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ANALYSIS OF THE ATTITUDES OF BUSINESS STUDENTS AT IMAM MUHAMMAD IBN SAUD UNIVERSITY TOWARDS THE USE OF ARTIFICIAL INTELLIGENCE TOOLS FOR ACADEMIC PURPOSES: AN APPLIED STUDY

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Abstract: This study aimed to determine how business college students at Imam Muhammad University feel about using artificial intelligence tools. The study sample consisted of 325 male and female students. Due to the breadth of the study community and the diversity of specializations, a stratified random sample of male and female business college students was selected to represent the various academic departments in a balanced manner, taking into account diversity in gender (male, female), specialization, academic level, cumulative GPA, level of familiarity with technical skills, and awareness of ethical controls, in addition to challenges and obstacles. The study's objectives required the preparation of an attitude scale that consisted of (16) paragraphs. After verifying the validity and reliability of the scale, it was distributed electronically to the study sample. The results of the study showed that the attitudes of male and female students at the College of Business at Imam University College of Business were high. According to the findings, there were statistically significant differences in attitudes towards the use of artificial intelligence tools among academic specialization, gender, educational level, and cumulative average.

The results also showed a strong and statistically significant positive relationship between the possession of technical skills and the tendency towards using artificial intelligence tools, as well as a positive and statistically significant relationship between students' awareness of ethical controls and the tendency towards using artificial intelligence tools. The study concluded with recommendations, and the most significant ones are:

The necessity of training students and faculty members in the College of Business on the use of artificial intelligence tools in the educational process to prepare specialists in the field, with the possibility of working on developing their skills in how to use these tools.

Keywords: Student attitudes, artificial intelligence, academic purposes

1- INTRODUCTION:

The rapid development of technology is attracting global attention as one of the most significant challenges. The most prominent of these challenges is the question of understanding the nature of the relationship between humans and machine intelligence, known as artificial intelligence (AI). Artificial intelligence encompasses all technologies that mimic the capabilities of human intelligence, particularly about its ability to reason and learn independently. The use of AI applications will increase in all fields, particularly education, because of the repercussions of the Fourth Industrial Revolution across all societies.

Technology has been incorporated into daily life in various sectors, such as education, economics, and health (Jamalian et al., 2023). Various technologies, such as artificial intelligence (AI), have pervaded various aspects of life, ultimately leading to the Fourth Industrial Revolution (Genc, 2023). Recent studies have shown that technological tools, such as learning-based notification technologies and AI tools, facilitate life activities (U chare, 2023). AI can be described as technologies developed to assist human-computer interaction (Singh et al., 2019). AI is a set of technologies that enable users to communicate through virtual assistants that utilize computer algorithms to simulate human intelligence, enabling human-computer interaction (Yang et al., 2021).

Studying the attitudes of university students towards artificial intelligence (AI) has become necessary due to its widespread use and adoption. These attitudes have been shown to influence individuals' acceptance and adoption of new tools. In addition to their pervasiveness throughout society, the overall impact of AI on our reality is undeniable. It is crucial to understand our attitudes toward AI, as these attitudes play a vital role in shaping its development, implementation, and general acceptance, and have a direct impact on the success and integration of innovative solutions that leverage the power of AI (Schepman et al., 2020). Artificial intelligence is rapidly improving and is increasingly being used in various fields, especially chatbots, which are tools trained to conduct human-like conversations (Amisha et al, 2019). Chatbots have great potential in scientific research, and could automate data analysis, literature searches, and article writing, increasing productivity. These advantages come

with a set of challenges that must be overcome, such as accuracy issues and ethical concerns. There are ongoing discussions about authorship and guidelines for using chatbots in scientific publishing (Alsaad et al, 2022).

Integrated modern technologies and practices are being used in higher education in Saudi Arabia to improve overall educational outcomes in a cost-effective and scalable manner. Learning management systems, gamification, and virtual reality are examples of modern educational technologies that have impacted educational planning and implementation (Mhlanga, 2023). Chatbots (Qadr, 2023) are among the most recent digital tools.

Digital tools have been proven to be able to address many contemporary challenges in higher education, transform training and learning, and provide education to growing populations worldwide (Jeyarani, 2022).

Modern AI technology can be employed for enhancing educational experience. These are finding trends and patterns in educational data, such as the best models in learning-teaching process, student behavior's analysis, personalization recommendations for every single student. AI can also help build educational programs and other interactive educational games that can be used to motivate learning as well as improve that latter. Also, AI can analyze school achievement by assessing language, mathematical and social cognition skills (Reis, 2017). Leveraging AI technologies for modern education is setting the stage for a future of higher quality and unique educational experience. These technologies can be used in different contexts in education like schools, universities and distance education (Cifdan, 2019).

College students have different attitudes toward the acceptance of AI for education. Owing to the newness of this theme, students involved in his study did not possess adequate knowledge about AI tools (Uzbasioglu,2020). However, they were willing to be inducted into this area. For education, AI brings new possibilities and challenges in many aspects including returning to the classroom face-to-face, redefining teachers' identity and changing students' learning activity (Baker et al., 2019). Education has been affected by the changes brought by the COVID19 pandemic, where traditional teaching methods changed to online or mixed learning and traditional education turned technology dominated and its features (Flynn, 2021).

There are also many advantages to using AI tools; it will engage students in the educational process, increase student learning experience (OLE) Adding multimedia to students and make learning interactive. These applications and programs enhance student learning outcomes by offering a variety of knowledge resources, which allows students to not only enrich the contents but also to develop their intellectual and language abilities. These tools and programs also enhance the quality of feedback and raise the effectiveness of evaluating students due to their ability to provide students with both descriptive and quantitative analysis regarding answers given in tests or assignments; that allows a professor know every student's weaknesses and strength in the course (Alkahtani, 2024).

Despite the important role of business colleges in Saudi universities as a fertile environment for activating the use of artificial intelligence tools, there are many challenges related to their implementation, such as financial and infrastructure challenges, in addition to the lack of curricula related to the use of artificial intelligence tools (E Alhwaya 2024).

Study problem:

In recent years, higher education institutions in the Kingdom of Saudi Arabia have witnessed a remarkable development in the use of artificial intelligence tools, especially in the academic environment, which has increasingly relied on these tools for academic tasks, research preparation, and data analysis. ChatGPT technology has also represented an effective breakthrough and added value in the world of information, given its effective contributions to the educational process and its positive results in serving and developing education and enhancing learning environments, on the one hand. Universities have been facing an unheard-of challenge from an academic perspective due to their superior ability to write content that can be utilized by students. Moore et al. (2022) asserted that ChatGPT and other chatbots will change the way education and research are done in universities due to their diverse and multiple capabilities.

Based on the pros and cons of this technology, and considering it as a technology that constitutes opportunities for some and a challenge for others, many studies (Hill - yardin et al, 2023).(Lund et al, 2023) recommended the necessity of enhancing awareness and education about the concepts and applications of artificial intelligence technology, and directing students' behaviors and attitudes towards using it objectively in the educational process, to reduce the academic burden and provide immediate assistance to students and provide scientific advice objectively.

Despite the rapid growth of AI technologies, there is still a gap in understanding among undergraduate students at the College of Business at Imam University regarding the use of AI tools for academic purposes. These attitudes may range from acceptance to rejection, or from effective to limited use, and are influenced by multiple factors such as technical background, intrinsic motivation, students' awareness of ethical guidelines, and available institutional support.

Accordingly, the research problem lies in the lack of clarity regarding the nature of the attitudes of College of Business students at Imam University toward the use of AI tools for academic purposes, the extent to which they employ these tools, and the challenges they face in this context. This requires an in-depth applied study to determine the reality of use and analyze the factors influencing these attitudes. The recommendations will help to guide academic practices and develop educational policies considering digital transformation.

The main question of the problem:
What are the attitudes of undergraduate students at the College of Business at Imam Muhammad ibn Saud University toward using artificial intelligence tools for academic purposes?
This leads to several sub-questions, such as:
-To what extent do undergraduate business administration students use artificial intelligence tools in their academic assignments?
-What are their main motivations and obstacles to adopting these tools?
- Do attitudes differ based on major, technical background, or academic grade point average**?**
- Study objectives:
This research aims to analyze the attitudes of undergraduate business students toward the use of artificial intelligence tools for academic purposes, through:
- Analyze the level of use of AI tools by undergraduate students in their academic assignments
- Analyze students' attitudes (positive or negative) toward adopting these tools in academic study and research.
-Identify the factors influencing student attitudes toward AI tools (such as technical skills, motivation, and institutional support).
-Explore the most prominent challenges and obstacles students face when using these tools.
-Provide practical strategies for promoting the use of AI tools in university education that are both effective and ethical.
- The importance of studying:
. Theoretical importance:
- The literature on student attitudes towards modern technologies, particularly artificial intelligence in education is enriched by it.
-An analytical model has been developed that can be utilized for similar research at other colleges or at different academic levels.
1. Practical importance:
-Decision-makers and faculty members can design appropriate training or guidance programs by understanding student behaviors towards these tools, thanks to the study's results.
-It allows the university to develop educational policies that support the effective use of artificial intelligence, enhancing the quality of the educational process.
-The integration of artificial intelligence tools into the business school curriculum is enhanced by practical indicators provided.

2-THEORETICAL FRAMEWORK:

2-1. The concept of artificial intelligence:

The aim of such a science is to investigate theories, methods and tools for simulating, enhancing and optimizing human intelligence. This science has as its ultimate goal to develop systems that can imitate and replicate the functions of a human brain in a computer. Learn resources and comprehensive, multidimensional learn system (Lufeng, 2018) are also related to Artificial intelligence. Computer programs can solve human challenging problems (Verma, 2018).

2.2. Definition of artificial intelligence:

It is a science that includes algorithms, applications, and hypotheses that are concerned with automating and programming decisions and actions, producing, storing, and interpreting knowledge with high accuracy and speed, investing it in solving problems, and making inferences similar to methods attributed to intelligence, such as learning, adaptation, synthesis, self-correction, and self-translation, translation, analysis, and the use of data for complex processing tasks (Helm team 2020).
- The field involves making computers perform functions that are similar and approximative to human intelligence processes, such as learning, deduction, and decision-making (Ward et al., 2024).
- Barot and Sutton define it as a name given to problems that are difficult to solve using a computer (Barot et al. 1983).
- It has also been defined as how to direct a computer to perform things that humans do in a better way (Popinis et al, 2017). It also refers to the way in which human intelligence capabilities are simulated. It is a part of computer science that deals with the process of designing intelligent systems that exhibit a set of characteristics that are linked to intelligence related to many human behaviors (Badaro et al, 2013).

2.3. Objectives of artificial intelligence and its importance in higher education:Artificial intelligence seeks to achieve a set of goals, including:

-Artificial intelligence applications work to update lessons and develop educational curricula automatically in line with the information explosion and cognitive development and in a manner that is consistent with the needs and abilities of students (Salas et al. 2022).
- Artificial intelligence applications provide the necessary support for the student outside the classroom and help in identifying the student's abilities, determining his strengths and weaknesses, and knowing his educational level. Therefore, the scientific and practical educational material is designed in a way that suits the student's capabilities,

regardless of his financial capabilities, geographical location, or mental abilities, and providing the best educational methods that are in line with his skills (Crompton et al., 2023).
- Preparing scientific research, academic reports, and solving school assignments is made more effective and efficient by using artificial intelligence applications that consider scientific methodology with precision, efficiency, and effectiveness (Zawacki-Richter et al., 2019).
- Instant translations and a virtual mentor who continuously monitors students' progress and provides necessary feedback and instructions are provided by artificial intelligence applications (Li et al, 2023).
- Artificial intelligence applications provide a clear picture of the topics and lessons to be presented and work to provide training and educational courses from different countries, which facilitates education for all students and contributes to addressing their knowledge gaps.

2.4. Artificial intelligence tools:

The development of the educational process can be aided by artificial intelligence applications
Artificial intelligence has a major role in many fields, the most important of which is the modern educational process. It represents an urgent necessity whose applications cannot be dispensed with, which contribute to continuous assessment, as it provides them with the ability to continuously monitor students. It is also used to increase learners' interaction with academic content and is also used to conduct new educational experiences through a virtual environment. It also benefits students from taking advantage of lessons available online, and helps in treating students with learning difficulties, as they have content that suits their abilities and capabilities. In addition, it is utilized in assessing students and employing a teaching method for each student individually (Chassignol et al, 2018).

2.5. Ethics of Artificial Intelligence in Higher Education:

AI ethics in higher education refers to a set of standards adopted by international AI associations that define the ethics to be followed in higher education. These standards are ethical principles and considerations that protect human rights and values, reduce harm and maximize benefits, reduce bias and promote fairness and transparency, and protect the privacy of data for all parties involved in the educational process. We come across (Floridi et al., 2018) among these.
-Protecting the privacy of student data and using it in accordance with laws and regulations.
-Ensuring academic integrity and accessibility of web content for all students, including those with disabilities.
-Challenges and obstacles to using artificial intelligence tools in the educational process
-Promoting responsible use and informing students and faculty about plagiarism and copyright issues.
Despite the multiple uses of AI tools in the educational process, there are many challenges that hinder students from benefiting from these tools. The most prominent of these challenges are the lack of academic support and training courses that focus on integrating AI technologies into education, as well as the effective way to use these applications. Also of concern is the potential impact of these tools on privacy, intellectual property rights, copyright, and related legal issues. In some cases, appropriately posed questions may lead to incorrect answers, or the generated answers may not be handled optimally. The accuracy and creativity of texts generated by these tools may not be as strong as those generated by human authorship.
According to (Rasul et al, 2023), the use of AI tools in education may lead to the loss of direct interaction between students and professors in the educational environment, creating a knowledge gap between students depending on their ability to use this tool. There are also ethical concerns related to copyright and plagiarism. One of the most prominent challenges is also maintaining academic integrity, such as combating cheating and plagiarism. It is important for higher education institutions to train students on the optimal use of AI tools, while also enhancing critical thinking and scientific writing skills, while maintaining academic and ethical values.
A study (Cran Ford et al., 2023) indicated that the lack of a clear vision regarding the future of education using artificial intelligence technologies and the fear of changing the methods of assessing and teaching students are among the main obstacles to using artificial intelligence tools in education.

2-6. Trends towards the use of artificial intelligence technology:

Despite ChatGPT's many contributions to education and scientific research, it cannot be considered a substitute for researchers. It cannot replace the expertise of human researchers, which has sparked controversy over copyright (Kohli, 2023). Therefore, the technology's ability to enable creative writing poses a challenge in the educational process and raises ethical concerns in scientific research and writing, as it reduces the originality of written works such as stories, novels, reports, scientific research, and other written works whose quality is equivalent to human skill (Shidig, 2023). ChatGPT's availability in late November 2022 led to strong reactions and trends, both opposing and supporting, due to its tremendous capabilities.

3.Concept of direction:

A state of neurological and psychological readiness or preparedness, regulated by a person's experience, exerts a guiding or dynamic influence on the individual's response to all topics and situations that elicit this response (Bahar et al., 2018). Shrigley tried to create a comprehensive framework that explains the meaning of attitudes, relying on the history of attitudes, psychology, and learning theories. He concluded from this with a set of basic characteristics of attitudes, including that attitudes are learned, include a cognitive aspect, and predict behavior (Shrigley, 1983). Ajzen et al., 2000, add that attitudes refer to a preference for outcomes or results related to a particular topic after evaluating it and taking a positive, neutral, or negative stance toward it.

3.1. Definition of trend:

Attitudes are a tendency that enables an individual to react to specific behavioral patterns or towards certain people, ideas, incidents, situations, or things.

The word attitude derives its meaning from the Italian word Attitudind, which is derived from the Latin word meaning mental and nervous readiness. It is defined as an acquired psychological tendency or readiness characterized by relative stability, which directs the individual's path toward all topics or situations related to it. The person behaves in a certain way when they are in a stable state of mental organization (Adi, 2020).

- Usage attitudes: They indicate the degree to which the individual evaluates or links the target system to its function. Future behavior or intentions that ultimately lead to specific behaviors can be attributed to usage attitudes (Ajzen et al., 2000).

3.2. Trend components:

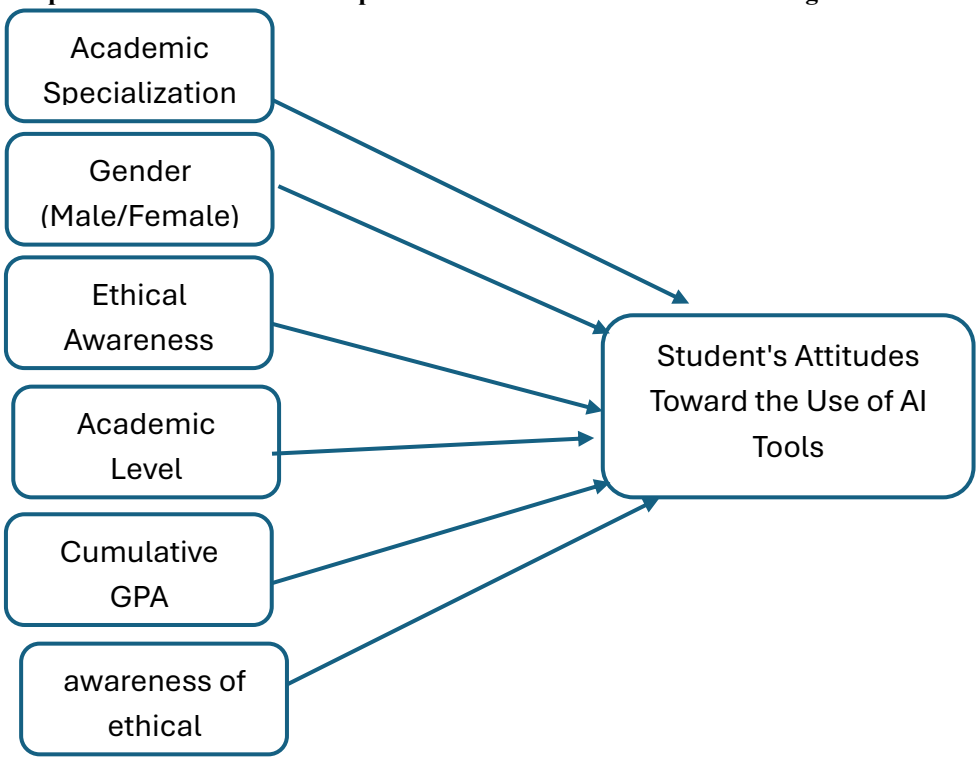
According to Al-Sayyid (2001), the trend is made up of three main components:

-The cognitive component encompasses all experiences, information, knowledge, and beliefs related to attitude that are transmitted to the individual through educational and socialization institutions. This component appears in the individual's statements.

-The affective component: This refers to the emotional response that accompanies the individual's attitude, which may be positive or negative.

The behavioral component can be found in the individual's disposition or the type of behavior they perform or plan to perform towards a particular subject.

3.3. Conceptual Model In light of the problem and questions of the study, a research model was developed that explains the direct relationships between the variables as shown in Figure.1. below.



Considering the research model, the research hypotheses were formulated as follows:

Main hypothesis:

There is a statistically significant relationship between undergraduate business students' attitudes toward using AI tools and their level of use for academic purposes.

Sub-hypotheses:

F1. There are statistically significant differences in students' attitudes towards using artificial intelligence tools attributable to academic specialization.

F2. There are statistically significant differences in students' attitudes towards using artificial intelligence tools attributed to the gender variable.

F3. There are statistically significant differences in students' attitudes attributed to the academic level.

F4- There is a statistically significant relationship between the possession of technical skills and students' attitudes towards using artificial intelligence tools.

F5. There is a statistically significant relationship between students' awareness of ethical controls and their attitudes toward using artificial intelligence tools.

F6. There are statistically significant differences in students' use of artificial intelligence tools attributed to cumulative GPA.

4.METHODOLOGY:

The study is descriptive- analytic, since cor-relational section and like to way for trends, behavior and the relationship between the variables under natural (class) conditions. To address this gap, the aim of the investigation that we propose in this approach is to analyze how students of a business school actually utilize artificial intelligence and machine learning (AI/ML) tools, what their attitudes and motivations as well as barriers toward such use, analyzing statistically significant variations between different groups of students. The data of the research was evaluated by statistical methods appropriate for the variables and aims of the study. This was achieved using robust statistical software AMOS (an advanced equipment of SEM). In the initial phase of analysis, descriptive statistics i.e., means, standard deviations, and frequencies with percentages were used to describe the profile of sample as well as checking attitudes of participants on–study variables.

In the second stage, path analysis (testing structural equation modelling; SEM) was applied for verifying the hypothetic models of study and exploring associations among latent variables. The construct validity of the study constructs was examined using CFA (confirmative factor analysis) test, comprising the goodness of fit model tests Chi Square, and the values for CFI (A comparative fit index), TLI(Tucker Lewis Index), RMSEA(root mean square error approximation). Thus, models of multi-group analysis were used outside the AMOS to determine associations between variables according to sex or level of education using tests for significance between means. The integration of statistical methods is needed in order to uphold the trustworthiness of interpretation and that findings are grounded, also aligned to typical methodological norms for more advanced quantitative studies.

5.RESULTS OF FIELD STUDY ANALYSIS:

The objective of this step is to report, analyse and interpret the outcomes of field work data collected, analysed and interpreted within the context of the study implementing process and core hypotheses. The study carried out with 2 programs: SPSS and AMOS to increase the variety of all statistical methods used, commensurate with data nature and researched variable. The results of the analysis were organized by two major parts: The first one refers to the descriptive statistics in relation to sample characteristics and study axes, and second part includes structural modeling and hypothesis testing by examining correlations between latent variables, while differences regarding various sample groups are analysed.

5.1. Study tools:

The data collection vehicle was an online survey. Its object was to gauge three principal diameters:
student demographic and technical characteristics as academic specialisation, gender, academic year of study, cumulative GPA technical skill level, and familiarity with code of ethics Issues and Challenges. Content validity was established by submitting the questionnaire to a panel of experts (7 in management, 5 in educational technology). Internal consistency was calculated using Cronbach's Alpha to assess internal consistency between its items. The questionnaires were shared online using the university learning site (Blackboard) and official communication media, highlighting data confidentiality and it being used for academic purposes only.

5.2. Study community and sample:

The study population consists of all undergraduate students at the College of Business at Imam Muhammad ibn Saud Islamic University across its various academic departments, including business administration and its tracks, economics, accounting, finance and its tracks, marketing, insurance, and risk management, during the 2025/2026 academic year. This population is among the academic groups witnessing increasing interaction with artificial intelligence tools in the areas of research, analysis, reporting, and presentations, making it an appropriate environment for studying trends in the academic use of these tools.

The College of Business was chosen as the study community due to its unique academic nature, which combines analytical, managerial, and technical skills. This allows its students to have greater exposure and interaction with AI tools for academic purposes. Examining differences in attitudes, motivations, and technical and ethical constraints among various categories of students is possible due to the diversity of their specializations and academic levels.

Given the vastness of the study community and its diverse specializations, a stratified random sample of male and female students from the college was selected to represent the various academic departments in a balanced manner, considering diversity in gender (male/female), specialization, academic level, cumulative GPA, and level of familiarity with technical skills. The sample size was calculated for large communities by using Cochran's formula with a significance level of 0.05 and a margin of error of <unk>5%. Accordingly, the initial sample size was 384, taking into account the exclusion of some responses that were not valid for statistical analysis to ensure data quality. The following table shows the characteristics of the study sample:

Descriptive analysis of sample characteristics:

Table (1) Characteristics of the study sample individuals (demographic data)

sample's characteristics	Categories	duplication	percentage
Gender:	male	137	42.2
	female	188	57.8
Scientific Department	Business Administration	55	16.9

	Accounting Department	61	18.8
	Finance Department	67	20.6
	Insurance and Risk Management Department	73	22.5
	Department of Economics	63	19.4
	Marketing Department	6	1.8
Academic level	First year	24	7.4
	Second year	79	24.3
	Third year	120	36.9
	Fourth year	102	31.4
Cumulative GPA	under 2.5	3	0.9
	2.5 to 3.49	66	20.3
	3.5 to 4.49	131	40.3
	4.5 to 5	125	38.5
Do you possess good technical proficiency in using artificial intelligence tools?	yes	308	94.8
	NO	17	5.2
Have you ever used AI tools in academic assignments?	yes	322	99.1
	NO	3	0.9

The table showing the characteristics of the study sample demonstrated a fair diversity in demographic and academic characteristics, and this improved representativeness of the sampled from the study population. In regard to gender, 57.8% of the sample were girls and boys constituted 42.2%. This is indicative of a higher proportion of female students which could be important when discussing trends or attitudes towards the use of artificial intelligence tools. Six academic departments were drawn, and the Insurance and Risk Management Department had the largest percentage (22.5%) followed along with Finance, Economics, and accounting departments with about the same percentages. The search for a job was the lowest (1.8%) represent percentage in marketing. Regarding the academic year, most subjects were enrolled in their third (36.9%) and fourth years (31.4%), that is, predominantly progressed students which could be reflecting on their academic maturity and a greater experience with use of AI tools. With respect to cumulative GPAs, large proportions of students have high academic performance with about 40.3% scoring a GPA between 3.5 and 4.49 and 38.5% having scored between GPA between 4.5 and for which were not the case compared with less than one percent who had below GPAs2. The latter is indicative of a student population who are able to successfully use technological applications for academic gain. Twenty forces (94.8%) perceive to have better skills when using AI tools, which suggests that they are well-prepared technically. And 99.1% of the sample had previously used AI tools in academic works, such high percentage suggesting how widespread the use among students is and support ideas and opinions estimates for the distinct study areas. Based on these results, the sample is acceptable for investigating trends and practices associated with the employment of AI in academia and serves as a large repository to investigate this phenomenon in depth.

5.3. General trends towards the use of artificial intelligence tools:

Table (2) Descriptive statistical analysis of the study axes' phrases

N	phrase	arithmetic mean	standard deviation	Response level	Arrangement
Trends towards the use of artificial intelligence tools					
1	I find AI tools useful for completing academic tasks.	4.58	0.537	too high	1
2	Using AI tools in my studies is something I feel comfortable with.	4.37	0.608	too high	3
3	AI tools are frequently utilized by me in my assignments and projects.	4.40	0.702	too high	2
4	The quality of my academic work is improved by the use of artificial intelligence.	4.36	.606	too high	4
5	I'm worried about the excessive reliance on AI tools.	3.95	1.166	high	5
	Total phrases	4.32	0.232	too high	
Technical skills					
6	I possess enough technical skills to utilize AI tools in	4.33	0.699	too high	1

N	phrase	arithmetic mean	standard deviation	Response level	Arrangement
	my studies.				
7	I have the ability to quickly learn any new AI tool.	4.30	0.647	too high	3
8	AI tools can be interacted with without the need for external assistance.	4.31	0.662	too high	2
9	I am capable of integrating AI tools with the software or systems I use.	4.25	0.699	too high	4
	Total phrases	4.30	0.034	high	
					moral awareness
10	I am aware that academic controls are in place for the use of AI tools.	4.44	0.619	too high	1
11	I am eager to utilize artificial intelligence tools in a manner that does not jeopardize academic integrity.	4.38	0.634	too high	3
12	Distinguish between the legitimate and illegal applications of AI tools in education.	4.34	0.611	too high	4
13	I consider myself responsible for the outputs that AI provides when used.	4.39	0.608	too high	2
	Total phrases	4.39	0.043	too high	
					Challenges and obstacles
14	It's a challenge for me to comprehend how to utilize AI tools.	1.9108	1.06	low	
15	The college's support is insufficient to teach the use of these tools.	1.9908	1.13	low	
16	I have a fear of getting into academic trouble when using AI.	1.9908	1.10	low	
17	It's hard for me to comprehend AI output.	1.9262	0.987	low	
	Total phrases	1.95	0,422	low	

The results of the descriptive statistical analysis of the four study areas (attitudes, technical skills, ethical awareness, and challenges) revealed a clear variation in the responses of sample members, with very high responses recorded in three, compared to low responses in one axis, reflecting a variation in students' attitudes and experiences with artificial intelligence tools.

5.3.1. Trends towards the use of artificial intelligence tools:

The arithmetic mean for that axis was (4.32) and its standard deviation (0.232), indicating a very high response level. These findings indicate a positive trend among students' attitudes towards the use of artificial intelligence tools, where the highest mean item was: "I find that artificial intelligence tools help me to complete academic tasks" (4.58) and reflects students' recognition on the usefulness of this type of system in assisting them with their learning success. The statement "I am worried that we are relying too much on artificial intelligence tools," had the least content as compared within this axis (3.95). Although it is reaching a 'high' level position, this indicates concerns for the over-reliance on these tools and call for balanced usage.

5.3.2. Technical skills:

High mean (4.30) and low standard deviation (0.034) indicate the high level of homogeneity in response by samples for the technical skills axis. It suggests that students are very skillful in the use of artificial intelligence instruments. Statement "I have enough technical skills to work with tools of artificial intelligence in my studies" has taken the first place (average point = 4.33), which is indicative of students' preparedness in this area. This result is significant in that it supports the assumption of artificial intelligence potential incorporation on education environment (as long as specific professional skills are found).

5.3.3. Moral awareness:

The mean score for this axis was (4.39) with a standard deviation of (0.043), it is the highest among all axis in means, where students were found very highly ethical to the use of AI tools. This is position is projected in the highly rated items among the statements most notably: "I know that using AI tools is under Academic Control," (M=4.44). The results reveal students are not only aware of academic integrity expectations and value responsible le UEE, a positive position that supports the ethical use of AI in he.

5.3.4. Challenges and obstacles:

On the Challenges and difficulties axis there was a decrease of students' perception of having strong barriers towards use AI tools with mean equalling 1.95 and standard deviation totting up (0.422). At the bottom of the list was: "I find hard to understand how to use AI tools" (mean = 1.91). These findings suggest that students do not face substantial barriers in using such tools, which may make it easier for AI to be assimilated into education practice. Results suggest that students have highly positive attitude to using AI tools, good technical skills and

high ethical awareness without a significant barrier. Taken together, these signs speak of a relatively coming education climate for the adoption of AI tools.

5.4. Study Hypotheses' test:

The quality of the measurement tools used in the study was checked through confirmatory factor analysis (CFA) before analyzing the model and testing the research hypotheses. This analysis aims to ensure that the indicators (elements or items) accurately reflect the intended theoretical concepts. This verification is crucial to ensure that the collected data truly expresses the latent variables targeted in the proposed theoretical model. Confirmatory factor analysis and reliability testing were used to test the quality of measurement for the study axes, and the following results are presented.

5.4.1. Confirmatory factor analysis:

The following are model fit indices to measure the extent to which theoretical model matches the actual data, using a set of approved indices such as CFI, RMSEA, and Chi-square. Figure (1) and Table (3) show the results of the confirmatory factor analysis.

Figure (1) Confirmatory factor analysis model for the study variables:

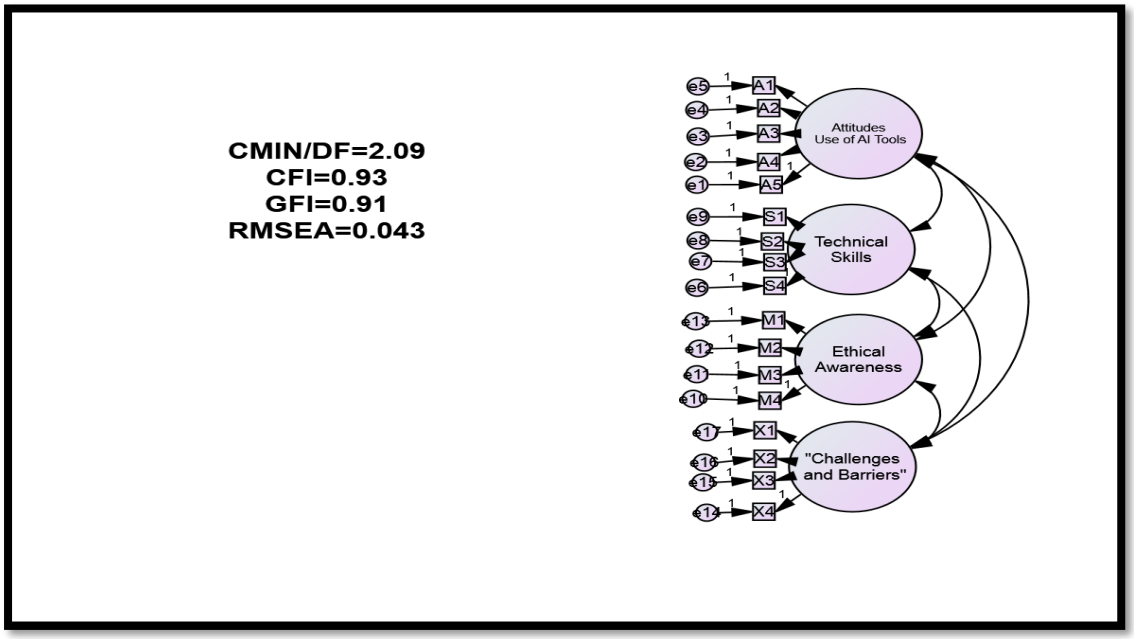


Table (3) Model Fit Indices for the Change Management Variable:

Indicator	calculated value	Standard value	Significance
CMIN/DF	2.09	≤ 3	Indicates model fit
GFI	0.93	≥0.90	Highly compatible
CFI	0.91	≥ 0.90	Highly compatible
RMSEA	0.045	≤ 0.08	Good match

From Table (3) it could also be seen that the (CMIN/DF =2.09 0.90), which is excellent fit value for the model. In addition, the comparison indices (CFI = 0.91) reached the threshold of acceptability (≥ 0.90), indicating that the quality of the model was acceptable. Finally, (RMSEA = 0.045) < (0.08), which implies that the model fits excellently. From this, we can conclude that the proposed model has a high statistical fitness quality, and it fits the data well.

5.4.2. Validity and reliability analysis:

The quantitative evaluation of the measurement model focused on testing the psychometric properties of the study axes, through the following tests:

- **Convergent Validity**: To ensure that each group of items related to a specific dimension has significant convergence that reflects a common trend.

-To ensure discriminant validity, each dimension must be independent from the others and there should be no overlap between concepts.

-The internal consistency of the items measuring each dimension was verified by estimating reliability using both the composite reliability coefficient (CR) and Cronbach's alpha coefficient.

-The results for average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha values for each dimension are presented in the table below, which confirm the strength of the model in terms of reliability and validity, paving the way for adopting the model in later structural analysis.

5.4.3. Convergent Validity:

After reviewing the results, it became evident from Table (4/3/) that all items achieved satisfactory standard loading coefficients, and the CR and AVE values went beyond the minimum recommended limits, which indicates the attainment of concurrent validity.

Table (4) Convergent Validity of the study variables

variable	AVE	CR
Trends towards the use of artificial intelligence tools	0.69	0.78
Technical skills	0.65	0.76
Moral awareness	0.62	0.74
Challenges and obstacles	0.66	0,77

Discriminant Validity:

It determines how much each dimension differs from the others. It was verified using the Heterotrait-Monotrait Ratio (HTMT) index, which is one of the modern tests proposed by studies (Henseler et al., 2015) to verify discriminant validity, as it depends on comparing the ratio of correlations between different variables to the correlations between the variables that make up the same dimension. The acceptable standard is that if the value of (HTMT) is less than (0.85), discriminant validity is achieved**.**

According to Table (5) all CRs were below (0.85) and ranged from (0.64 74). This cogent the variables which were under investigation are subjected to reasonable conceptual distinction a their none overlapping flesh of problem.

Table (5) Discriminant Validity

variable	Using artificial intelligence tools	Technical skills	moral awareness	Challenges and obstacles
Trends towards the use of artificial intelligence tools	-	0.73	0.67	0.77
Technical skills	0.73	-	0.69	0.72
Moral awareness	0.67	0.69	-	0.76
Challenges and obstacles	0.77	0,72	0.76	-

5.4.4.Internal Consistency Reliability:

The extent to which respondents seem to react consistently across questions that are supposed to assess a characteristic (reading, for example) reflects internal consistency. Its reliability is confirmed by Cronbach's alpha and CR. is considered to give more accurate results than Cronbach's alpha as it does not assume the same loading coefficients to each item and measures only one dimension.

The results of the table (6) show that all Cronbach's alpha coefficients and composite reliability coefficients were above the minimum acceptable level of 0.7, suggesting that items are highly consistent and stable. Consequently, the instruments used in this study have internal consistency and reliability.

Table (6): Internal Consistency Reliability:

variable	CR composite reliability	Cronbach's Alpha
Trends towards the use of artificial intelligence tools	0.81	0.83
Technical skills	0.77	0.73
Moral awareness	0.80	0.81
Challenges and obstacles	0.79	0.83

Based on the previous findings for validity (convergent and discriminant) and internal consistency tests (Cronbach's alpha and CR), the research instruments demonstrated acceptable levels of reliability and validity as per the selected statistical benchmarks. These measures offer a means of assessing the study variables, free from threats to instability or construct validity.

Thus, these outcomes allow us to proceed with the next step, that is, testing the main and sub-hypotheses of the research by using suitable statistical techniques, such as structural equation modeling (SEM) in AMOS), for

confirming nature of relationships among variables and obtaining estimates about strength and direction of effects postulated in the theoretical model put forward.

5.5. Study hypothesis test results:

The main hypothesis was tested, which states that there is a statistically significant relationship between the attitudes of undergraduate students in the College of Business towards using artificial intelligence tools and their level of use for academic purposes. The sub-hypotheses of the study aimed to reveal the existence of statistically significant differences in the study variables (attitudes towards using artificial intelligence tools, technical skills, ethical awareness, challenges and obstacles) according to the demographic variables (gender, specialization, academic level, cumulative GPA, and technical experience), as follows:

-There are statistically significant differences in students' attitudes toward using AI tools attributed to academic specialization (such as the scientific department) .

- There are statistically significant differences in students' attitudes toward using AI tools attributed to the gender variable.

- There are statistically significant differences in students' attitudes attributed to academic level.

- There are statistically significant differences in students' use of AI tools attributed to cumulative GPA.

-There is a statistically significant relationship between the possession of technical skills and students' attitudes toward using AI tools.

- Students' awareness of ethical standards and their attitudes towards using AI tools are statistically significant.

To test the hypotheses, the study used Multi-Group Analysis in AMOS program, to test the hypotheses (first, second, third, fourth) by comparing the restricted model (which assumes the equality of path coefficients between groups) with the unrestricted model (which allows those coefficients to differ). The significance of the differences was judged based on the difference in the χ^2 value between the two models, and at the level of statistical significance (P-value) at ($0.05 \geq \alpha$).

If differences were found, standardized means were used to determine the category in whose favor the differences were found.

The use of path analysis was utilized to test hypotheses about the relationship between technical skills possession, students' awareness of ethical controls, and their attitudes towards using AI tools.

5.5.1. First: The results of the test of the significance of differences in attitudes towards the use of artificial intelligence tools

Part of the objectives in this study were: To test the hypotheses on the existence of differences between university students' attitudes towards using artificial intelligence tools with regard to demographic and academic variables such as academic specialization, gender, category student belongs to(undergraduate or graduate), average percentage score and the importance of these differences between different categories for each one. All variables and statistical values, including the Pvalue (sig) and the referred group presenting differences are displayed in

Table (7) according to this analysis**.**

Table (7) Testing the significance of differences in attitudes towards using artificial intelligence tools:

variable	Number of groups	value χ^2	$\Delta\chi^2$	sig	favour
Scientific Department	Business Administration, Accounting, Finance, Insurance, Economics, Marketing	121.87	24.53	0.000	Insurance and Risk Management
Gender	Male, Female	39.22	7.321	0.002	Female
Academic level	First, second, third, fourth	88.43	13.65	0.000	third, fourth
Cumulative GPA	Less than 2.5, 2.5 to 3.5, 3.49 to 4.49, 4.5 to 5	101.12	17.82	0.000	3.5 to 4.49

Table (7) shows the following:

5.5.2First: The first hypothesis: Academic specialization:

The findings indicate that attitudes toward adopting AI tools varied statistically based on academic discipline. These contrasts supported insurance and risk management students relative to other majors (accounting, business administration, economics, finance). This phenomenon is likely to be due Institutional Research Review' Website' (Reason: no 'Other reason') more on the fact that insurance and risk management degree programs tend to prepare students in applied aspects of insurance business, improving their technical skills use of state-of-the-art technology significantly AI technology tools.

5.5.3The second hypothesis – Gender

The results also showed statistically significant differences between the sexes, with females having higher tendencies toward using AI tools than males. This is attributed to potential factors related to familiarity with technology, confidence in its use, and different patterns of digital resource use between males and females. The digital gender gap in educational contexts has already been observed in previous studies, and this trend is in line with it.

5.5.4. The third hypothesis - academic level:

The findings revealed statistically significant differences based on educational level, with students in the third and fourth grades having a more positive attitude towards AI. These students may have gained more experience during their studies and been more exposed to digital educational environments that relieve AI tools, which are likely responsible for this.

5.5.5. Fourth hypothesis - cumulative average:

Finally, cumulative GPA was significantly associated with attitudes toward the use of artificial intelligence; those differences favored students who had higher GPAs (3.5to 4.49). This means that higher academic-achieving students are more likely than lower-academic achieving students to use various digital tools and AI as an aid for self-learning and better performance at school, demonstrating the awareness of technology in improving educational results.

The results of the study are in accordance with the four hypotheses that were also confirmed by them, which indicated a significant difference in attitude towards using artificial intelligence tools under academic specialization and gender level and cumulative GPA. These findings support the validity of Hypotheses and the relative importance of these variables for predicting students' attitudes toward artificial intelligence use

5.6. Path analysis results:

To examine the hypotheses about effects of technical skills and students' knowledge of ethical regulations on attitudes toward using AI tools, we utilized a path analysis technique as one the advanced statistical approach among causal modeling (SEM). Standard regression coefficients (β) were determined to assess the impact of the independent variable or change in dependent one and backed by both CR (Critical Ratio value) and level of significance (P-values) which are considered strength and reliability that have between constructs in model.

Table (8) Results of path analysis of relationships:

The relationship between variables	regression coefficient	value **CR**	Significance Level(P)	**decision**
Having technical abilities and a propensity to use artificial intelligence tools	0.456	6.765	0.000	Statistically significant
Students' awareness of ethical controls and the trend towards using artificial intelligence tools	0.387	9.452	0.000	Statistically significant

Table (8) shows the results of the hypothesis test.

5.6.1. Hypothesis: "There is a statistically significant relationship between the possession of technical skills and students' attitudes toward using artificial intelligence tools."

There is a robust and statistically significant positive relationship between technical skills and the propensity to employ AI tools, as shown by path analysis outcomes. The regression load $\beta = 0.456$ (CR of 6.765, $P = 0.000$). This outcome shows that the more technically inclined students are more likely to adopt AI tools in education. Digital skills are shown here to be a foundation on top of which the adoption of new technological tools can happen, and students can experiment with AI being confident about their use.

This result is well-grounded in the literature that suggests a positive attitude towards technology related to the efficient use of technologies, therefore stressing once more the importance of training programs when dealing with digital transformation in higher education.

5.6.2. Hypothesis 6: "There is a statistically significant relationship between students'
ethical controls consciousness and attitudes towards the adoption of artificial intelligence tools."

Moreover, the results of path analysis found a positive and significant association between awareness by students of the ethical controls and attitudes towards use AI tools, $\beta = 0.387$; CR value of 9.452; $P < 0.01$. This finding implies that students with a high level of ethical awareness tend to have positive attitudes toward the use of AI tools, possibly because they are more aware of the ethical boundaries when using technology and can safely handle such tools in a responsible manner.

This finding is consistent with recent trends in educational and technical literature, which emphasizes that awareness of ethical issues such as privacy, transparency, and the safe use of technology is a crucial element in shaping users' attitudes toward AI applications, especially in the academic context.

Based on the above, the path analysis results confirm the validity of Hypotheses 5 and 6, highlighting that individual and cognitive factor, such as technical skills and ethical awareness, play a crucial role in shaping students' attitudes toward using AI tools.

6.DISCUSSION:

The analysis confirms that all variables used to understand the attitudes of Imam University College of Business students toward the use of AI tools for academic purposes were well and adequately defined, confirming that they are all consistent with the construction and of great significance.

The study aimed to analyze the attitudes of students in the College of Business at Imam University toward the use of artificial intelligence tools for academic purposes. The study results revealed statistically significant differences in attitudes toward the use of artificial intelligence tools based on academic specialization. These differences favored students majoring in insurance and risk management compared to other majors. This can be explained by the fact that insurance and risk management programs rely more on practical and applied aspects and increasingly use analytical programs and intelligent systems in data analysis and decision-making, which enhances students' awareness of the importance of artificial intelligence and its practical uses.

This finding is consistent with the findings of a study by (Zawacki-Richter et al. 2019), which confirmed that applied and professional majors demonstrate higher levels of acceptance of educational technology. (Al-Anzi's ,2022) study found that students in technical majors have a more positive attitude towards artificial intelligence due to their specializations' association with analysis and evaluation using digital tools.

-A significantly higher ratio of females compared to males reported a preference for using AI tools, the results indicated.

These findings might be interpreted as a result of females being more accustomed to work within digital educational environments and use AI for academic help and self-reflection.

Furthermore, such result is in line with (Teo,2016) which stated that females have the tendency to be more motivated when using educational technologies, as well as with (Al-Shammari,2021) which revealed that female students also had more positive attitudes towards AI tools because they feel safer inside structured digital worlds. However, this finding was not in line with (Abdelrahman & Yrby,2022) which reported no significant differences between male and female. This may indicates the gender effect is possibly a phenomenon of individual culture and education pattern.

-The attitude of fifth and sixth years toward AI tools was more positive than the evaluations of this time period seeking an evaluation from the second or third year. This is because studying and a cumulative experience of dealing with digital educational platforms throughout their education has raised the students' confidence in resorting to AI technologies.

This finding is in line with findings (Deng & Yu, 2022), who noted that for students, more extensive exposure to modern technologies and subjects at the higher level of education was gradually building positive attitudes towards them. Students' cognitive maturity and academic background appear to influence on the acceptance of smart tools (Al-Hajri's,,2023).

-The results revealed that students with high GPAs (3.5-4.49) had more positive attitude toward AI. This is in line with the tendency that high-achieving students perceive AI tools as being more important for enhancing performances and knowledge to a greater extent than less academically competent students.

Positive relationship between use of intelligent learning resources and academic performance, was revealed by a research study (Al-Fraihat et al. 2020). It is consistent with (Al-Khatib,2022) that showed high ability students tend to use Self-learning supports via digital tools.

-Path analysis results revealed that with respect to the effect of technical skills on AI-tool using behavior, the direct path was significant with a positive sign ($\beta = 0.456$, $P = 0.000$).

Higher order digital skills also influenced students' ability to effectively and confidently use AI tools.

Analysis Venkatesh et al. 2003) into the TAM that technical skill would have a positive effect on BIU.This is in line with this outcome. The study by (Al-Otaibi,2021) concluded that acquiring digital skills is a prerequisite for the implementation of AI tools in university education.

-The results of structural analysis indicate that there is a significant and positive effect between students' understanding of ethical controls ($P=0.000$) and attitude to use AI tools group.

So as this finding points out, trust for new technology is a matter of ethics. The more a student is conscious of the moral boundaries of AI usage, the more likely they are to use it responsibly and safely.

This result confirms the findings of (Jobin, Ienca, et al, 2019) which concluded that ethical values play a crucial role in accepting AI usage in eLearning. (Al-Saeed,2023) investigated how awareness the ethical considerations can alleviate fears for misuse of AI instruments.

Based on the above, there is a complex interplay at work to mold students' perceptions about using AI tools.

-Technical skills, academic success, and ethical sense are all individualistic.

-Educational background (field of study and academic status),

-Gender and digital learning spaces as social and cultural factors.

7.CONCLUSION:

The purpose of this study is to provide a comprehensive overview of the attitudes of business students at Imam Muhammad ibn Saud University towards the use of artificial intelligence tools in academic settings. It focuses on important issues and future research directions in related fields and offers insight into the definitions and concepts related to artificial intelligence tools used for academic purposes.

The findings led to recommendations being presented to those in charge of education in Saudi universities, particularly at Imam University's College of Business. First, the recommendations emphasize the need to train students and faculty members in the College of Business on the use of AI tools in the educational process, preparing specialists in the field, with the possibility of developing their skills in how to use these tools. Students

should also be introduced to the ethical and methodological challenges associated with using AI as an aid, while adhering to the rules of academic integrity and the ethics of its use. This is a normal use that falls within the scope of modern technology use in the educational process. Furthermore, efforts should be made to establish laws, policies, and controls for the legal issue of using AI tools for academic purposes. Saudi universities, particularly Imam University, need to prioritize spreading AI concepts to students, professors, and administrators, while renouncing traditional academic and administrative methods to stay up with technological and digital advancements.

In general, this study assists in examining the views of students at the College of Business at Imam University regarding the use of artificial intelligence tools for academic purposes. It is also considered a scientific guide based on the path of critical analysis, and every researcher can benefit from it, especially in the field of humanities.

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