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Knowledge, Attitude and Perception toward Chatgpt among University Students

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Abstract

The incorporation of artificial intelligence (AI) technologies, such as ChatGPT, has gained significant traction in education, reshaping interactions between students and technology. This study explores the Knowledge, Attitude, and Perception (KAP) of undergraduate students) toward ChatGPT. Employing a quantitative approach, data were collected from 380 undergraduate students through a structured survey. The findings reveal a high level of knowledge, positive attitudes, and favorable perceptions among students, indicating significant potential for ChatGPT's integration into academic settings. However, concerns about ethical usage, digital equity, and over-reliance on AI highlight areas requiring careful intervention. This study provides valuable insights for educators, policymakers, and developers to optimize ChatGPT's role in education.

Keywords: Artificial Intelligence, ChatGPT, Knowledge, Attitude, Perception, Higher Education

Introduction

The integration of artificial intelligence (AI) and natural language processing (NLP) technologies, such as ChatGPT, has transformed human-machine interactions across various industries, including customer service, healthcare, and education. Despite its growing popularity, limited research exists on how specific demographic groups, particularly undergraduate students, perceive and interact with ChatGPT (Bonsu & Baffour-Koduah, 2023). Understanding the knowledge, attitudes, and perceptions (KAP) of this group is crucial, as it sheds light on the acceptance of AI technologies in educational contexts and their potential to support learning objectives (Adıgüzel et al., 2023). Furthermore, examining students' perspectives offers valuable insights into the implications of integrating AI-powered chatbots like ChatGPT into curricula and student support services (Bozkurt et al., 2021). The widespread use of ChatGPT in academic settings raises significant concerns regarding its impact on students' learning and academic integrity. A primary issue is the facilitation of plagiarism, where students may misuse ChatGPT to generate unoriginal content without proper attribution, undermining the value of academic work and compromising integrity (Tlili et al., 2023). Additionally, over-

reliance on ChatGPT can hinder the development of critical academic skills, such as independent research, information synthesis, and effective writing, which are essential for long-term academic and professional success (Sun & Hoelscher, 2023). Another concern is the susceptibility of ChatGPT to biases and misinformation, which may challenge students' critical thinking abilities. Students may struggle to critically evaluate the content produced by AI, leading to a reliance on unreliable sources in their academic work. Research by Qawqzeh (2023) highlights mixed perceptions of ChatGPT's impact on critical thinking skills, with some students reporting minimal improvement, while others acknowledge a more moderate or significant enhancement. This variability suggests a gap in students' ability to discern the quality of information provided by AI, which could ultimately hinder their learning outcomes. Furthermore, unequal access to advanced technologies like ChatGPT raises equity issues, as students from less privileged or less technologically adept backgrounds may face disadvantages, thereby exacerbating disparities in educational experiences (Altamimi, 2024). These concerns underline the need for careful consideration of ChatGPT's role within academic frameworks to ensure it supports, rather than undermines, students' learning outcomes and equity. The purpose of this research is to explore university students' perspectives on the use of ChatGPT by addressing three key objectives. The first objective is to assess the level of knowledge among university students on the use of ChatGPT and the second objective is to examine the attitude of university students on the use of ChatGPT. Finally, the third objective is to analyze the perception of university students on the use of ChatGPT.

Studying the knowledge, attitude, and perception toward ChatGPT among university students is crucial, given the rapid integration of artificial intelligence into educational contexts. This area warrants exploration as students increasingly rely on AI tools for learning and research, impacting academic integrity, skill development, and critical thinking. Understanding students' perspectives helps educators and policymakers effectively incorporate ChatGPT into curricula, ensuring its ethical use and maximizing educational benefits. This research primarily benefits university educators, administrators, and students themselves by identifying gaps in awareness, addressing misconceptions, promoting responsible usage, and preparing students for future professional environments heavily influenced by AI technologies.

Literature Review

ChatGPT is a language model designed to simulate human conversation by analyzing and generating text based on language patterns and context. Leveraging its GPT-3.5 architecture, ChatGPT has been applied in various fields, including education, healthcare, and research, showcasing its versatility (Gravina, 2024; Sütcüoğlu, 2023). In education, ChatGPT has been recognized for enhancing student productivity, fostering communication, and assisting with diverse learning tasks (Fauzi et al., 2023). However, concerns about reliability and allegations of plagiarism underscore the importance of ethical supervision in its use (Prokhorova, 2024). While students acknowledge its potential to improve learning and provide quick information access, criticisms regarding its consistency and dependability highlight the need for further evaluation, particularly in critical fields like healthcare and education (Lu et al., 2023; Sallam, 2023).

KAP theory explains behaviour change through three processes: knowledge acquisition, attitude formation, and behaviour/practice development. The theory suggests that increased knowledge leads to positive attitudes and, ultimately, changes in practice (Chen et al., 2022; Maqsood et al., 2021). Knowledge serves as the foundation for behavioural change, while attitudes drive the adoption of new behaviours (Aljasim, 2024). KAP theory has been successfully applied in various fields, such as healthcare and public health crises, including the COVID-19 pandemic, to promote behaviours like treatment compliance and adherence to control measures (Mao et al., 2024; Zhong et al., 2020). In the context of ChatGPT usage among university students, KAP theory can assess students' knowledge, attitudes, and practices regarding the tool, providing insights to improve its integration in academic settings. Previous KAP studies in Malaysia, like the one on haze awareness among secondary school students (Rahman & Bahari, 2020), demonstrate the effectiveness of the model in understanding public health behaviors. However, there is a gap in the application of KAP theory to AI tools, particularly in higher education. This study aims to fill this gap by exploring how university students perceive and utilize ChatGPT, contributing to digital literacy and the potential for AI integration in academia.

A hypothesis is a proposed explanation that establishes a logical relationship between two or more variables, expressed as a evaluated statement (Sekaran, 2003). This study will formulate three hypotheses to explore and analyse the correlations between the identified variables.

H1: There is a significant level of knowledge among university students on the use of ChatGPT.
H2: There is a significant level of attitude among university students on the use of ChatGPT.
H3: There is a significant level of perception among university students on the use of ChatGPT.

Research Methodology

Based on Taylor (2023), simple random sampling involves the unbiased selection of participants from the entire population, making it a straightforward and effective method for obtaining representative samples and ensuring impartial research outcomes. This study adopts a random sampling approach to guarantee that all undergraduate students at university have an equal opportunity to participate as respondents. The target population consists of 16,425 university undergraduate students. Utilizing a 95% confidence level and a 5% margin of error, the sample size is calculated using the Raosoft table, resulting in a required sample of 376 students. Primary data for this study was collected from target respondents through a quantitative approach using a questionnaire as the measurement instrument. The questionnaire, designed to ensure validity and reliability, was distributed via Google Forms. It comprised several sections: Part A focused on demographic information, while Parts B, C, D, and E utilized a Likert scale to assess respondents' levels of agreement or disagreement with various statements. A 5-point Likert scale was employed, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). The detailed structure of the questionnaire is outlined below:

Table 1
Structure of the Questionnaire

Section	Aspect	Type of Scale	Total Questions
A	Demographic question	Multiple-choice question	6
B	Knowledge	Likert Scale	5
C	Attitude	Likert Scale	9
D	Perception	Likert Scale	4
E	The Use of ChatGPT	Likert Scale	5
		Total Questions	**29**

Once accurate and reliable data is collected using appropriate methods, the next step involves extracting meaningful and relevant information for analysis and interpretation. As noted by Ibrahim (2015), this process, known as data analysis, entails performing calculations and evaluations to uncover insights from the data. In this study, the findings were quantitatively analyzed using descriptive statistical methods. Statistical tools such as frequencies, means (M), and standard deviations (STD) were employed for descriptive analysis, utilizing SPSS software version 27.0. This study employs descriptive analysis to evaluate the use of ChatGPT among university students, focusing on knowledge, attitudes, and perceptions as derived from the responses of targeted participants. This research adopts a cross-sectional design to gather data across all variables.

Results

The questionnaires were distributed through Google Form since the researchers aimed to ensure easy accessibility and convenience for participants. As mentioned in chapter 3, the minimum number of respondents are 376. However, 380 are collected from the target respondents in university. Among the respondents are 52.4% males and 47.6% female.

Descriptive Analysis

This study used descriptive analysis to summarize data on the use of ChatGPT, knowledge, attitude, and perception. Table 2 presents the descriptive statistics. The overall mean scores ranged from 4.4658 to 4.4853, with attitude having the highest mean (4.4853) and the use of ChatGPT the lowest (4.4658). Regarding standard deviation, the use of ChatGPT scored the highest (0.60572), while perception scored the lowest (0.56454). Attitude (0.59416) and knowledge (0.59022) followed.

Table 2
Descriptive Analysis

Variables	Mean	Std. Variation	Minimum	Maximum
Knowledge (K)	4.4742	0.59022	2.00	5.00
Attitude (A)	4.4853	0.59416	1.60	5.00
Perception (P)	4.4795	0.56454	2.22	5.00
The Use of ChatGPT (UC)	4.4658	0.60572	2.25	5.00

Normality Analysis

In the normality analysis, skewness and kurtosis are used to evaluate the normality of the distribution of the data. Table 3 shows the skewness and kurtosis of each variable of the study. Skewness and kurtosis must be within the range of -2 to +2 for the data to be considered normally distributed. Since all the variables were in the acceptable range with the p-value between -1.341 and -1.034 for skewness and between 0.665 and 2.031 for kurtosis, it is concluded that the data obtained in this study was considered normally distributed.

Table 3
Normality Analysis

Variables	Skewness	Kurtosis
Knowledge (K)	-1.190	1.233
Attitude (A)	-1.341	2.031
Perception (P)	-1.034	0.665
The Use of ChatGPT (UC)	-1.134	0.810

Reliability Analysis

According to Borgers et al., (2017), the general rule of thumb stated that the value for Cronbach's alpha amount 0.70 and above is good. Table 6.0 shows the Cronbach's Alpha values for all variables ranging from 0.764 to 0.871, while the Cronbach's Alpha value for overall variables is 0.947. Since the Cronbach's Alpha value of all variables and overall variables exceed 0.7 and higher, it is considered that the result was acceptable, and the study was reliable.

Pearson Correlation Analysis

Pearson correlation analysis was used to evaluate the relation and the strength between the dependent variable which is the use of ChatGPT and the independent variables which knowledge, attitude and perception. Table 7.0 shows the Pearson correlation analysis for all variables. Based on the table below, all variables are positively related to each other. The attitude variable is greater than 0.7 which is 0.843 and this means that it has a strong positive correlation with the use of ChatGPT. This means that it has a strong correlation with the use of ChatGPT.

Discussions

Objective 1 aimed to measure how much university students know about ChatGPT, the findings show that students have a good level of knowledge, with an average score of 4.47. This means most students are familiar with ChatGPT's basic functions. The Pearson correlation analysis showed a strong link between knowledge and ChatGPT usage ($r = 0.822$, $p < 0.001$). This means the more students know about ChatGPT, the more likely they are to use it. The multiple regression analysis also confirmed that knowledge has a big impact on how students use ChatGPT ($\beta = 0.328$, $p < 0.001$). However, some students still lack deeper knowledge, such as how to use ChatGPT effectively for advanced academic tasks. This matches earlier studies like Wood et al. (2021), which found similar gaps in AI understanding. To address this, universities could introduce programs to teach students how to fully use ChatGPT. While Objective 2 focused on examining the attitude of university students toward ChatGPT, the results revealed the highest mean score of 4.48, reflecting an overall positive outlook. Students valued ChatGPT's ability to simplify academic tasks, enhance creativity, and provide immediate assistance. Pearson correlation analysis revealed that attitude had the strongest relationship with the use of ChatGPT ($r = 0.843$, $p < 0.001$), further supported by multiple regression analysis ($\beta = 0.353$, $p < 0.001$). This indicates that students' attitudes significantly influence their willingness to engage with ChatGPT. However, ethical concerns, such as the potential for plagiarism and over-reliance on ChatGPT, were highlighted, consistent with Kamoun et al. (2023). Addressing these concerns through ethical guidelines and AI literacy programs is crucial to maintaining academic integrity while leveraging ChatGPT's benefits. Objective 3 analyzed students' perceptions of ChatGPT, findings showed a mean score of 4.47, emphasizing its perceived usefulness and ease of use. Many students appreciated ChatGPT's ability to provide quick and relevant academic support, aligning with Thorp's (2023) observations about AI's user-friendly interfaces. Pearson correlation analysis demonstrated a strong relationship between perception and the use of ChatGPT ($r = 0.815$, $p < 0.001$), and regression analysis confirmed its significant impact ($\beta = 0.255$, $p < 0.001$). However, disparities in access and digital literacy remain barriers, as noted by Altamimi (2024). These disparities underscore the need for institutional support to ensure equitable access to technology and resources for all students, particularly those from non-tech-savvy backgrounds.

Conclusion

The study established that university students exhibit a high level of knowledge, positive attitudes, and favorable perceptions toward ChatGPT, with significant implications for its integration into academic settings. While the study faced certain limitations, its findings contribute valuable insights to the discourse on AI in education. By addressing ethical concerns, bridging knowledge gaps, and ensuring equitable access, ChatGPT can be effectively integrated into learning environments, paving the way for innovative educational experiences. This research not only enhances understanding of AI adoption in higher education but also serves as a foundation for future studies to explore the broader impacts of AI on education and society.

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