

# **AWARENESS AND USE OF CHATGPT AS A CO-PILOT FOR RESEARCH PURPOSES AMONG UNDERGRADUATE STUDENTS IN TERTIARY INSTITUTIONS IN KOGI STATE**

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## **Abstract**

This study aims to reveal the use of ChatGPT by students in education for research. Therefore, the study was designed and conducted using a quantitative research method. Data were collected using a questionnaire. The emergence of Artificial Intelligence (AI), known as ChatGPT, has reshaped the Nigerian educational system. The presence of a co-pilot, especially among the students, cannot be overemphasized. This study investigates the awareness and utilization of ChatGPT as a co-pilot among undergraduate students in tertiary institutions in Kogi State. This article presents the results of an exploratory research on the best practices of using artificial intelligence (AI) for research purposes. A total of 450 undergraduate students were selected from tertiary institutions in Kogi State. Data collection was conducted using a 4-point Likert scale questionnaire with multiple-choice options. The findings show that ChatGPT is widely recognized among undergraduates in Kogi State. However, the level of awareness needed for responsible adoption in academic settings is still emerging and requires targeted digital literacy interventions. The study also revealed that undergraduates in Kogi State moderately use ChatGPT, with usage driven more by convenience and efficiency than by deep integration into rigorous academic research practices. Furthermore, there is a need for structured guidance on integrating AI into academic research to ensure that students maximize its benefits while mitigating risks to integrity and independent learning. The implications of these findings were presented, and the study recommends that institutions should integrate AI and digital literacy workshops into their academic

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programs to enhance students' critical awareness of ChatGPT, especially for research purposes.

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## Introduction

John McCarthy first used AI at a workshop held at Dartmouth College in 1956 (Arslan, 2020; Coşkun & Gülleroğlu, 2021). The growth of artificial intelligence (AI) technologies, such as ChatGPT, has opened new possibilities in education, especially for academic research purposes. ChatGPT, an advanced language model developed by OpenAI, has demonstrated the potential to assist students in various aspects of academic work, including research. Technology has become an integral part of our lives (Rokan & Monang, 2023) (Simeone et al., 2022), including education (Anderson, 2016; Andre et al., 2015; Jobirovich, 2022). Recently (Urbina et al., 2022; Romero-Martin et al., 2022; Khosravi et al., 2022). The integration of AI and machine learning (ML) has become increasingly relevant in various fields (Lee & Hwang, 2022). However, ChatGPT's responses are sometimes unreliable, with errors detected, as such intelligent answering machines can produce reasonable results but are incorrect or illogical (Amaro et al., 2023; Fitria, 2023). Therefore, it is vital to explore whether students are aware of the limitations of AI technology and use it to enhance their research productivity. It can help in literature review, data analysis, research idea generation, and academic support. However, the degree of awareness and use of ChatGPT as a research tool among undergraduate students, particularly in tertiary institutions in Kogi State, Nigeria, remains underexplored. This study aims to investigate the awareness and usage of ChatGPT as a co-pilot among undergraduate students in these institutions. Therefore, it is vital to explore whether students are aware of the benefits and limitations of AI technology. Therefore, this study investigates the awareness and use of ChatGPT as a co-pilot for research purposes among undergraduate students in tertiary institutions in Kogi State.

## Statement of the Problem

The improvement of student engagement, personalized learning experiences, and academic performance in tertiary education in Kogi State. Traditional teaching methods may not always meet the diverse needs of students. AI tools, such as ChatGPT, have the potential to address these challenges, especially for research. However, the lack of empirical research on the integration of such tools in the educational landscape of Kogi State presents a gap in understanding their potential and limitations. Using AI can help students conduct good research. Despite the availability of innovative AI tools, such as ChatGPT, many students in tertiary institutions in Kogi State may not fully utilize them due to low awareness, technological barriers, or a lack of understanding of how these tools can assist in academic research purposes. This study seeks to bridge this knowledge gap by exploring how aware and actively undergraduate students in Kogi State use ChatGPT for academic research purposes. By identifying the factors influencing the awareness and usage of ChatGPT, this study aims to provide insights into improving its adoption as a research tool.

## Objectives of the Study

The primary objectives of this study are as follows:

1. Assessed the awareness level of ChatGPT among tertiary undergraduate students in Kogi State.
2. Evaluated the extent to which undergraduate students in Kogi State used ChatGPT for research purposes.
3. Investigated the factors influencing the use and non-use of ChatGPT among undergraduate students.
4. Examined the benefits and challenges faced by undergraduate students in using ChatGPT for research purposes.
5. Investigated the influence of students' demographics on awareness of ChatGPT among Undergraduate students in institutions in Kogi State.

6. Examined the influence of student demographics on the use of ChatGPT as a co-pilot for research among undergraduate students in tertiary institutions in Kogi State.

### **Research Questions**

1. What is the level of awareness of ChatGPT among tertiary undergraduate students in Kogi State?
2. To what extent do undergraduate students in Kogi State use ChatGPT for research purposes?
3. What are the factors influencing the use or non-use of ChatGPT for research among undergraduate students in Kogi State?
4. What are the perceived benefits and challenges of using ChatGPT for research among undergraduate students in Kogi State?

### **Research Hypotheses**

- H<sub>1</sub>:** Demography does not influence awareness of ChatGPT among undergraduate students in tertiary institutions in Kogi State.
- H<sub>2</sub>:** Demographic characteristics of students do not influence the use of ChatGPT as a co-pilot for Research purposes among undergraduate students in tertiary institutions in Kogi.

### **Literature Review**

#### **What is ChatGPT?**

ChatGPT is an Artificial Intelligence application developed by the OpenAI company based on Chatbot technology and applied text generation tools, such as ChatGPT and GPT-3 (Fitria, 2023). In the rapid innovation of AI, Chatbot is built as “robots” that can “chat” with humans and facilitate human life. According to Dharani et al. (2020), Chatbot is an intelligent system that uses natural language processing (NLP) to perform conversations by text or voice. By comparing the user input requirements to the chatbot database, if both match, the chatbot will return the proper output to the user. The chatbot will provide some suggestions based on related data if the user's entry does not match its data. With this framework, a chatbot can answer any human questions. Moreover, Wei et al. (2018) found that users can communicate with computers as human conversations due to eight abilities: (1) self-consciousness, (2) humor, (3) purity, (4) IQ, (5) EQ, (6) memory, (7) self-learning, and (8) charisma. Therefore, Chatbot has been implemented as an assistance tool, such as Google on the Internet and Siri on Apple smartphones, in many fields.

ChatGPT, OpenAI's newest chatbot system based on the GPT model, has recently become a hot topic in the field of artificial intelligence (AI) due to its fast and worldwide increase in popularity since it was released for free in November 2022 (Kalyan, 2024). ‘GPT’ is a type of deep learning AI, specialized in large language models (LLMs), also developed by OpenAI, and stands for ‘Generative Pre-Trained Transformer,’ which means this chatbot was pre-trained on a substantial amount of data and analyzes the words in the prompt given to it to generate a customized human-like written text (Kalyan, 2024).

#### **Advantages of ChatGPT for Research Purposes**

Bozkurt (2023) states that by the ability to respond and solve difficult issues, ChatGPT has been applied in many fields, especially in education. Wang (2023) explored the potential effect of ChatGPT on academia and libraries. This study found that learners use ChatGPT in four ways to improve their research. The first method is literature review assistance. ChatGPT can summarize articles and provide a list of related studies using keywords or topics. The second method is text generation, which means that ChatGPT can generate writing in natural language, giving learners samples, ideas, and formats to write their own research. The third method is data analysis, which means

that learners can find the text data that was analyzed in large numbers, such as a country's population and cars in a particular city. The fourth method is language translation, which means that learners can use ChatGPT as a translator to comprehend sources in multiple languages.

### **Awareness of ChatGPT for research purposes**

The integration of AI tools such as ChatGPT in educational settings has garnered global attention. Studies by Javaid et al. (2023) and Liu et al. (2022) have highlighted the positive impact of AI on student engagement, ML, and content delivery. Smith and Wang (2021) found that AI-based tutoring systems, such as ChatGPT, can provide tailored feedback and assist students in various subjects. Similarly, Anderson et al. (2021) opined that AI can augment teaching effectiveness by providing instructors with administrative tasks and interactive learning resources to students. However, the challenges of integrating such tools, including technological limitations, resistance to change, and ethical concerns about the role of AI in education, must also be considered. Miller and Taylor (2023) emphasized the need for further studies on the barriers to AI implementation in developing regions, such as Sub-Saharan Africa, including infrastructural challenges and the digital divide. Research (Dempere et al., 2023; Firaina & Sulisworo, 2023; Grassini, 2023; Javaid et al., 2023; Memarian & Doleck, 2023; Tlili et al., 2023) shows that ChatGPT can be beneficial for both students and teachers because it can serve as a great tool to optimize repetitive and time-consuming tasks, such as technical writing, summarizing, checking for spelling and grammar, translating, and creating and correcting tests. It can also help overcome the well-known 'writer's block,' i.e., the temporary lack of new ideas and motivation that can hinder the creation process. Students can also benefit from its user-friendly interface and use it to learn how to write any type of text, receive feedback on their productions, and ask for online materials to deepen their knowledge (Shaikh et al., 2023; Strzelecki, 2023). In addition, ChatGPT enhances the motivation of students to engage in learning (Hmoud et al., 2024; Mai et al., 2024; Yilmaz & Yilmaz, 2023b). More specifically, Hmoud et al. (2024) reported that the implementation of ChatGPT positively affects students' task motivation in five core categories: task enjoyment, reported effort, result assessment, perceived relevance, and interaction. ChatGPT also serves as an effective tool for students.

### **Utilization of ChatGPT**

The integration of AI tools such as ChatGPT in educational settings has garnered global attention. Studies by Johnson et al. (2020) and Liu et al. (2022) have highlighted the positive impact of AI on student engagement, ML, and content delivery. Smith and Wang (2021) found that AI-based tutoring systems, such as ChatGPT, can provide tailored feedback and assist students in various subjects. Similarly, Anderson et al. (2021) opined that AI can augment teaching effectiveness by providing instructors with administrative tasks and interactive learning resources to students. However, the challenges of integrating such tools, including technological limitations, resistance to change, and ethical concerns about the role of AI in education, must also be considered. This study aimed to investigate the awareness of ChatGPT among undergraduate students. The specific research objective is to investigate the awareness and usage of ChatGPT for research and how it has affected learning habits, both academically and technologically.

### **Methodology**

This study adopted a quantitative research design anchored in a descriptive survey framework to investigate the awareness and use of ChatGPT by undergraduate students as a co-pilot for research in tertiary institutions across Kogi State, Nigeria. The descriptive survey was appropriate because it enabled the systematic collection of standardized, quantifiable data from a relatively large population, thereby facilitating the identification of usage

patterns and comparisons across demographic variables such as gender, academic level, discipline, and university type. This design provided a robust basis for analyzing emerging trends in students' engagement with generative AI tools in academic contexts.

The study population comprised all tertiary institutions in Kogi State, with government-owned universities purposively identified as the target population to ensure both geographical coverage and disciplinary diversity. To capture the heterogeneity of the educational landscape, federal and state universities were included. A sample of 450 undergraduate students was drawn from this population using non-probability methods, specifically convenience and voluntary response sampling. This strategy was deemed appropriate given the research's exploratory orientation, the practical need for accessibility within limited time and resources, and the absence of a comprehensive sampling frame of undergraduates across the state. Although this approach constrains statistical generalizability, it remains analytically valuable in yielding context-specific insights into awareness, extent of use, influencing factors, and the perceived benefits and challenges of ChatGPT adoption in research practices.

### **Research Instrument**

In this study, data were collected through an online survey titled "Awareness and Utilization of ChatGPT as a Co-pilot for Research Purposes among Undergraduate Students in Tertiary Institutions in Kogi State." The instrument comprised five sections. Section A captured demographic information; Section B assessed students' awareness of ChatGPT using a four-point Likert scale (Very Aware, Aware, Slightly Aware, and Not Aware); Section C examined the extent of ChatGPT use for research purposes, rated on a four-point Likert scale ranging from Strongly Agree (SA) to Strongly Disagree (SD); Section D investigated factors influencing the use or non-use of ChatGPT, while Section E explored the benefits and challenges of its utilization; both sections were rated on the same four-point Likert scale.

The instrument underwent face and content validation to ensure validity. The study was first reviewed by the researcher's colleague and subsequently assessed by three experts in educational technology, who evaluated the clarity, language, scope, and relevance of the items to the research objectives. Then, the instrument was refined based on their feedback. A pilot test was conducted with 20 undergraduate students from a public university in Kwara State, Nigeria, who were not part of the main study, following validation. The responses were analyzed using Cronbach's alpha at a significance level of 0.05 to determine internal consistency.

### **Data Collection and Analysis**

Prior to data collection, the relevant university authorities in Kogi State provided formal approval. The research instrument was hosted on Google Forms and disseminated through 15 official faculty WhatsApp groups across the selected universities. Each message contained a clear invitation to participate, along with information on the study's purpose and scope. Research assistants were engaged in each institution to enhance participation and provide on-demand technical assistance to facilitate direct engagement with the survey platform. Ethical considerations were rigorously observed in accordance with the standards of the Research Ethics Board. All participants provided informed consent, with assurances of confidentiality and voluntary participation before, during, and after data collection. The researcher emphasized the participants' right to withdraw without penalty, safeguarded sensitive information, and ensured measures to mitigate possible technostress during survey administration.

Data analysis employed a quantitative analytical strategy. Descriptive statistics, including frequency distributions, percentages, and mean scores, were used to address the research questions. Multiple regression analysis was conducted at the 0.05 level of significance using the Statistical Package for the Social Sciences (SPSS) version

28.0 to test the hypotheses. This analytical approach enabled a rigorous examination of the relationships between demographic variables, ChatGPT awareness, and ChatGPT usage while ensuring that the results were statistically robust and aligned with the study objectives.

## Results

The results of the collected data were analyzed to answer the research questions of the study and the formulated hypotheses were tested at a 0.05 level of significance. The results are presented in tables and subsequently interpreted.

**Research Question One:** What is the awareness level of ChatGPT among undergraduate students in tertiary institutions in Kogi State?

**Table 1:** Awareness of the ChatGPT

| S/N                    | Statement                                                                                                 | Very Aware<br>Freq. (%) | Aware<br>Freq. (%) | Slightly<br>Aware<br>Freq. (%) | Not Aware<br>Freq. (%) |
|------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------|--------------------|--------------------------------|------------------------|
| 1.                     | I am aware that ChatGPT is an artificial intelligence tool developed for generating human-like responses. | 270 (60%)               | 10 (2.2)           | 161 (35.8)                     | 9 (2.0)                |
| 2.                     | I am aware that ChatGPT can be used for academic and research purposes.                                   | 269 (59.8)              | 12 (2.7)           | 160 (35.6)                     | 9 (2.0)                |
| 3.                     | I am familiar with the features and functions of ChatGPT.                                                 | 194 (43.1)              | 38 (8.4)           | 197 (43.8)                     | 21 (4.7)               |
| 4.                     | I am aware of different ways to access ChatGPT (e.g., website and mobile app).                            | 192 (42.7)              | 54 (12.0)          | 176 (39.1)                     | 28 (6.2)               |
| 5.                     | I am aware of the potential limitations and risks associated with using ChatGPT for research.             | 145 (32.2)              | 62 (13.8)          | 182 (40.4)                     | 61 (13.6)              |
| 6.                     | I am aware that ChatGPT can be used to assist in the writing and editing of academic work.                | 220 (48.9)              | 18 (4.0)           | 197 (43.8)                     | 15 (3.3)               |
| 7.                     | I am aware that ChatGPT can be used to explain complex academic concepts.                                 | 207 (46.0)              | 34 (7.6)           | 190 (42.2)                     | 19 (4.2)               |
| <b>Overall Average</b> |                                                                                                           | <b>47.53</b>            | <b>7.24</b>        | <b>40.10</b>                   | <b>5.14</b>            |

Table 1 shows that undergraduate students in Kogi State tertiary institutions demonstrate a moderate-to-high level of awareness of ChatGPT, although this awareness varies across different dimensions. The majority of students reported being very aware of ChatGPT as an AI tool (60%) and its use in academic and research purposes (59.8%),



indicating a strong recognition of its general utility and role in supporting academic work. Similarly, nearly half (48.9%) acknowledged its application in writing/editing and simplifying complex concepts (46.0%). However, awareness drops significantly regarding familiarity with ChatGPT's features (43.1%), ways of access (42.7%), and limitations and risks (32.2%). This pattern suggests that while students broadly recognize the existence and primary functions of ChatGPT, their depth of understanding and critical awareness of its operations remain limited.

The overall averages reinforce this mixed picture: 47.5% of students are very aware, 7.2% are aware, and 40.1% are only slightly aware, with 5.1% not aware at all. The high proportion of "slightly aware" responses implies a superficial understanding. Students may have heard of ChatGPT but lack deeper knowledge about how to use it effectively and responsibly. The low awareness of limitations (32.2% very aware) is particularly concerning, as it suggests that students may rely on ChatGPT without adequately recognizing potential biases, inaccuracies, or ethical issues in its use. In summary, ChatGPT is widely recognized among undergraduates in Kogi State. However, the level of awareness needed for responsible adoption in academic settings is still emerging and requires targeted digital literacy interventions.

**Research Question Two:** To what extent do undergraduate students in Kogi State use ChatGPT for research?

**Table 2:** Use of ChatGPT for Research Purposes

| S/N                 | Statement                                                                  | Mean        |
|---------------------|----------------------------------------------------------------------------|-------------|
| 1.                  | I regularly use ChatGPT to search for academic information.                | 3.24        |
| 2.                  | ChatGPT is used to generate ideas for my research work.                    | 3.24        |
| 3.                  | I rely on ChatGPT to summarize academic articles and journals.             | 2.91        |
| 4.                  | I use ChatGPT to help draft research proposals.                            | 3.08        |
| 5.                  | I consult ChatGPT when I encounter challenges during my research.          | 3.18        |
| 6.                  | I use ChatGPT more frequently than other academic resources.               | 2.99        |
| 7.                  | I use ChatGPT for fact-checking and verifying information for my research. | 3.13        |
| 8.                  | I use ChatGPT because it is easy to use and access.                        | 3.31        |
| 9.                  | I use ChatGPT because it saves time during research.                       | 3.26        |
| 10.                 | I use ChatGPT because it provides quick and relevant answers.              | 3.26        |
| <b>Average Mean</b> |                                                                            | <b>3.16</b> |

Table 2 indicates that undergraduate students in Kogi State moderately use ChatGPT for research purposes to a moderate extent, with an overall mean score of 3.16 on a 4-point scale. The highest utilization is linked to ChatGPT's ease of access (mean = 3.31) and its ability to provide quick and relevant answers (3.26), as well as time-saving advantages (3.26). These findings highlight that convenience and efficiency are the strongest motivators for students' use of ChatGPT in academic contexts. Similarly, the tool is fairly integrated into research-related tasks, such as idea generation (3.24), searching for academic information (3.24), and seeking help during research challenges (3.18). This suggests that students are not only aware of ChatGPT but also actively apply it to core aspects of the research process, particularly in the early and exploratory stages. However, a critical analysis revealed that students' reliance on ChatGPT for higher-order academic tasks was less pronounced.

For instance, its use for summarizing academic journals (2.91) and substituting other online academic resources (2.99) remains below the overall mean. This indicates a tendency to use ChatGPT more as a supplementary tool than as a primary research resource. Furthermore, while students appear to value ChatGPT's immediacy and accessibility, their lower reliance on it for in-depth engagement with scholarly materials raises concerns about

overdependence on surface-level outputs rather than critical analysis of academic literature. Taken together, the findings suggest that undergraduates in Kogi State moderately use ChatGPT, with usage driven more by convenience and efficiency than by deep integration into rigorous academic research practices.

**Research Question Three:** What factors influence the use or non-use of ChatGPT among undergraduate students in Kogi State?

**Table 3:** Factors influencing the use or non-use of ChatGPT for research purposes

| S/N                 | Statement                                                                 | Mean        |
|---------------------|---------------------------------------------------------------------------|-------------|
| 1.                  | I avoid ChatGPT because I doubt its information accuracy.                 | 2.63        |
| 2.                  | I avoid using ChatGPT because it sometimes provides outdated information. | 2.69        |
| 3.                  | I avoid using ChatGPT because my lecturers discourage its use.            | 2.60        |
| 4.                  | My peers/classmates influenced my decision to use ChatGPT.                | 2.80        |
| <b>Average Mean</b> |                                                                           | <b>2.68</b> |

Table 3 shows that the factors influencing the use or non-use of ChatGPT among undergraduates in Kogi State revolve around concerns about credibility, relevance of information, and social influences. The average mean of 2.68 indicates a moderate overall influence. Students expressed the greatest influence from peers/classmates (mean = 2.80), suggesting that social networks and peer recommendations play a critical role in shaping attitudes toward ChatGPT adoption. This aligns with the diffusion of innovation theory, where peer acceptance often facilitates the adoption of new technologies. Conversely, avoidance factors such as outdated information (2.69), doubts about accuracy (2.63), and discouragement from lecturers (2.60) highlight persistent skepticism about ChatGPT's reliability in academic research contexts.

Critically, the relatively lower means for lecturer discouragement and accuracy concerns suggest that these issues are not the strongest deterrents. Instead, students appear to be more influenced by peers than by institutional authority or the technical flaws of the tool. This reflects tension between institutional norms, which remain cautious, and peer-driven adoption, which normalizes usage despite risks. The moderate scores imply that these barriers are not absolute; students may still use ChatGPT selectively, balancing its perceived benefits with its limitations. Therefore, the interplay of social influence, credibility concerns, and academic guidance collectively shapes the extent to which ChatGPT is adopted or avoided, highlighting the need for structured awareness and policy frameworks in tertiary institutions.

**Research Question Four:** What are the perceived benefits and challenges of using ChatGPT among undergraduate students in Kogi State?

**Table 4:** Perceived benefits and challenges of using ChatGPT for research purposes

| S/N | Statement                                                            | Mean |
|-----|----------------------------------------------------------------------|------|
| 1.  | ChatGPT helps me improve my academic writing skills.                 | 2.92 |
| 2.  | ChatGPT increases my efficiency in completing research tasks.        | 2.92 |
| 3.  | ChatGPT broadens my knowledge of research topics.                    | 3.15 |
| 4.  | Sometimes, ChatGPT provides misleading or incorrect information.     | 2.79 |
| 5.  | Using ChatGPT can make students over-dependent on technology.        | 2.84 |
| 6.  | ChatGPT limits the development of independent research skills.       | 3.04 |
| 7.  | ChatGPT raises concerns regarding academic integrity and plagiarism. | 2.91 |
| 8.  | ChatGPT helps me improve my academic writing skills.                 | 2.85 |



**Average Mean****2.93**

The results in Table 4 indicate that undergraduate students in Kogi State perceive ChatGPT as both beneficial and challenging in their research processes, with an overall average mean of 2.93. On the benefits side, students particularly recognized its ability to broaden their knowledge on research topics (mean = 3.15), followed by its role in enhancing efficiency in completing research tasks (2.92) and improving academic writing skills (2.92). These findings suggest that ChatGPT is primarily valued for expanding access to information and simplifying academic tasks, making research more approachable and time-efficient for students. Such perceptions align with the growing narrative that artificial intelligence (AI) tools can complement human effort in educational contexts by enhancing productivity and promoting exposure to diverse ideas. However, the challenges are equally significant, with students acknowledging that ChatGPT can limit independent research skills (mean = 3.04) and sometimes provide misleading or incorrect information (2.79).

Concerns about over-dependence on technology (2.84) and academic integrity issues such as plagiarism (2.91) further highlight the risks associated with its use. Critically, these responses suggest that while students appreciate ChatGPT's utility, they remain cautious about its implications for academic rigor and originality. The close range between the means of perceived benefits and challenges reveals a duality: ChatGPT is simultaneously a facilitator and a potential threat to quality scholarship. This tension underscores the need for structured guidance on integrating AI into academic research to ensure that students maximize its benefits while mitigating risks to integrity and independent learning.

**Hypothesis Testing**

The results of the hypotheses tested in this study are presented in the following tables. All hypotheses were tested at a p-value of 0.05.

**Hypothesis One**

**H<sub>1</sub>:** Demographic characteristics of students do not influence the awareness of ChatGPT among undergraduate students in tertiary institutions in Kogi State.

**Table 5:** Multivariate Analysis of the Influence of Students' Demography on ChatGPT Awareness

| Source          | Type III sum of squares | df  | Mean Square | F       | Sig.  | Noncent. Parameter | Observed Power <sup>b</sup> |
|-----------------|-------------------------|-----|-------------|---------|-------|--------------------|-----------------------------|
| Corrected Model | 19.017 <sup>a</sup>     | 4   | 4.754       | 8.566   | <.001 | 34.262             | .999                        |
| Intercept       | 101.865                 | 1   | 101.865     | 183.525 | <.001 | 183.525            | 1.000                       |
| Gender          | .341                    | 1   | .341        | .614    | .434  | .614               | .122                        |
| Academic Level  | 6.314                   | 1   | 6.314       | 11.376  | <.001 | 11.376             | .920                        |
| Faculty         | .008                    | 1   | .008        | .015    | .904  | .015               | .052                        |
| University type | 5.890                   | 1   | 5.890       | 10.611  | .001  | 10.611             | .902                        |
| Error           | 243.666                 | 439 | .555        |         |       |                    |                             |
| Total           | 4183.893                | 444 |             |         |       |                    |                             |
| Corrected Total | 262.683                 | 443 |             |         |       |                    |                             |

a. R Squared = .072 (adjusted R Squared = .064)

b. Computed using alpha = 0.05

The findings from Table 5 critically challenge the alternate hypothesis (H1), which asserts that students' demographics do not influence their awareness of ChatGPT. The multivariate analysis showed a statistically significant model ( $F = 8.566$ ,  $p < .001$ ), demonstrating that demographic factors do play a role in shaping awareness. Specifically, academic level ( $F = 11.376$ ,  $p < .001$ ) and university type ( $F = 10.611$ ,  $p = .001$ ) emerged as significant predictors, suggesting that students' progression through their studies and the type of institution they attend meaningfully affect their exposure to and knowledge of ChatGPT. Conversely, gender ( $F = .614$ ,  $p = .434$ ) and faculty ( $F = .015$ ,  $p = .904$ ) were not statistically significant, implying that awareness is not strongly determined by these variables. This outcome indicates that while some demographic dimensions are influential, their effects are uneven across categories.

A deeper analysis reveals that the explanatory power remains weak, despite the statistical significance of the model, with an  $R^2$  value of only .072. This means that only about 7% of the variance in ChatGPT awareness can be attributed to demographic factors, leaving most variance unexplained. Such a modest effect size underscores the role of other non-demographic factors in shaping students' awareness, such as peer influence, institutional culture, digital literacy, and exposure to technology. Thus, while the alternate hypothesis is rejected because demographics do exert some influence, the overall impact is limited and insufficient to comprehensively explain awareness.

## Hypothesis Two

**H<sub>2</sub>:** Students' demography does not influence the use of ChatGPT as a co-pilot for research among undergraduate students in tertiary institutions in Kogi State.

**Table 6:** Multivariate Analysis of the Influence of Students' Demography on the Utilization of ChatGPT

| Source          | Type III sum of squares | df  | Mean Square | F       | Sig.  | Noncent. Parameter | Observed Power <sup>b</sup> |
|-----------------|-------------------------|-----|-------------|---------|-------|--------------------|-----------------------------|
| Corrected Model | 3.463 <sup>a</sup>      | 4   | .866        | 3.475   | .008  | 13.901             | .860                        |
| Intercept       | 88.521                  | 1   | 88.521      | 355.326 | <.001 | 355.326            | 1.000                       |
| Gender          | 1.079                   | 1   | 1.079       | 4.331   | .038  | 4.331              | .546                        |
| Academic Level  | 1.804                   | 1   | 1.804       | 7.242   | .007  | 7.242              | .766                        |
| Faculty         | .142                    | 1   | .142        | .572    | .450  | .572               | .117                        |
| University type | 1.342                   | 1   | 1.342       | 5.385   | .021  | 5.385              | .639                        |
| Error           | 109.367                 | 439 | .249        |         |       |                    |                             |
| Total           | 4544.077                | 444 |             |         |       |                    |                             |
| Corrected Total | 112.830                 | 443 |             |         |       |                    |                             |

a. R Squared = .031 (adjusted R Squared = .022)

b. Computed using alpha = 0.05

The results in Table 6 provide evidence against the alternate hypothesis, which states that students' demographic characteristics do not influence the use of ChatGPT for research. The corrected model is statistically significant ( $F = 3.475$ ,  $p = .008$ ), indicating that demographic factors collectively influence the extent to which students use ChatGPT as a research co-pilot. Specifically, gender ( $F = 4.331$ ,  $p = .038$ ), academic level ( $F = 7.242$ ,  $p = .007$ ), and university type ( $F = 5.385$ ,  $p = .021$ ) significantly affect usage, indicating that ChatGPT is adopted differently by male and female students, students at different stages of study, and those in different types of universities. In

contrast, faculty ( $F = .572, p = .450$ ) was not significant, suggesting that disciplinary background does not strongly influence usage.

Although the model is statistically significant, its explanatory power is weak, with  $R^2 = .031$  (adjusted  $R^2 = .022$ ). This implies that demographic factors account for only approximately 3% of the variance in utilization, leaving the overwhelming majority of differences explained by other variables. Such findings highlight that while demographics play a role in shaping students' adoption of ChatGPT, their impact is relatively marginal. Nondemographic factors, such as access to digital resources, individual technological self-efficacy, institutional policies, and peer influence, are likely to exert greater influence on usage patterns. Consequently, the alternate hypothesis is rejected, as demographic factors do influence usage, but the effect is modest, indicating the need for broader institutional and behavioral explanations to understand students' engagement with AI tools in research.

## Discussion

With the aim of investigating the Awareness and Utilization of ChatGPT as a Co-pilot for Research Purposes among Undergraduate Students in Tertiary Institutions in Kogi State, this study tested the extent of awareness on the usage of ChatGPT among undergraduates. According to the study outcomes, undergraduate students in Kogi State tertiary institutions demonstrate a moderate-to-high level of awareness of ChatGPT, although this awareness varies across different dimensions. The majority of students (60%) reported being very aware of ChatGPT as an AI tool. This result also indicates the superiority of ChatGPT in overall responsiveness, convenience, and efficiency in providing information for research purposes, which plays a robust role in influencing students' research output. This result agrees with the findings of Kwangawad and Jattamart (2022), who found that ChatGPT has many benefits for learning and research purposes.

The findings of the study on the usage of ChatGPT among undergraduates in Kogi State moderately use it, with usage driven more by convenience and efficiency than by deep integration into rigorous academic research practices. This shows that ChatGPT is more valued as a supplementary tool than as a primary research source, with convenience being the main driver of adoption.

ChatGPT has great potential to accelerate education innovation and promote diversity and equity in research by bridging language barriers. It can be used to generate essays, summarize texts, answer a wider range of queries, translate languages, and correct grammar mistakes (Memarian & Doleck, 2023). The findings align with those of Shidiq (2023), who stated that ChatGPT can also help learners develop their creative writing skills, as it can produce text in various genres and styles, such as inventive, casual, and formal writing. Moreover, ChatGPT can enhance learners' accessibility, interaction, and participation in online learning environments, as it can facilitate asynchronous communication, provide rapid feedback, and enable distant learning (Cotton et al., 2024). This study also examined two hypotheses. The findings revealed that demographic factors, such as academic level and university type, significantly influenced awareness, whereas gender, academic level, and university type influenced use. The faculty did not significantly affect either awareness or use. However, both models explained a very small proportion of variance ( $R^2 = .072$  for awareness;  $R^2 = .031$  for utilization), indicating that non-demographic factors (e.g., peer influence, institutional culture) are more critical.

## Conclusion

This study aimed to investigate the awareness and use of ChatGPT as a Co-pilot for research purposes among undergraduate students in tertiary institutions in Kogi State. The findings are robust in understanding and promoting the use of such AI tools as ChatGPT for research. First, the participants of this study were limited to the Tertiary University in Kogi State. Undergraduate students in Kogi State demonstrate moderate-to-high

awareness of ChatGPT, but with limited understanding of its features and risks. Utilization of ChatGPT for research is moderate, driven mainly by convenience and efficiency rather than deep scholarly engagement. ChatGPT is perceived as both beneficial (improving efficiency and knowledge) and challenging (raising issues of dependence, misinformation, and plagiarism). The findings indicate that the majority of students are aware of the benefits provided by ChatGPT.

### Limitations and Future Research

I have identified some limitations in this study for future research. First, the study is based on quantitative data, which provides opportunities to reach a significant number of participants. However, the use of only a quantitative approach limits the rich information that can be retrieved from the participants in terms of interview and physical usage and their choices of options and their perceptions on the subject matter. Using both quantitative and qualitative approaches to navigate through ChatGPT for research.

### Recommendations

Based on the study, the following recommendations were made:

1. Institutions should integrate AI and DL workshops into their academic programs to enhance students' critical awareness of ChatGPT, especially regarding its risks and limitations.
2. Universities should develop clear policies on the ethical use of Artificial Intelligence (AI) tools in research to address the concerns of plagiarism and academic integrity.
3. Lecturers should guide students on how to responsibly use ChatGPT as a supplementary research tool without replacing independent inquiry and critical analysis.
4. Lecturers should design assignments and assessments that encourage deeper learning engagement with scholarly materials, thereby reducing over-dependence on ChatGPT.

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