

Article

Gender Differences in Awareness and Use of ChatGPT Among Undergraduate E-Library Users at Hensard University, Toru-Orua, Bayelsa State, Nigeria

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Abstract

This study examined gender differences in awareness and use of ChatGPT among undergraduate e-library users at HENSARD University, Toru-Orua, Bayelsa State, Nigeria. A descriptive survey design was adopted. Of a population of 350 undergraduates, 78 students encountered in the e-library were selected through availability-based purposive sampling; 75 valid questionnaires were analyzed (96.2% response rate), comprising 33 males (44.0%) and 42 females (56.0%). Data were collected with a structured questionnaire and analyzed using frequencies, percentages, mean scores, an independent-samples t-test, and Pearson product-moment correlation. Based on the displayed group summary statistics, awareness scores did not differ significantly by gender, $t(73) = -1.28, p = .204$, mean difference = -0.15 , 95% CI $[-0.38, 0.08]$, Cohen's $d = -0.30$. Use scores also did not differ significantly, $t(73) = -0.38, p = .706$, mean difference = -0.05 , 95% CI $[-0.31, 0.21]$, Cohen's $d = -0.09$. Awareness was strongly and positively correlated with use, $r = .72, p < .001$. Students reported high to very high levels of awareness and use, with the five-item use scale producing a grand mean of 4.21 on a five-point scale. The main reported purpose was assignment completion (77.3%). Students also reported very positive perceptions of ChatGPT's ease of use and usefulness. The principal limitations are the small, single-institution sample, availability-based purposive sampling, self-reported data, and the cross-sectional design, which limits generalizability and does not permit causal conclusions.

Keywords: ChatGPT, awareness, use, gender differences, e-library, undergraduate students.

1. Introduction

The rapid development of artificial intelligence (AI) has transformed educational practices and information-seeking behaviours in higher education. ChatGPT, a generative AI tool, can produce human-like text and support activities such as writing, summarization, coding, and research assistance. Its rapid adoption has generated substantial scholarly attention because of its implications for teaching, learning, academic work, and information use.

Electronic libraries (e-libraries) provide access to academic databases, e-books, institutional repositories, and other digital resources. Reliable internet connectivity may facilitate students' access to AI-enabled tools alongside conventional scholarly resources. At HENSARD University,

the e-library provides digital resources and high-speed internet access, and students are observed using ChatGPT in the e-library. However, these observations are anecdotal and do not establish the prevalence, extent, or pattern of use.

2. Statement of the problem

Although ChatGPT is increasingly used in higher education, there is limited empirical evidence on awareness and use among undergraduate e-library users in specific Nigerian university settings. At HENSARD University, informal observations suggest that students use ChatGPT while accessing e-library resources, but the actual level of awareness, extent and frequency of use, purposes of use, and possible gender differences have not been systematically established. Existing studies also provide mixed evidence on gender patterns in AI use, while few studies focus specifically on e-library users in a Nigerian university. The empirical gap addressed by this study is therefore the absence of institution-specific evidence on gender differences in ChatGPT awareness and use, together with the relationship between awareness and use, among undergraduate e-library users at HENSARD University.

Accordingly, the study provides descriptive and inferential evidence on students' awareness, use, purposes, frequency, perceptions, and gender-related patterns of ChatGPT use. The findings are intended to inform library-based AI literacy and responsible-use support.

3. Research Questions

The following research questions guided the study:

- What is the level of awareness of ChatGPT among undergraduate e-library users at HENSARD University?
- What is the extent of use of ChatGPT among undergraduate e-library users at HENSARD University?
- What are the purposes for which undergraduate e-library users utilize ChatGPT?
- What is the frequency of use of ChatGPT among undergraduate e-library users?
- Is there a difference in the level of awareness of ChatGPT between male and female undergraduate e-library users?
- Is there a difference in the extent of use of ChatGPT between male and female undergraduate e-library users?
- What is the relationship between students' awareness and use of ChatGPT among undergraduate e-library users at HENSARD University?

4. Research Hypotheses

The following null hypotheses were formulated:

H₀₁: There is no significant difference in the level of awareness of ChatGPT between male and female undergraduate e-library users at HENSARD University.

H₀₂: There is no significant difference in the extent of use of ChatGPT between male and female undergraduate e-library users at HENSARD University.

H₀₃: There is no significant relationship between students' level of awareness and their use of

5. Literature Review

Research on AI in higher education generally indicates that students' awareness of AI tools is associated with their willingness to use them for academic activities. Awareness in the present study refers to students' knowledge of ChatGPT, its existence, and its possible academic applications. Previous studies have linked awareness and digital literacy with the adoption and academic use of AI tools, including content generation, summarization, research support, and assignment-related tasks (Rahman et al., 2024; Singh & Choudhury, 2024; Santos et al., 2024). Reported use is also

shaped by accessibility, digital learning environments, and the convenience of AI-enabled tools (Patel et al., 2024; Nguyen & Tran, 2024; Dlamini, 2024).

Gender remains a relevant demographic variable in studies of technology adoption, although reported patterns vary by context and task. Research has examined gender differences in technology and e-library use, with findings indicating that gender patterns should be tested within the specific population rather than assumed from evidence obtained elsewhere (Oluwafemi & Lawal, 2024; Williams & Edwards, 2024; Zhou & Li, 2024). The present study therefore treats gender as an empirical comparison variable.

Access to digital infrastructure, including reliable internet connectivity and electronic library resources, can provide practical conditions for students to access AI-enabled tools (Khan et al., 2024; Musa, 2024). Such infrastructure is relevant to the context of the present study, but the cross-sectional design does not test infrastructure as an explanatory or causal variable. Accordingly, the availability of the HENSARD University e-library is treated as study context rather than as a demonstrated cause of ChatGPT adoption.

The Technology Acceptance Model (TAM) identifies perceived usefulness and perceived ease of use as central determinants of technology acceptance (Davis, 1989; Venkatesh & Bala, 2008). In this study, the perception items concerning whether ChatGPT is easy to use and useful are the measures most directly aligned with TAM; confidence in use is treated as an additional perception measure rather than a core TAM construct. Awareness is treated as a separate study variable and not as a standard TAM construct. Empirical studies have also examined perceived usefulness and students' perceptions of AI-based learning tools (Farooq et al., 2024; Basu & Chatterjee, 2024). The precise empirical gap is the lack of institution-specific evidence on gender differences in ChatGPT awareness and use among undergraduate e-library users in a Nigerian university, together with the relationship between awareness and use. The present study addresses this gap using descriptive statistics, gender comparisons, and correlation analysis.

6. Methodology

This study adopted a descriptive survey design to examine gender differences in awareness and use of ChatGPT among undergraduate e-library users at HENSARD University, Toru-Orua, Bayelsa State, Nigeria. The population consisted of 350 undergraduate students. Seventy-eight students encountered in the e-library during the study period were selected using availability-based purposive sampling, and 75 questionnaires were returned and analyzed (96.2% response rate). Because participation was based on availability, the sample may overrepresent students who were present in the e-library during data collection, introducing selection bias and limiting generalizability. The manuscript does not report the exact recruitment dates or explicit eligibility criteria; these details should be added from the field records before publication. Data were collected using a structured questionnaire covering demographic characteristics, awareness, use, frequency, purpose of use, and perceptions of ChatGPT. The instrument was reported as having been validated by experts and pilot-tested, with Cronbach's alpha of 0.78. The source manuscript does not state the number or expertise of validators, the validation procedure, the pilot-sample size, or whether $\alpha = 0.78$ applies to the full questionnaire or to individual scales; these details should be supplied from the study records. Descriptive statistics (frequencies, percentages, and mean scores) were used to

answer the research questions. Independent-samples t-tests were used for gender comparisons, and Pearson product–moment correlation was used to assess the relationship between awareness and use, with $\alpha = .05$. The source manuscript does not report tests of normality, homogeneity of variance, linearity, or outliers; these assumption checks should be verified from the raw data before publication.

7. Results

A total of 75 valid responses were analyzed (response rate = 96.2%). Of these, 42 (56.0%) were female and 33 (44.0%) were male. By academic level, 41 (54.7%) were in 200 level and 34 (45.3%) were in 100 level.

7.1 Awareness of ChatGPT

Awareness of ChatGPT was high. As shown in Table 1, 73 respondents (97.3%) reported that they were aware of ChatGPT, while 2 (2.7%) reported that they were not.

Table 1: Awareness of ChatGPT

Response	Frequency	Percentage (%)
Yes	73	97.3
No	2	2.7

A separate questionnaire item recorded that 100% of respondents recognized that ChatGPT can be used for academic purposes. Because this exceeds the 97.3% who reported awareness of ChatGPT itself, the two items should be checked against the original questionnaire and coding. This item is therefore reported descriptively but is not used to define overall awareness prevalence. The reported awareness sources—friends (30.7%), social media (28.0%), lecturers (22.7%), and internet browsing (20.0%)—sum to 101.4%, indicating that respondents may have been permitted to select more than one source or that the categories require checking; the original manuscript does not specify the response format.

Further analysis of self-rated awareness showed that 74.7% of respondents were in the high or very high categories, including 48.0% in the very high category (Table 2). For the five-point awareness scale, the categories should be interpreted using these cut-offs: 1.00–1.79 = very low, 1.80–2.59 = low, 2.60–3.39 = moderate, 3.40–4.19 = high, and 4.20–5.00 = very high.

Table 2: Level of Awareness

Level	Frequency	Percentage (%)
Very Low	3	4.0
Low	4	5.3
Moderate	12	16.0
High	20	26.7
Very High	36	48.0

These results indicate that awareness was widespread and that most respondents rated their awareness as high or very high.

7.2 Extent of Use

The extent of use was measured using a 5-point Likert scale. For interpretation, 1.00–1.79 = very low, 1.80–2.59 = low, 2.60–3.39 = moderate, 3.40–4.19 = high, and 4.20–5.00 = very high. Mean scores for each item are presented in Table 3.

Table 3: Extent of Use

Item	Mean	Interpretation
Use in e-library	4.59	Very High
Helps complete assignments faster	4.35	Very High
Helps understand difficult topics	3.65	High
Used for research	4.69	Very High
Improves academic performance	3.77	High

Grand Mean = 4.21 (Very High, based on the stated cut-offs)

The five item means average to 4.21, indicating a very high extent of use under the stated cut-offs. The highest item means concern research use (4.69) and use in the e-library (4.59).

7.3 Frequency and Purpose of Use

As shown in Table 4, ChatGPT is used frequently by the majority of respondents.

Table 4: Frequency of Use

Frequency	Frequency	Percentage (%)
Very Often	38	50.7
Often	18	24.0
Occasionally	14	18.7
Rarely	2	2.7
Never	3	4.0

Table 4 shows that 56 respondents (74.7%) reported using ChatGPT often or very often.

Table 5: Purpose of Use

Purpose	Frequency	Percentage (%)
Assignments	58	77.3
Research	12	16.0
Studying	5	6.7
Exam Preparation	0	0

The dominant use of ChatGPT is for assignment completion, suggesting task-oriented utilization.

7.4 Use within the E-Library

A majority of respondents (62.7%) indicated that they use ChatGPT whenever they are in the e-library. This describes use in the setting but does not establish that the e-library environment caused or increased AI adoption.

7.5 Perception of Use

Mean scores for perception items are presented in Table 6.

Table 6: Perception of ChatGPT

Item	Mean	Interpretation
ChatGPT is easy to use	4.77	Very High
ChatGPT is useful	4.53	Very High
Confidence in use	4.73	Very High

The three perception items had very high mean scores. The ease-of-use and usefulness items correspond most directly to the perceived ease of use and perceived usefulness dimensions of TAM; confidence in use is an additional perception measure. The source manuscript does not report a separate reliability coefficient for this perception scale, so no reliability claim is made here.

7.6 Hypotheses Testing

Gender Differences in Awareness and Use

Table 7: Independent-Samples t-Test for Gender Differences

Variable	Group	N	Mean	SD	t	df	p-value
Awareness	Male	33	4.45	0.52	-1.28	73	.204
Awareness	Female	42	4.60	0.49			
Use	Male	33	4.20	0.55	-0.38	73	.706
Use	Female	42	4.25	0.58			

Neither gender comparison was statistically significant at $\alpha = .05$.

Based on the displayed group summary statistics, awareness scores did not differ significantly between male and female students, $t(73) = -1.28$, $p = .204$. The mean difference (male minus female) was -0.15 , with a 95% CI of $[-0.38, 0.08]$ and Cohen's $d = -0.30$. Use scores also did not differ significantly, $t(73) = -0.38$, $p = .706$; the mean difference was -0.05 , 95% CI $[-0.31, 0.21]$, Cohen's $d = -0.09$. These statistics are recalculated from the rounded means, standard deviations, and sample sizes displayed in Table 7; the raw dataset should be used to confirm the exact values before publication.

Relationship between Awareness and Use

Table 8: Pearson Product–Moment Correlation Between Awareness and Use

Variable 1	Variable 2	N	r	p-value	Interpretation
Awareness	Use	75	0.72	<0.001	Strong positive correlation

$r = .72$, $p < .001$: strong positive correlation.

The data indicate a strong positive association between awareness and use; this correlation does not establish that awareness causes adoption.

Discussion

The finding that awareness of ChatGPT was high is consistent with literature describing students' exposure to digital technologies and AI tools as an important condition for awareness and adoption (Rahman et al., 2024; Singh & Choudhury, 2024; Santos et al., 2024). In the present study, 97.3% reported awareness, while 74.7% rated their awareness as high or very high. The study context provides access to a digitally equipped e-library, but the cross-sectional design does not allow the infrastructure to be identified as a cause of awareness.

The high level of reported use is consistent with studies describing students' use of AI tools for academic tasks and the convenience of AI-enabled platforms (Patel et al., 2024; Nguyen & Tran, 2024; Dlamini, 2024). In this study, the five-item use scale had a grand mean of 4.21, with research and e-library use receiving the highest item means. These findings describe use among the respondents and do not demonstrate that internet access or e-library infrastructure caused the reported level of use.

Assignment completion was the dominant reported purpose (77.3%), followed by research (16.0%)

and studying (6.7%). This pattern is consistent with the task-oriented use described in the literature (Adeyemi, 2024; Hassan et al., 2024). At the same time, reliance on AI for assessed work raises academic-integrity concerns, supporting the recommendation for responsible-use guidance rather than a causal inference about learning outcomes (Chatterjee & Banerjee, 2024).

Most respondents reported frequent use: 50.7% used ChatGPT very often and 24.0% often. This indicates frequent self-reported use in the study population, but the cross-sectional design does not establish habitual dependence or changes in behaviour over time.

No statistically significant gender differences were found in awareness or use. The awareness comparison based on the displayed summary statistics was $t(73) = -1.28$, $p = .204$, while the use comparison was $t(73) = -0.38$, $p = .706$. These results should be interpreted as evidence of no statistically significant difference in this sample, not as evidence that gender has no effect in other populations. This finding contributes institution-specific evidence to a literature in which gender patterns in technology use vary across contexts (Oluwafemi & Lawal, 2024; Williams & Edwards, 2024; Zhou & Li, 2024).

H_{03} was rejected because awareness and use were positively correlated, $r = .72$, $p < .001$. The result indicates a strong association between the two variables, but correlation does not establish that greater awareness causes greater use. The finding is consistent with literature reporting an association between awareness and technology adoption (Santos et al., 2024; Hossain et al., 2024). The high perception scores are consistent with the TAM dimensions represented by perceived ease of use and perceived usefulness (Davis, 1989; Venkatesh & Bala, 2008). The item means were 4.77 and 4.53, respectively. Because the source manuscript does not report a separate reliability estimate for this three-item perception measure, interpretation is limited to the item-level results.

The finding that awareness of ChatGPT was high is consistent with the literature cited in the manuscript on students' exposure to digital technologies and AI tools. In the present study, 97.3% reported awareness, while 74.7% rated their awareness as high or very high. The study context provides access to a digitally equipped e-library, but the cross-sectional design does not allow the infrastructure to be identified as a cause of awareness.

The high level of reported use is consistent with studies cited in the manuscript that describe students' use of AI tools for academic tasks. In this study, the five-item use scale had a grand mean of 4.21, with research and e-library use receiving the highest item means. These findings describe use among the respondents and do not demonstrate that internet access or e-library infrastructure caused the reported level of use.

Assignment completion was the dominant reported purpose (77.3%), followed by research (16.0%) and studying (6.7%). This pattern is consistent with the task-oriented use described in the literature reviewed in the manuscript. At the same time, reliance on AI for assessed work raises academic-integrity and learning concerns; these concerns support the recommendation for responsible-use guidance rather than a causal inference about learning outcomes.

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The high perception scores are consistent with the TAM dimensions represented by perceived ease of use and perceived usefulness. The item means were 4.77 and 4.53, respectively. Because the source manuscript does not report a separate reliability estimate for this three-item perception measure, interpretation is limited to the item-level results.

Conclusion

This study examined gender differences in awareness and use of ChatGPT among undergraduate e-library users at HENSARD University. Among the 75 valid respondents, awareness was high and the extent and frequency of reported use were also high. Assignment completion was the most frequently reported purpose.

The five-item use scale produced a grand mean of 4.21, while the perception items showed very high ratings for ease of use, usefulness, and confidence. The study also found no statistically significant gender difference in awareness or use based on the displayed summary statistics.

Awareness and use did not differ significantly between male and female respondents. In addition, awareness was strongly and positively associated with use ($r = .72$, $p < .001$). This association should not be interpreted as causal because the study used a cross-sectional design.

Overall, the findings provide institution-specific evidence on ChatGPT awareness and use among the surveyed undergraduate e-library users. They support the need for responsible AI-use guidance and information-literacy support, while the availability of e-library infrastructure should be treated as contextual rather than as a demonstrated causal explanation.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Promotion of Responsible Use: Because assignment completion was the dominant reported purpose (77.3%), the university should provide guidance on appropriate attribution, verification of AI-generated content, and academic integrity.
2. Integration into Academic Support Services: Because respondents reported high use and very high perceived usefulness, library and academic support services should incorporate AI-literacy instruction into research and information-literacy programmes.
3. Sustained Investment in Digital Infrastructure: The e-library is the study setting in which substantial ChatGPT use was reported. Continued provision of reliable digital access is reasonable, but the present study does not establish infrastructure as a causal determinant of use.
4. Training and Capacity Building: Training should address responsible prompting, source verification, privacy, citation, and the limitations of AI-generated information.
5. Encouragement of Diverse Academic Use: Because assignment completion accounted for 77.3% of reported purposes, students should also be encouraged to use AI for explanation, comparison, brainstorming, and critical evaluation rather than relying primarily on generated assignment content.
6. Further Research: Future studies should use larger and more diverse samples, clearly defined recruitment procedures, and longitudinal or comparative designs to examine how access, discipline, academic level, and other factors relate to AI use.

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