, One-sample t-Test was applied, to detect the reality of using artificial intelligence applications in scientific research from the point of view of faculty members, and table No (9) below show this.

Table (9) The Results Of (One-Sample T-Test) To Detect the Reality of Using Artificial Intelligence Applications in Scientific Research (N = 243)

Scale	Mean	Standard Deviation	t. value	df	Sig.	Result of Hypothesis
reality of using artificial intelligence applications in scientific	3.87	0.55	24.649	242	.000	Rejected

Table No. (9) shows that there is a statistically significant high positive score at the level of ($\alpha \leq 0.05$) for the reality of using artificial intelligence applications in scientific research from the point of view of faculty members, where the value of t. was (24.649), by Sig. (0.000). This indicates a high and positive degree of use of artificial intelligence applications in various elements of scientific research by faculty members at the University of Hail, therefore (H01) was rejected. The reason for this is due to the effectiveness of the various artificial intelligence programs in quickly completing research tasks, inventorying relevant previous studies, and producing the research in a final form that is compatible with the researcher's goals. These

results are consistent with the results of the study of Igbokwe (2023) pointed out the importance of artificial intelligence tools is highlighted through the services it provides to researchers, including improving scientific results. And The results of the study Badouh and Mitroff (2024) and McKearin (2024) that aimed to reveal artificial intelligence tools and their uses in scientific research among university students, showed that students' attitudes toward employing artificial intelligence tools in scientific research were positive.

As well as, the results of a study (Belmir & Dair, 2025) on a sample of university professors and doctoral students in Algeria indicated that there are positive trends towards the use of artificial intelligence tools in scientific research.

Results and discussion for testing the second hypothesis:

(H02): "There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) in the reality of using artificial intelligence applications in scientific research from the point of view of faculty members according to variables: gender, experience, and academic rank".

Table No. (8) shows that there are no statistical significant differences at the significance level ($\alpha \leq 0.05$) in the reality of using artificial intelligence applications in scientific research from the point of view of faculty members due to gender, experience, and due to academic rank. Therefor (H02) was accepted.

This means that all participants in the study, who are faculty members at the University of Hail, use artificial intelligence applications, and there are no statistical significant differences between them depending on their variables related to gender, experience, or academic rank. It should be noted that, through answering the questionnaire items, the results showed that this use is focused on published studies, translation, and some coordination, directing, and editing processes for their scientific research.

Conclusion

This study shed light on a recent and innovative topic in the field of technology, which is the use of artificial intelligence applications in completing elements of scientific research among faculty members at the University of Ha'il, as in recent times the use of artificial intelligence applications has become widespread in the field of published studies and research production and editing.

The results of this study showed a high degree of use of this technology, rejecting the first null hypothesis (H01) related to the study, and accepting the alternative hypothesis, so that there is a high statistically significant degree at the level of ($\alpha \leq 0.05$) for use of artificial intelligence applications in scientific research. The second hypothesis (H02) of the study was accepted, which indicates that there are no statistical differences at the level of ($\alpha \leq 0.05$) in the degree of use of artificial intelligence applications in scientific research due to the variables of faculty members at the University of Ha'il; gender, experience, and academic rank.

Finally, it can be said that the use of artificial intelligence applications will increase in the future in the field of scientific research, but do researchers take into account the ethics of scientific research, undocumented quotes from their original sources, and scientific integrity? These questions and many more are open for future study.

Recommendations:

Based on the results obtained, the researchers recommend the following:

- Be careful and honest in using artificial intelligence applications in scientific research, especially in the process of transferring information from non-original secondary sources, because artificial intelligence does not clearly distinguish between them.

- Taking into account the ethics of scientific research in transferring information and using it in scientific research, and using artificial intelligence applications with caution so as not to become victims of plagiarism and scientific theft, which may spread widely as a result of uncontrolled use by others around the world.

- Investing in artificial intelligence applications in classifying previous high-quality studies, translating important texts into multiple languages, and organizing and inventorying the references that were used in their research to avoid making mistakes during documentation.

- Conduct future studies on the extent of the spread of scientific theft, and the extent to which scientific research ethics are violated in research that relies heavily on artificial intelligence, to warn researchers about it and adhere to what is beneficial to their research operations.

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