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| Research Article

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The Impact of Using Artificial Intelligence Chatbots on Student Academic Performance

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Abstract: The primary purpose of the current study is to explore the nature of the relationship between the research variables (AI chatbots and student academic performance) in "the College of Computer Science and Mathematics" at the University of Kufa. The importance of the study stems from the scarcity of studies that have attempted to clarify the relationship between these variables. The current study aims to offer guidance that can enhance the performance of the research sample.

Google Forms was used to create the questionnaire and collect data. (250) responses were obtained. After removing duplicates from the statistical data, the number of responses became (247), with a student response rate of (98%). Statistical programs (AMOS v.28 and SPSS v.30) were used.

Several statistical analyses were conducted on the data, including Corning's alpha, standard deviation, mathematical average, coefficient of variation, and regression analysis. The theoretical aspect revealed a knowledge gap between the research variables.

The results of the study's practical aspect revealed a strong, significant, positive relationship between AI chatbots and their dimensions and student academic performance.

Key words: Artificial Intelligence Chatbots, Student Academic Performance, Students of "the College of Computer Science and Mathematics", University of Kufa.

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Introduction

The advent of new AI technologies has had far-reaching effects on people, places, and things across many domains; academia is no exception. One of the most common forms of artificial intelligence (AI) that is utilized to supplement educational pursuits is chatbots. (Polyportis & Pahos, 2025: 315) An educational chatbot provides external regulation for students by performing some metacognitive monitoring, rather than requiring students to perform these processes themselves. For example, the chatbot might identify two learning strategies previously used by a student in a task and ask them to compare the effectiveness of these strategies relative to the task requirements. In this way, The chatbot could potentially assist the student in freeing up mental energy to focus on other parts of the assignment, such gaining a more thorough grasp of the topics covered. In addition, it has the potential to offer pupils self-learning guidance, as education-oriented chatbots have been used. (Guan et al., 2025: 4494)

Section One: Research Methodology

First: Research Problem

One of the many problems with the conventional school system is that it often has too many students in each classroom, insufficient personal attention for students, diverse learning paces and styles, and the struggle to keep pace with the rapid advancement of technology and information. This, in turn, reduces student performance in general. Here, Chatbots powered by artificial intelligence have shown great promise in effectively tackling some of these issues. Recognizing their value, certain educational institutions are increasingly relying on chatbots powered by artificial intelligence. Artificial intelligence (AI) chatbots aim to simulate natural human speech by using a conversational approach. (Labadze et al., 2023:1) In many cases, chatbots can help students understand specific concepts, develop their skills, and improve their academic performance. Chatbots can be used for educational purposes to organize questions and responses, providing feedback to students. Educational institutions should utilize chatbots to create an engaging e-learning environment that fosters enjoyable learning experiences for students. Sometimes, their role and impact are effective in improving student performance (Nee et al., 2023:516). The question that arises here is: What is the impact of using AI chatbots on students' academic performance? Therefore, the research problem can be formulated as follows: (How can a student use AI chatbots to improve their academic performance?) The research question branches off from the main problem: (What is the impact of using AI chatbots on the academic performance of students in “the College of Computer Science and Mathematics”?)

Second: The study’s significance

The study’s significance stems from:

1. Studying the use of AI chatbots at the academic level for students is a recent topic that requires focused study and clarification of its dimensions.
2. There is great interest in AI chatbots. Artificial intelligence (AI) conversational simulating the human mind impacts student performance at various academic levels.
3. The research provides researchers and interested parties with conceptual frameworks for the research variables, serving as a starting point for future studies.
4. The research provides new cognitive frameworks that can be offered to help students improve their academic performance.

Third: Research Objectives

1. After formulating the main research problem, the research aims to achieve a set of objectives upon completion, as follows:

2. Identify the impact of using AI chatbots on student academic performance.
3. Reveal the extent of the impact of using AI chatbots on student academic performance.
4. Identify the impact of using AI chatbots in the Iraqi academic environment.

Fourth: Research Hypothetical Plan

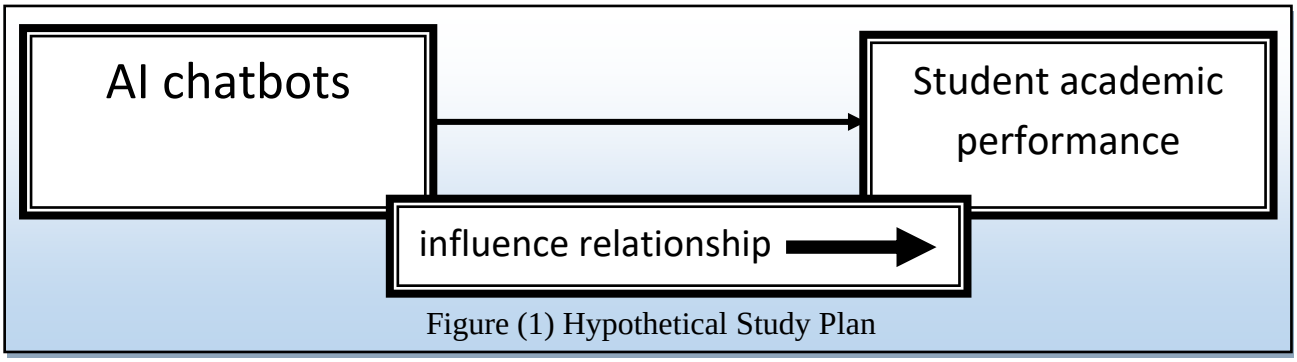

Figure (1) Hypothetical Study Plan

Source: Prepared by the Researchers

Fifth: Research Hypotheses

Main Hypothesis of the Study

- "There is a significant positive impact" of artificial intelligence chatbots on students' academic performance in general, from which the following sub-hypothesis emerges:
- "There is a significant positive impact" of the dimensions of artificial intelligence chatbots on students' academic performance at the aggregate level.

Sixth: Research Community and Sample

The research community consisted of (250) students from "the College of Computer Science and Mathematics" at the University of Kufa for the academic year 2024-2025, who participated in the survey. (250) questionnaires were distributed electronically to students at the college using Google Translate. The final responses, after removing duplicate answers, reached (247), representing a 98% participation rate in the survey.

Section Two: The Theoretical Aspect of the Research

First: The Concept of Artificial Intelligence Chatbots

Human-like chatbots, such as ChatGPT, Copilot, Gemeni, and other generative AI tools, have contributed to disrupting the traditional approach to operational activities in some fields, including teaching, learning, and research. The tremendous computational advances in artificial intelligence have been considered a tool for problem-solving and its application in education and social life through the creation of AI-powered chatbots (Akpan et al., 2025: 1252).

A chatbot driven by artificial intelligence is a program that can hold natural-language conversations with users and process their input. Joseph Weizenbaum (1966) created the first chatbot, ELIZA, over fifty years ago. One example of a current use of chatbots is answering frequently asked questions and providing information. In recent years, chatbots have found their way into the classroom to assist with a variety of tasks, including keeping students engaged in scientific learning, improving their grades, preparing them for university, and facilitating the management of huge class activities(Huang et al., 2022:2). Chatbots are one of the fundamental applications of artificial intelligence. They are automated conversational systems that converse with humans in natural language. They serve as virtual personal assistants that assist with various tasks such as information retrieval, research, and relationship building. Chatbots have the potential

to greatly improve the verbal and emotional components of learning, allowing for a more tailored experience for every learner (Bilquise et al., 2024:4).

Chatbots are computer programs that use artificial intelligence models designed with the ability to generate various activities, including conversations with human users when prompted. These models rely on generative artificial intelligence (AI).

Second: Dimensions of AI Chatbots

Bilquise et al. (2024) show that there are six dimensions of AI chatbots: perceived ease of use, perceived usefulness, perceived trustworthiness, human-like emulation, social influence, and perceived autonomy. These dimensions are explained below:

1. **Perceived Ease of Use**: What this means in the context of intelligent chatbot interactions is how simple it is for users to navigate the bot, access its capabilities, and get the data they need. There will be more adoption and satisfaction with the chatbot's features if it is simple to use. The level of personal belief dictates this. (Rahman et al., 2025:7).
2. **Perceived usefulness:** How much a person believes a system or piece of technology may help them be more productive at work is what this metric measures. It has been applied in various domains pertaining to the adoption of technology, including those involving AI-powered chatbots, and is a basic criterion for AI-based learning systems. How valuable something is to students is a major factor in whether they will embrace it and keep using it in the classroom.(Bilquise et al., 2024:8).
3. **Perceived trust:** Users' expectations regarding the chatbot platform's dependability and honesty are what this term alludes to. Students are more likely to commit to taking part in targeted activities when they have faith in the technology's ability to meet their needs and meet their expectations. When students trust the chatbot, they are more likely to use it. (Rahim et al., 2022: 6)
4. **Simulation of the human mind:** A simulation of the human mind occurs when inanimate things, especially natural events and supernatural beings, are given human-like emotions, thoughts, and actions. Any combination of hardware and software elements that evokes a humanoid form can be considered embodiment. Perceived social presence and attitude, two factors crucial to fruitful human-computer interactions, are both positively impacted by increased similarity (Polyportis & Pahos, 2025: 319).
5. **Social influence:** Social influence also explains the intention to use chatbots and refers to the people the user generally knows and the people who specifically influence them. Examples of social referencing suggest a way in which educational institutions can promote the use of chatbots. (González et al., 2021: 22)
6. **Perceived Autonomy:** In educational contexts in particular, the concept of perceived autonomy—the degree to which a person feels they have choice and control—is crucial to the acceptance of new technologies. Autonomy encompasses the awareness of choices in behaviors that are congruent with students' personal aspirations and principles, and thus relates to their free willed engagement in educational pursuits, which is in harmony with our innate propensity for flourishing. (ur-Rehman, 2024: 200).

Third: - The Concept of Student Academic Performance

There are many personal, familial, and societal aspects that impact academic achievement, making it a fragile and complicated notion. In order to enhance educational results, it is crucial to comprehend these elements and the ways in which they affect students' academic performance. Educators and politicians should take a variety of factors into account when creating interventions and supportive environments to boost students' academic achievement. These factors include

education quality, motivation, parental participation, and school atmosphere (Yakin & Seraj, 2023:3).

Kumar et al. (2021:3092) define student academic performance as the knowledge acquired by a student, assessed by the teacher through their grades and/or the educational goals set by students and teachers to achieve over a period of time.

Both researchers (Ruma & Abdurrahman, 2023:2) view student academic performance as the demonstration of acquired knowledge or skills developed by students in a subject area, as measured by test scores set by teachers.

Fourth: Dimensions of Student Academic Performance

From the perspective of Alyami et al. (2024), there are six dimensions for studying student academic performance: student impressions, positive attitudes, negative attitudes, positively influencing factors, short-term time management, and time management practices. These dimensions are explained below:

1. **Student impressions:** Encouraging students to actively engage in their learning, engage in engaging academic activities, communicate effectively with faculty, participate in enriching educational experiences, and feel supported and validated by university learning communities are all important components of making a good impression, which encompasses both academic and non-academic aspects of improving student performance. (Afzal & Crawford, 2022: 3).
2. **Positive attitude:** An attitude is a personal propensity that organizes one's ideas, emotions, and actions in relation to a mental object. Beliefs, sentiments, and attitudes that motivate people to act in a consistent manner toward individuals, objects, situations, and organizations are considered fixed and immutable. People who approach learning with a positive mindset are more likely to grasp its essence. (Şen, 2013: 947).
3. **Negative attitudes:** This is the most common source of stress for university students. Students who experience academic pressures, such as constant research, writing research papers, and preparing for exams, face the most common daily challenges. Examinations, test preparation, competitiveness at the class level, and acquiring a large amount of knowledge in a short period of time all contribute to increased academic stress (Deng et al., 2022:2).
4. **Positive influence factors:** Self-assessment is increasingly playing a key role as a learning and assessment strategy in the higher education sector, improving the quality of student learning as independent learners. Students can actively participate in their own assessment process, and thus, engaging them in their own assessment can increase their success rate. Numerous reviews indicate that self-assessment can enhance students' academic performance, and this can be achieved through activities such as self-assessment and self-regulated learning. (Hooda et al., 2022: 4)
5. **Short-term time management:** Faculty-led short-term field programs can play an important role in enhancing student performance in a dynamic environment such as globalization, global competitiveness, and social norms. Research abroad and experiential education work well together since they both aim to provide students the tools they need to succeed academically, even though not all programs should be structured in the same way. (Perry et al., 2013: 190)
6. **Time management practices:** The regular student workflow in colleges and universities is the foundation for ensuring core education and teaching. Therefore, students' extracurricular activities increase in addition to core teaching, including group activities such as community activities, social work, and internships, as well as personal activities such as mental health and well-being education (Qiu & Han, 2022: 1).

Section Three: The Applied Aspect of the Research

First: Coding the Variables, Items, and Research Scale

The researchers relied on Cronbach's alpha test to determine the reliability of the questionnaire items. Table (1) shows the overall reliability of the artificial intelligence chatbot variable (0.938), while the overall reliability of the student academic performance variable (0.884). The test results demonstrate that the reliability rate meets the research objectives. Through this, the relationship between the research variables is determined. These include artificial intelligence chatbots as an independent variable, which consists of six dimensions: (perceived ease of use, perceived usefulness, perceived trust, simulation of the human mind, social influence, and perceived independence). Students' academic performance, which is a dependent variable, also consists of six dimensions: (student impressions, positive attitudes, negative attitudes, factors with a positive impact, short-term time management, and time management practices). The researchers developed simple codes for the research variables and dimensions to facilitate the statistical analysis process. Table (1) illustrates this.

Table (1): Codes for the research variables and dimensions, number of items, and Cronbach's alpha coefficient for the variables and dimensions, and research measures.

Variable	Variable symbol	Dimension	Dimension symbol	Number of paragraphs	Cronbach's alpha coefficient for dimensions	Cronbach's alpha coefficient for variables	Search metrics
Artificial Intelligence Chatbots	AIC	Perceived Ease of Use	PE	4	0.847	0.938	(Bilquise et al.,2024)
		Perceived Usefulness	PB	5	0.811		
		Perceived Confidence	PT	5	0.832		
		Simulation of the Human Mind	SM	5	0.766		
		Social Influence	SO	4	0.766		
		Perceived Autonomy	BU	3	0.765		
Student Academic Performance	PRO	Student Impressions	SI	3	0.557	0.848	(Alyami et al.,2024)
		Positive Attitude	PA	6	0.824		
		Negative Attitude	NA	2	0.664		
		Influencing Factors	FP	3	0.677		
		Time Management in the Long Term	ST	4	0.739		
		Time Management Practices	TM	3	0.823		

Source: Prepared by researchers

Second: Confirmatory Factor Analysis

Researchers verified the validity of the confirmatory construct by conducting confirmatory factor analysis, which is one of the most important applications of structural modeling. This analysis

aims to identify the nature of the hypothetical model, which consists of latent variables that represent the hypothesized dimensions of the scale, through which the arrows are directed to the measured variables or dependent variables.

Table (2) Model Goodness of Fit Indicators

Indicators	Model goodness of fit
Comparative Fit Index (CFI)	Greater than or equal to 0.90
Normed Fit Index (NFI)	
Goodness of Fit Index (GFI)	
Root Mean Square Error of Approximation (RMSEA)	Less than or equal to 0.08

Source prepared by researchers based on Hair, J., Hult, G., Ringle, C., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM. Los Angeles: Sage

1. Confirmatory factor analysis of the independent variable: AI chatbots

Figure (2) below shows the results associated with the confirmatory factor analysis of this variable**.**

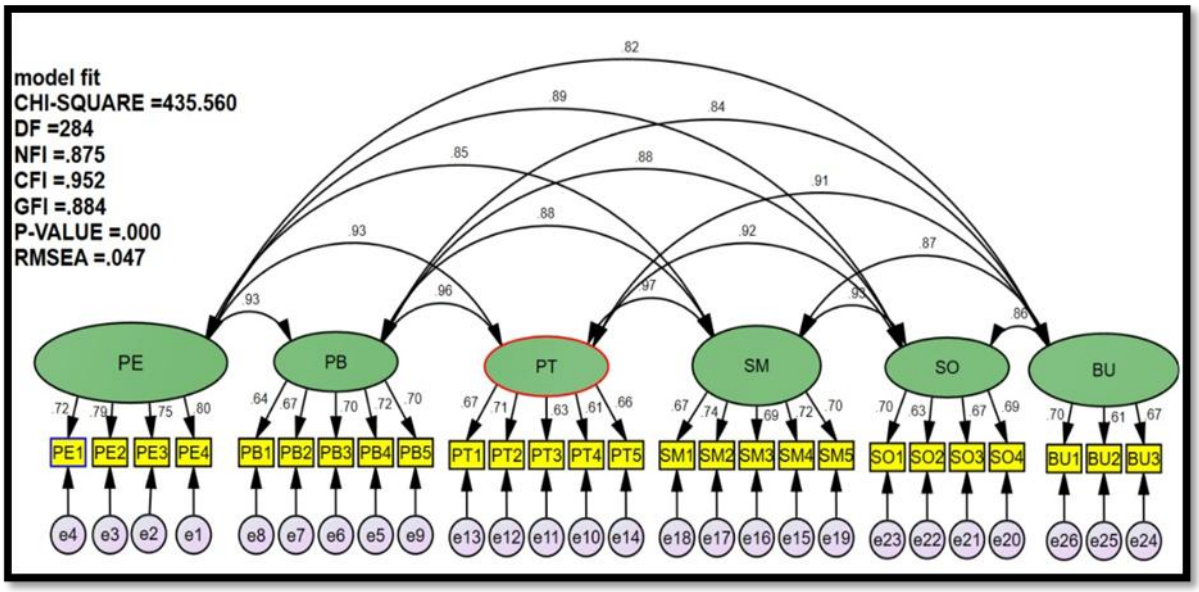

Figure 2: Confirmatory factor analysis of the AI chatbot variable

Source: AMOS v.28 program outputs

Table (3) Factorial divergences of the AI chatbot variable

PATH			S.R.W	S.E.	C.R.	P	PATH			S.R.W	S.E.	C.R.	P
BU1	<---	**BU**	0.696	0.059	11.403	***	**PT1**	<---	**PT**	0.670	0.056	11.614	***
BU2	<---		0.606	0.058	9.662	***	**PT2**	<---		0.713	0.055	12.591	***
BU3	<---		0.669	0.061	10.878	***	**PT3**	<---		0.634	0.055	10.829	***
PB1	<---	**PB**	0.644	0.060	10.893	***	**PT4**	<---		0.605	0.055	10.230	***
PB2	<---		0.667	0.057	11.384	***	**PT5**	<---		0.658	0.053	11.353	***
PB3	<---		0.703	0.054	12.203	***	**SM1**	<---	**SM**	0.673	0.056	11.561	***
PB4	<---		0.718	0.053	12.571	***	**SM2**	<---		0.740	0.057	13.125	***
PB5	<---		0.696	0.051	12.038	***	**SM3**	<---		0.692	0.053	11.982	***
PE1	<---	**PE**	0.718	0.060	12.584	***	**SM4**	<---		0.715	0.058	12.527	***
PE2	<---		0.787	0.056	14.324	***	**SM5**	<---		0.700	0.060	12.175	***
PE3	<---		0.746	0.055	13.262	***	**SO1**	<---	**SO**	0.701	0.054	12.000	***
PE4	<---		0.800	0.055	14.687	***	**SO2**	<---		0.632	0.057	10.500	***

Source: AMOS v.28 program outputs

Figure (2) shows that all factorial divergences for the items on the independent variable scale, AI chatbots, are greater than the minimum acceptance threshold. The results of Table (3) show the standardized regression weights (SRW), indicating that the data for this variable are suitable for subsequent statistical analyses. All factorial divergences for the items were greater than or equal to (≥50.0), and if they were less than that, they were removed from the analysis. The significance level was less than 0.001 for all items, and the critical ratio was higher than 1.96 for all items (Hair et al. 2017).

2. Confirmatory factor analysis for the dependent variable, students' academic performance

Figure (3) below shows the results associated with the confirmatory factor analysis for this variable**.**

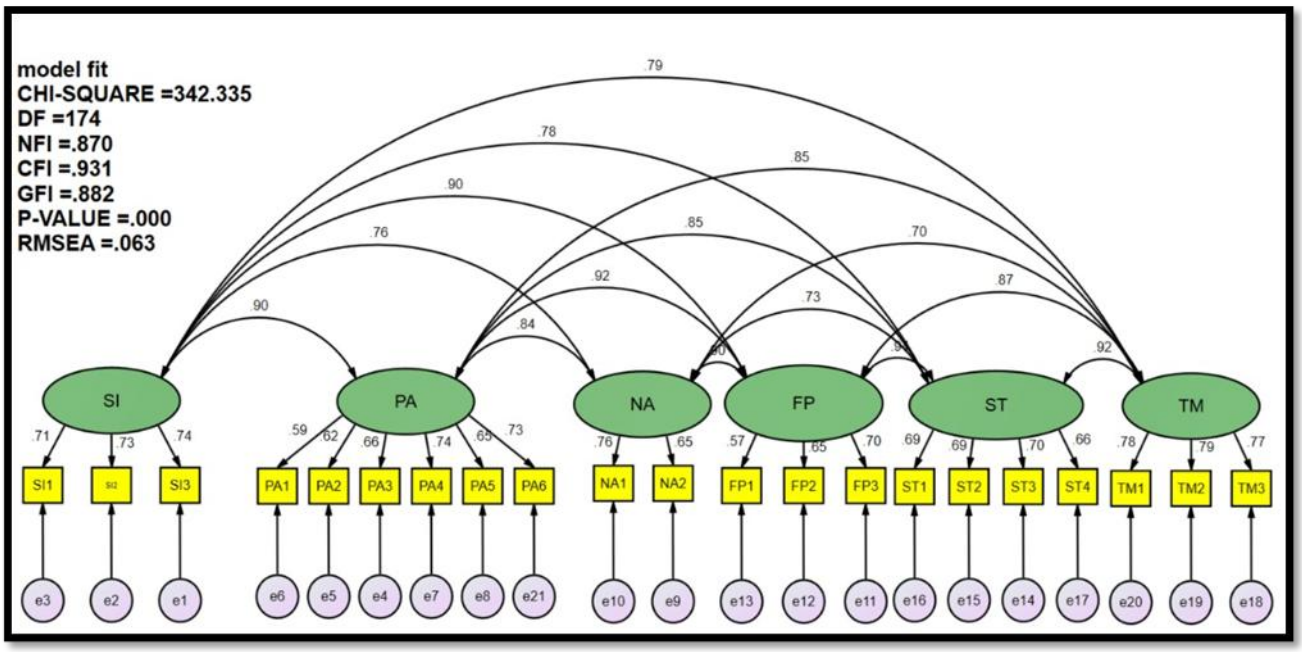

Figure (3) Confirmatory factor analysis of the variable of students' academic performance

Source: AMOS v.28 program outputs

Table (4) Factorial divergences of the dependent variable of students' academic performance

PATH			S.R.W	S.E.	C.R.	P	PATH			S.R.W	S.E.	C.R.	P
FP1	<---	**FP**	0.565	0.057	9.150	***	ST1	<---	**ST**	0.687	0.060	11.667	***
FP2	<---		0.648	0.059	10.721	***	ST2	<---		0.687	0.061	11.657	***
FP3	<---		0.696	0.059	11.670	***	ST3	<---		0.700	0.060	11.939	***
NA1	<---	**NA**	0.765	.063	12.028	***	ST4	<---		0.656	0.060	10.989	***
NA2	<---		0.650	0.062	10.213	***	TM1	<---	**TM**	0.782	0.058	13.998	***
PA1	<---	**PA**	0.589	0.064	9.732	***	TM2	<---		0.794	0.058	14.301	***
PA2	<---		0.624	0.061	10.448	***	TM3	<---		0.768	0.057	13.653	***
PA3	<---		0.658	0.060	11.185	***	SI1	<---	**SI**	0.711	0.059	12.037	***
PA4	<---		0.741	0.058	13.106	***	SI2	<---		0.727	0.056	12.392	***
PA5	<---		0.650	0.056	11.004	***	SI3	<---		0.736	0.058	12.601	***
PA6	<---		0.728	0.061	12.802	***							

Source: AMOS v.28 program outputs

Figure (3) shows that all factorial divergences for the items measuring the knowledge sharing variable at work are greater than the minimum acceptance threshold. The results of Table (4) show that the standardized regression weights (SRW) indicate that the data for this variable are suitable for subsequent statistical analyses. All factorial divergences for the items were greater

than or equal to (≥50.0), and if they were less than that, they were omitted from the analysis. The significance level was less than 0.001 for all items, and the critical ratio was higher than 1.96 for all items (Hair et al. 2017).

Third: Descriptive Statistics of the Study

This section presents the results of the descriptive analysis using The mathematical average and standard deviation test in the SPSS v.30 statistical program. This section includes several axes (the first axis relates to the variable of artificial intelligence chatbots as an independent variable, which consists of six dimensions: perceived ease of use, perceived usefulness, perceived trust, simulation of the human mind, social influence, and perceived independence). The second axis relates to the variable of students' academic performance as a dependent variable, which also consists of six dimensions: (student impressions, positive attitudes, negative attitudes, factors with a positive impact, short-term time management, and time management practices).

1- Descriptive Statistics for the Independent Variable (Artificial Intelligence Chatbots)

A set of tests was used to determine the opinions of a sample of College of Computer Science and Mathematics students' attitudes toward the variable of artificial intelligence chatbots, as follows:

Table 5 shows the students' responses related to the variable of artificial intelligence chatbots. The mathematical average was (3.6832), the standard deviation was (0.66618), and the coefficient of variation was (0.444). This indicates the students' reliance on artificial intelligence chatbots. This variable had an mathematical average that exceeded the hypothetical mean of the scale, which is (3). The dimension (simulation of the human mind) was one of the most constitutive dimensions of the variable. This dimension achieved an mathematical average of (3.7271), a standard deviation of (0.76755), and a coefficient of variation of (0.589). These results demonstrate the sample members' perspectives toward this dimension and indicate a high level of this dimension within the scope of this variable. Meanwhile, the dimension (perceived trust) achieved the lowest mathematical average of (3.6526), a standard deviation of (0.70813), and a coefficient of variation of (0.589). (0.501), indicating a low level of this dimension within the scope of this variable from the students' perspective.

Table (5) Descriptive Analysis of Artificial Intelligence Chatbots

Dimensions	mathematical average	standard deviation	coefficient of variation
Perceived Ease of Use (PE)	3.7105	0.84145	0.708
Perceived Usefulness (PB)	3.6810	0.71948	0.518
Perceived Trust (PT)	3.6526	0.70813	0.501
Simulation of the Human Mind (SM)	3.7271	0.76755	0.589
Social Influence (SO)	3.6680	0.71113	0.506
Perceived Autonomy (BU)	3.6599	0.81675	0.667
Artificial Intelligence Chatbots (AI Chatbots) (AIC)	3.6832	0.66618	0.444

Source: SPSS V.30 program outputs

2- Descriptive statistics for the dependent variable (student academic performance)

A set of tests was used to determine the opinions of a sample of students from “the College of Computer Science and Mathematics” at the University of Kufa, as follows.

Table (6) shows the students' responses regarding academic performance. The mean was (3.6515), the standard deviation (0.69767), and the coefficient of variation (0.487). This indicates that employees agree that this variable is relevant to the work environment, and the mean for this variable exceeds the hypothetical mean (3). The student impressions dimension contributes

significantly to the formation of the above variable. The mean for this dimension was (3.7395), the standard deviation was (1.38651), and the coefficient of variation was (1.38651). These results demonstrate the sample members' perspectives on this dimension and indicate a high level of this dimension within the scope of this variable. At the same time, the dimension (negative attitude) achieved the lowest mathematical average and power (3.6154), standard deviation (0.85174), and coefficient of variation (0.725), indicating a low level of this dimension within the scope of this variable from the point of view of working individuals.

Table (6) Descriptive analysis of the variable of academic performance of students

Coding	mathematical average	standard deviation	coefficient of variation
Student Perceptions (SI)	3.7395	1.38651	1.922
Positive Attitude (PA)	3.6194	0.74749	0.559
Negative Attitude (NA)	3.6154	0.85174	0.725
Positive Influencing Factors (FP)	3.6810	0.71948	0.518
Short-Term Time Management	3.6356	0.79334	0.629
Time Management Practices (TM)	3.6181	0.88823	0.7890
Student Academic Performance (PRO)	3.6515	0.69767	0.4871

Source: SPSS v.30 program outputs

Fourth: Testing the Impact Relationships

This section examines the impact of relationships between the research variables. The researchers formulated a main hypothesis for the research, which addresses the impact of the relationship between the use of artificial intelligence chatbots on students' academic performance. The research hypothesis was tested using AMOS v.28, as follows:

1. Testing the main hypothesis, which states: "“There is a significant positive impact” relationship between artificial intelligence chatbots and students' academic performance in general."

This hypothesis demonstrates a significant impact of the use of artificial intelligence chatbots on students' academic performance, from the perspective of college students. The researchers designed a structural equation model to determine the impact of the above variables. Figure 4) shows this test as follows:

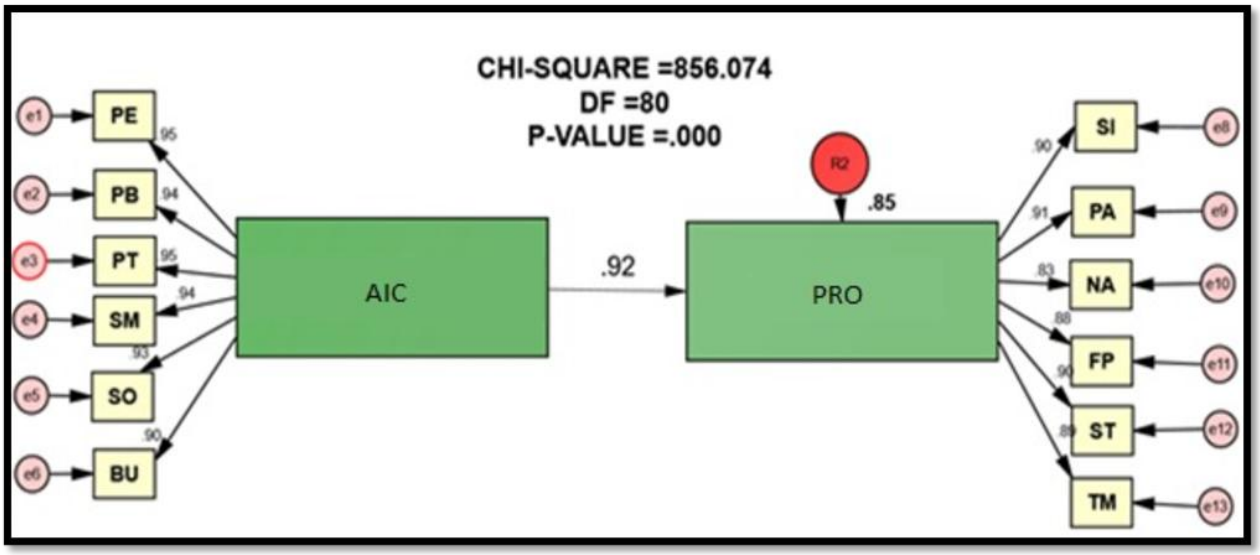

Figure (4) Model Goodness of Fit Indicators

Source: AMOS v.28 program outputs

Figure (7) was acceptable according to the model's goodness of fit indicators. According to the fit indicators, the model is suitable for testing the impact of artificial intelligence chatbots on students' academic performance. The impact value between the research variables was 0.92, as illustrated in the table below. The significance level was (0.000), which indicates the acceptance of the hypothesis. The interpretation coefficient value, R2, was (0.85), indicating that the artificial intelligence variable explains (85%) of the factors that explain the knowledge sharing variable at work. The remaining percentage is related to factors not identified in the current research.

Table (7) Impact Coefficient between Artificial Intelligence Chatbots and Students' Academic Performance

The path			S.R. W	S. E	C.R	R2	P
Chatbots	→	Student academic performance	0.923	0.24	37.5	0.85	***

Source: AMOS v.28 program outputs

Table (7) and the results of the statistical analysis show a strong, positive, and significant impact of AI chatbots on the academic performance of students in "the College of Computer Science and Mathematics". This is at a significance level of (0.001), which means that the hypothesis is valid.

1. Sub-hypothesis Testing: which states: "There is a significant, positive impact of the dimensions of AI chatbots on students' academic performance."

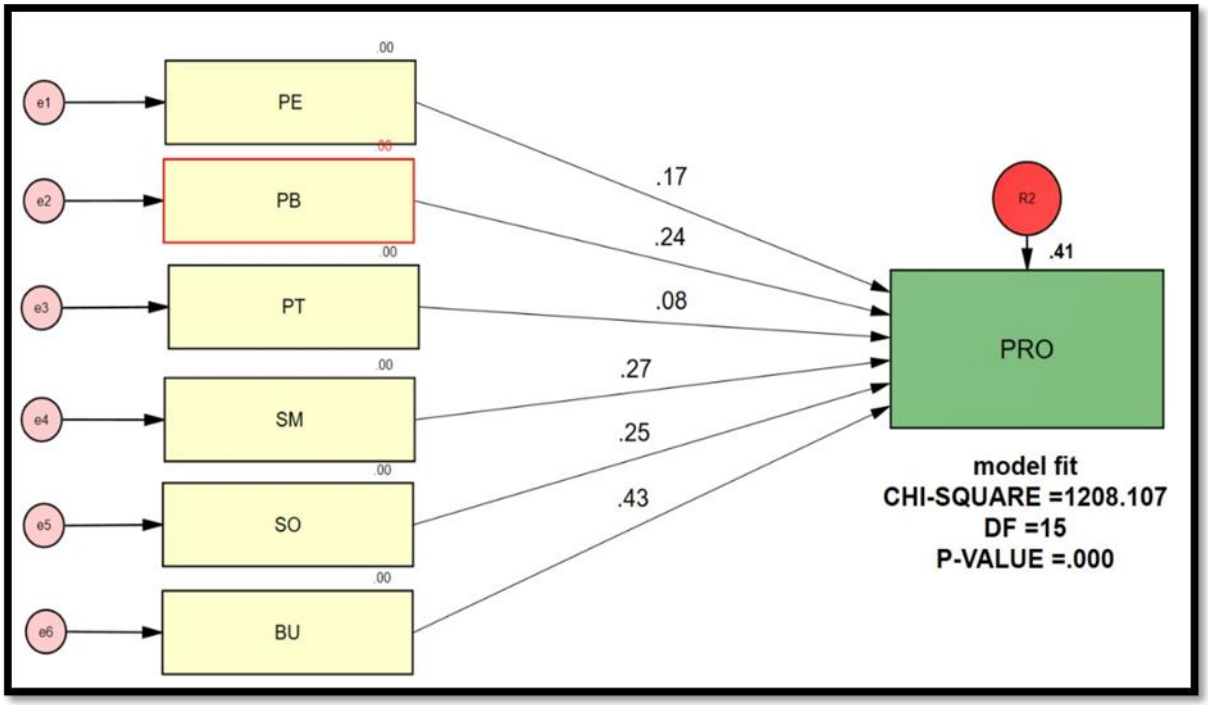

Figure (5) Model fit indicators for sub-hypotheses

Source: AMOS v.28 program outputs

Table (8) Impact coefficient between AI chatbot dimensions on students' academic performance

The path			S.R.W	S.E.	C.R.	P	Decision
Perceived Ease of Use	→	Academic Performance	0.173	0.028	3.536	***	Accept
Perceived Usefulness	→		0.239	0.033	4.880	***	Accept
Perceived Trust	→		**0.085**	**0.03**	**1.730**	**0.08**	Reject
Human Mind	→		0.270	0.031	5.518	***	Accept

Simulation							
Social Influence	→		0.253	0.033	5.178	***	Accept
Perceived Autonomy	→		0.426	0.031	8.713	***	Accept

Source: AMOS v.28 program outputs

Table (5) and Figure (8) above illustrate the impact of AI chatbot dimensions on students' academic performance, which is acceptable according to the fit quality indicators for this model. According to the fit indicators, the model is suitable for testing the impact of AI chatbot dimensions (perceived ease of use, perceived usefulness, simulation of the human mind, social influence, and perceived autonomy) on students' academic performance. The impact value between the dimensions was (0.173, 0.239, 0.270, 0.253, and 0.426), with five dimensions having significant significance (0.000), except for the dimension (perceived trust), which was insignificant (0.08). The value of the interpretation coefficient for the dimensions, R2, was (0.25). This indicates that the AI chatbot dimensions were able to explain (25%) of the factors that explained students' academic performance. As for the remaining factors, it is beyond the researcher's ability. From the above, the researchers conclude that the more students use AI chatbots in academic settings, the better their performance.

Section Four: Conclusions and Recommendations

First: Conclusions

This section presents the key conclusions of the researchers, highlighting the most important findings.

1. Students in “the College of Computer Science and Mathematics” have a significant reliance on AI chatbots, which in turn has contributed to improving their academic performance.
2. The results of the statistical analysis showed a strong, positive, and significant impact of AI chatbots on students' academic performance. The results indicate that the use of AI chatbots and their dimensions contributed to increasing students' academic performance.
3. Numerous studies have shown that AI chatbots help increase students' academic performance, which would support the scientific research system in the college under study.

Second: Recommendations

Based on the research findings, the researchers present a set of recommendations in an effort to address the shortcomings of the college under investigation through the following:

1. The college under investigation should disseminate the concepts of artificial intelligence and highlight the positives of applying the technology in various academic fields. This will help students abandon traditional learning methods and encourage them to adopt new scientific tools to keep pace with global developments.
2. There is a need to hold seminars and workshops on the importance of artificial intelligence and its prominent role in various fields of practical research, so that students are constantly informed of this technological revolution.
3. Strengthen the technological infrastructure and develop artificial intelligence systems integrated with educational databases, ensuring their continuous updating to enhance student performance.

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