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Full Length Research Article

ASSESSING THE PERCEPTION OF STUDENTS ON THE USE OF DIGITAL TECHNOLOGY IN LEARNING

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ABSTRACT
With the increasing proliferation of digital tools in Higher Education Institutions (HEIs), which improves students' overall learning experiences, it is critical to investigate students' perceptions and motivators for using digital technologies in the learning process. Numerous studies have shown that students generally view the use of various digital technologies in the learning process positively. However, there has been insufficient in-depth investigation into the overall perceptions of higher education institution (HEI) students regarding the use of these digital tools in their learning. As a result, the purpose of the study is to investigate in depth the general perception and motivating factors influencing digital technology integration in the learning process using a mixed research design technique. The study collected data from Nigerian HEI students via a questionnaire that included both open-ended and closed-ended questions. The data was examined descriptively, with multivariate regression and theme modeling. The results of the study suggest that there is a gender gap and that more than half (55.3%) of HEI students are between the ages of 16 and 25. The findings indicate that students have a positive perception of the usefulness and impact of digital technologies in the learning process. Additionally, usefulness, ease of use, and self-efficacy emerge as the primary determinants of digital technology integration, explaining 37% of the variance.

Keywords: Digital Technology, Students Perception, Topic Modelling, Digital Learning.

INTRODUCTION

Digital transformation is the use of digital technologies in organizational business processes, operations, skills, structures, and design to improve services (David, 2024). In higher education institutions (HEIs), it refers to the approach taken by institutions to deliver education, interact with students, staff, and relevant stakeholders, and perform basic activities using digital technologies (Gkrimpizi et al., 2023). The end result of digital transformation is the delivery of new services with new features through the smart integration of digital technologies (Antonio et al., 2023). Digital technologies like learning management systems (LMS), collaboration tools, devices (like PCs, tablets, iPads, etc.), and other emerging and disruptive technologies like artificial intelligence (AI), augmented reality (AR), and virtual reality (VR) have the potential to enhance the learning experience for students (Rosaura et al., 2024) and empower them to take a more self-directed approach to their learning (Vesna et al., 2025).

Digital transformation in HEIs has changed the paradigm of learning from teacher-centered to student-centered (Laleye, 2015; Akram et al., 2022; Faig, 2023; Kumbo et al., 2023; and Nurtayeva et al., 2024). It has enhanced the quality of the learning processes, increased the effectiveness and efficiency of academic administration, and changed the delivery of service to a robust, flexible, and quality method that is focused on its intended users (Seres et al., 2018). However, there are factors that hinder the digital transformation of HEIs that are environmental, strategic, organizational, technological, people-related, and cultural (Gkrimpizi et al., 2023; Okoye et al., 2023; Trang, 2024; David, 2024). Moreover, Ogunode and Ndayebom (2023); Ibironke and Jayeola (2025) reported that first-order barriers and the fast pace of technological advancements are factors militating against the digitalization of higher education institutions in Nigeria. Studies have examined how students perceived the use of chatbots (Al-Abdullatif, 2023), learning management systems (Almusharraf, 2024), and other digital tools for learning (Begoña et al., 2022), and collaborative coursework (Forman & Miller, 2023). The findings from the studies indicate that ease of use (Forman & Miller, 2023; Almusharraf, 2024) and perceived usefulness (Begoña et al., 2022) are the key determinants of acceptance in the learning process. Although, numerous studies have shown that students generally view the use of various digital technologies in the learning process positively, however, there has been insufficient in-depth investigation into the overall perceptions of higher education institution (HEI) students regarding the use of these digital tools in their learning. According to Vesna et al. (2025), there is a need for an in-depth exploration of digital technology use in HEIs. This study seeks to evaluate students' perceptions of digital technology use in the learning process. The objectives of the study are:

1. To evaluate students' perceptions of digital technology use in the learning process.
2. To identify the motivating factors for digital technology use in the learning process.

This study will achieve the objectives by answering the following questions:

1. How do students of HEIs in Nigeria perceive digital technology use in the learning process?
2. What motivates students of HEIs in Nigeria to use digital technology in the learning process?

The remainder of this paper is organized as follows: Section 2 examines the relevant research on students' perceptions of digital technology use in the learning process. Section 3 describes the methodology for data gathering and analysis. Section 4 shows the findings of the analysis and discusses the various conclusions obtained. Section 5 gives the conclusion and suggests directions for future research.

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MATERIALS AND METHODS

This study used a mixed-method approach to achieve the specified goals and objectives. The study used an online questionnaire to gather data from students in Nigerian HEIs. The questionnaire comprises XY closed-ended questions and an open-ended question. The data was analyzed using quantitative techniques, followed by qualitative techniques to identify the students' motivational factors for digital technology use in the learning process.

RESEARCH TOOL AND STRATEGY

A questionnaire was developed to collect information that will assist in achieving the research objectives. The survey questions were adapted from the study of Mahdum et al. (2019). The questionnaire comprises 70 items organized in three sections. Section one includes 4 questions that gather demographic information about the respondents, including age, gender, institution, and program. Section two includes 18 close-ended questions designed to assess respondents' perceptions regarding the use of digital technology in the learning process. The responses are measured using a 5-point Likert scale, which ranges from "strongly agree" to "strongly disagree." The questions are divided into three categories: perceived usefulness, ease of use, and self-efficacy. Section three includes an open-ended question that gather the motivating factors for digital technology use in the learning process.

The questionnaire was prepared in Google Forms and distributed electronically (by email and WhatsApp) to students in Nigerian HEIs. A probability sampling technique, specifically a random sampling technique was adopted, with a large size owing to the fact that huge number of questionnaires was shared electronically. A total of one thousand four hundred and twelve (1412) responses were recorded. The few missing values in the responses were replaced with the most frequently occurring values. Furthermore, responses were coded and aggregated for quantitative data. Outliers were detected visually using the box model and were replaced with the mean of the features. The quantitative data was subjected to descriptive and inferential analyses, while the qualitative data was used for topic modelling.

Validity and Reliability Test

As noted by Akeem (2015), a test of validity is the degree to which the test measures what is intended to be measured (constructs), while reliability refers to the degree of dependability and consistency of a research instrument. Convergent validity was used to assess the extent to which the questionnaire measures what is intended. Similarly, the Cronbach's alpha test was used to assess the reliability of the items as shown in Table 1. Each construct underwent a test for both validity and reliability to evaluate its accuracy and internal consistency. The test was followed by an overall assessment of validity and reliability.

Data Analysis

Figure 1 shows the data procedure used for data preprocessing and analysis. That's, it represents the steps adopted from data collection, data analysis (preprocessing, regression, and topic modelling) to result interpretation.

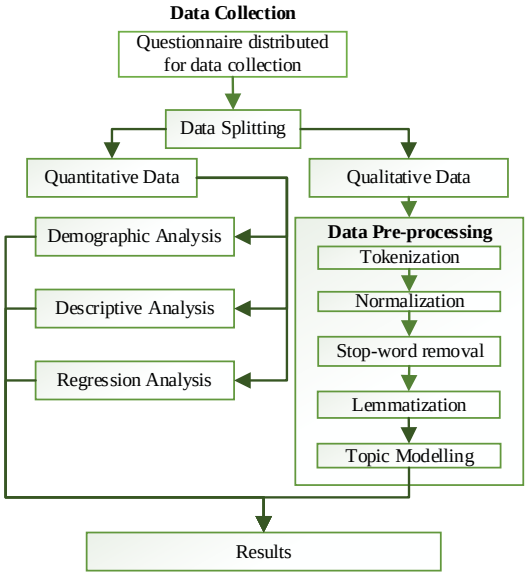

Figure 1: Data preprocessing and analysis

The data were collected through questionnaires and split into qualitative and quantitative data. Demographic and descriptive analyses were performed on the quantitative data. The study analyzed the response for the 22 close-ended items and discussed the results from each component using the mean and standard deviation. The average, or mean (M), is calculated by dividing the total number of outcomes by the sum of all observed outcomes from each construct. The degree of variability or dispersion between the individual data values and the mean is measured by the standard deviation (S.D.).

The mean was derived using the five-point Likert scale. To find the minimum and maximum length of a 5-point Likert scale, a range was calculated by subtracting 1 from 5 (5-1=4) and dividing by 5 (4/5=0.8), which is the highest number on the scale. One represents the value on the scale; thus, it was included to designate the maximum of each item in the construct as follows:

1. From 1 to 1.80 is (strongly disagree)
2. From 1.81 to 2.60 is (disagree)
3. From 2.62 to 3.40 is (neutral)
4. From 3.41 to 4.20 is (agree)
5. From 4.21 to 5.00 is (strongly agree)

For the standard deviation, SD >= 1 indicates a relatively high variation, while SD < 1 can be considered low.

The quantitative data were then tested for outlier detection, multivariate normality, multicollinearity, and homogeneity in preparation for regression analysis. Then, a multivariate regression analysis was conducted to determine the factors that influence students' use of digital technology in the learning process.

Furthermore, the qualitative data were pre-processed to convert the responses into a format that was suitable for topic modeling.

1. **Tokenization:** This refers to the process by which raw text is broken into smaller pieces, chunks, or sentences, which are referred to as tokens (Srinivas, 2020) using the Gensim library (Khandare et al., 2023). The responses were then tokenized because tokens shed more meaning from a sequence of words within a text, thus making interpretation easier.

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2. **Normalization**: The obtained tokens are normalized to ensure the uniformity and consistency of words irrespective of the sentence case, which reduces randomness and improves efficiency (Khekare et al., 2024). This was achieved by converting all the tokens to lowercase.
3. **Stop word Removal**: Stop words are words that do not add any meaning to a sequence of text, which means that removing such words has no effect on the overall efficiency or performance of a model. For example, words such as "each," "about," and "such" are considered to be stop words. At this stage, stop words were removed from the normalized data. This increases the statistical significance of words that are relevant to the problem being addressed (Sarica & Luo, 2021). Further refinement of stop-word removal includes words with lengths less than or equal to three, such as "it," "and," "of," etc.
4. **Lemmatization**: This is a technique of grouping inflected words so that they can be treated as a single item rather than being considered independent terms. The remaining sequence of tokens after the removal of stop words was lemmatized. The technique uses vocabulary, part-of-speech tags, and grammar to remove the inflectional part of the word and reduce it to a lemma (Pant et al., 2024). For example, words such as "sing," "singing," and "singer" are grouped under a single term such as "sing." This approach is the most popular and preferred over other approaches such as stemming, which does not consider the semantic meaning of words, such as lemmatization (Pant et al., 2024).

After passing through the steps of tokenization, normalization, stop-word removal, and lemmatization, the preprocessed responses are prepared for topic modeling.

Topic modeling is an NLP technique that is used to uncover hidden semantic structures in text sequences. It is an unsupervised machine learning technique that finds patterns in a text sequence and groups similar terms that best describe the group. It is unsupervised because it detects patterns in the absence of tags or labels (Ogunleye et al. 2023). The Latent Dirichlet Allocation (LDA) algorithm was used to extract the required features. The term "latent" refers to hidden information that cannot be directly identified, whereas Dirichlet allocation is a form of probability distribution (Wheeler et al., 2023). To randomly assign each word to a subject, the algorithm initially considers a text as a combination of topics and then iterates over the given topics, evaluating how frequently the words occur in a topic alongside other words. The algorithm takes numerous criteria into account during the implementation process, including the anticipated number of topics expected to be present in the document. The LDA algorithm was used to identify topics from the responses collected, and a word cloud was produced for the responses that clearly displayed the terms that the respondents used most frequently. The topic modeling technique enables the study to qualitatively determine the perceptions of students for digital technology use in the learning process.

RESULTS

This section presents the results of the demographic and descriptive analyses of the responses obtained from students and the results of topic modeling.

Demographic Analysis

This section presents the results of the demographic analysis of the respondents, such as their age, gender, and type of institute and program.

Gender of the Respondents

Figure 2 illustrates the distribution of respondents based on gender. The result shows that 62% of the respondents are males (875 respondents), whereas 38% of the respondents are female (537 respondents). The result suggests that there were more male respondents than female respondents.

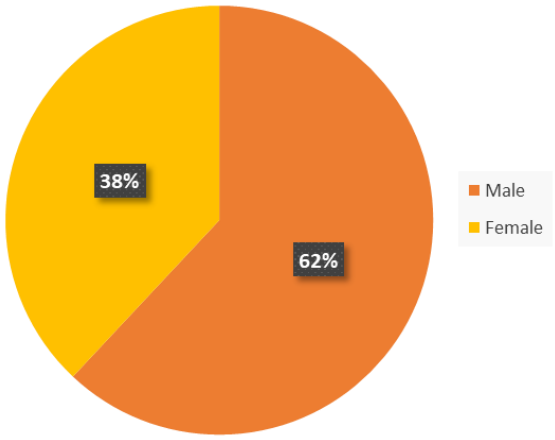

Figure 2: Distribution of respondents by gender

Age of the Respondents

Figure 3 illustrates the distribution of respondents based on age. The result indicates four categories of age groups. Fifty-four percent of the population (762 respondents) are from the ages of 16 to 25 years, whereas 30% of the population (423 respondents) are from the ages of 26 to 35 years. The respondents who were 36 to 45 years old represented 13% of the population (183 respondents). Finally, 3% of the population (42 respondents) are 46 years of age or older. The result suggests that respondents aged 16 to 35 years make up 84% of the population.

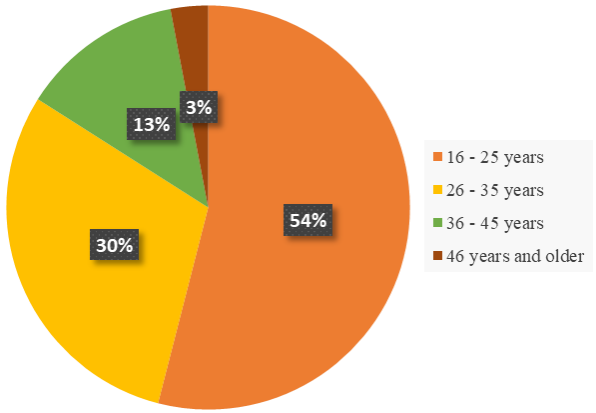

Figure 3: Distribution of respondents by age

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Institutions and Programs of the Respondents

Figure 4 illustrates the distribution of respondents based on institutions. The result indicates that 86% of the respondents were from universities, 12% of the respondents were from polytechnics, and 2% of the respondents were from colleges of education. Furthermore, Figure 5 illustrates the distribution of respondents by programs; 50% of the respondents were undergraduates, 22% of the respondents were postgraduate students, 15% of the respondents were higher diploma students, and 13% of the respondents were diploma students.

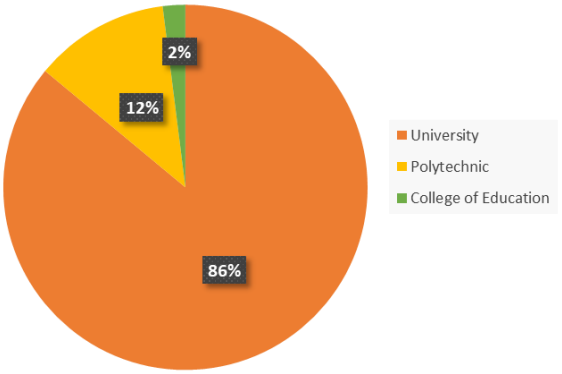

Figure 4: Distribution of respondents by institution type

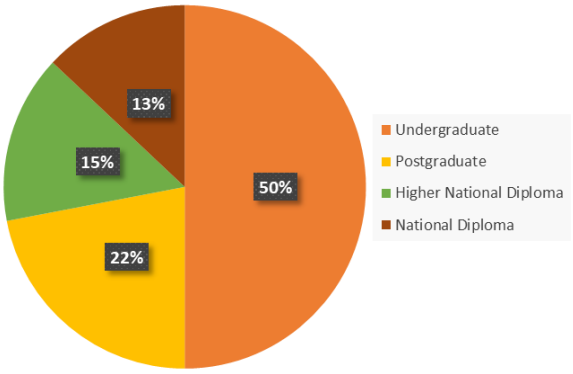

Figure 5: Distribution of respondents by program

Descriptive Analysis

This section presents the results of descriptive analysis of the 22 items across four constructs, namely perceived usefulness, ease of use, self-efficacy, and technology integration. Table 1 displays the results of the reliability test using Cronbach's Alpha. The Cronbach Alpha for SE (0.216) was due to the dimensionality reduction, where only two constructs were retained out of six, as shown in Table 6.

Table 1: Result of Reliability Test for Retained Constructs

Constructs	Cronbach's Alpha
PU	0.778
EU	0.810
SE	0.216
TI	0.765

Perceived Usefulness

Perceived usefulness refers to an individual's belief or perception of how a technology can improve tasks in terms of efficiency and effectiveness (Boledeoku et al., 2022). Table 2 displays the distribution of responses to the perceived usefulness items. The results indicate that all respondents agreed that the use of digital technologies enhances learning effectiveness (100%). The majority of respondents agreed that digital technologies enhance student skills (75% strongly agreed and 25% agreed) and comprehension (94%), assist in the creation of various learning activities (76%), and reduce boredom during learning sessions (59%). However, there were different opinions regarding the role of digital technologies in improving the academic performance of students; 31% agreed, 40% remained undecided, and 29% disagreed. The overall results indicate that respondents agreed that digital technologies are useful in the learning process, as shown by the mean score of 4.00 (S.D. = 0.41) for the items under perceived usefulness.

Table 2: Responses to the Perceived Usefulness Items

ID	Items	SA	A	N	D	SD
PU1	The use of digital technologies can make learning process more effective	100	0	0	0	0
PU2	The use of digital technologies in learning activities enhances students' skills	75	25	0	0	0
PU3	The use of digital technologies can improve my academic performance	0	31	40	29	0
PU4	Digital technologies assist in the creation of various learning activities	0	76	24	1	0
PU5	Students comprehend better when digital technologies are used for teaching	0	94	6	0	0
PU6	The use of digital technologies in learning sessions is not boring	0	59	38	3	0

Ease of Use

Ease of use refers to the belief that using a specific technology will be simple (Luo et al., 2024). Table 3 displays the distribution of responses to the ease-of-use items. The results indicate that all the respondents enjoyed using digital technologies in the learning process (100%). The results also show that the majority of respondents agreed that digital technologies are simple to use (85%), allow for participation in learning activities (99%), and make it easier to explain concepts (96%). However, the majority of respondents remained undecided (82%) on whether the use of digital technologies in learning provides ease in meeting diverse learning needs. The overall results indicate that respondents agreed that the ease of using digital technologies influences their integration into the learning process, as shown by the mean score of 4.23 (S.D. = 0.17) for the items under ease-of-use.

Table 3: Responses to the Ease-of-Use Items

ID	Items	SA	A	N	D	SD
EU1	The use of digital technologies in learning activities is quite easy and not troublesome	85	14	1	0	0
EU2	Concepts are easily explained with the aid digital technologies	0	96	4	0	0
EU3	Digital technologies assist in active participation among students in learning activities	0	99	1	0	0
EU4	The use of digital technologies provides ease in meeting the needs of learning resources	0	18	82	0	0
EU5	Using Digital technology in learning is enjoyable.	100	0	0	0	0
EU6	Digital technologies enhance effective communication of learning activities	100	0	0	0	0

Self-Efficacy

Self-efficacy refers to the belief and ability of an individual to use technology towards accomplishing a task (An et al., 2022). Table 4 displays the distribution of responses to the self-efficacy items. The results show that the majority of respondents agreed that confidence in the use of digital technologies can lead to better learning outcomes (95%) and that the ability to search for, evaluate, and employ relevant digital technologies for learning improves their learning outcomes (95%). Similarly, the majority agreed that continuous usage of digital tools for learning activities demonstrates a student's capacity and skills (82%). However, the majority of respondents were undecided whether knowledge of digital tools determines their integration (63%), while 37% agreed. Similarly, 64% of the respondents remained undecided on whether problem-solving abilities influence digital technology use, while 36% agreed. Finally, respondents had varied opinions on whether student knowledge of digital tools has no influence on learning outcomes: the majority rejected it (35% disagreed and 20% strongly disagreed), 25% were undecided, and 20% strongly agreed. The overall results indicate that respondents agreed that self-efficacy influences digital technology use and the learning process, as shown by the mean score of 3.48 (S.D. = 0.48) for the items under self-efficacy.

Table 4: Responses to the Self-Efficacy Items

ID	Items	SA	A	N	D	SD
SE1	Ability and knowledge of digital technologies determine their integration into learning	0	37	63	0	0
SE2	Student's confidence of digital technologies usage can lead to better learning outcome.	0	95	4	1	0
SE3	Ability to search, evaluate and use appropriate digital technologies influence learning outcome	0	95	5	0	0
SE4	Ability to solve problems when using digital technologies influence their use for learning activities.	0	36	64	0	0
SE5	Continuous usage of digital technologies for learning activities demonstrates student's capacity and skills.	0	82	18	0	0
SE6	Student's knowledge of digital technologies has no influence on learning outcomes.	0	20	25	35	20

Technology Integration

Technology integration refers to a well-coordinated use of digital tools such as computers, projectors, smart devices, PDAs, and other computing tools for problem solving, deeper understanding, and learning (Christensen, 2019). Table 5 displays the distribution of responses to the technology integration items. The results indicate that 100% of respondents believed that integrating digital technologies into the learning process enables students to comprehend faster and develop new skills. Furthermore, the majority of respondents agreed that using digital technologies has simplified the learning process (99%), and they support the use of learning management systems for the management of class activities. The overall results suggest that respondents agreed that the ease of utilizing digital technologies influences their integration into the learning process. This is shown by a mean score of 4.49 (SD = 0.08) for the technology integration items.

Table 5: Responses to the Technology Integration Items

ID	Items	SA	A	N	D	SD
T1	Students comprehend faster when digital technologies support the learning process	100	0	0	0	0
T2	I develop new skills while using digital technologies in the learning process	100	0	0	0	0
T3	Using digital technologies has simplified my learning process	0	99	1	0	0
T4	I should always use a Learning Management System for the management of class activities	0	95	5	0	0

Regression Analysis

An exploratory factor analysis was conducted to reduce the amount of data to a smaller sample and explore the theoretical structure of the phenomena (Lütfi et al., 2022). To prepare for the regression analysis, the predictors were observed across the four latent

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constructs. Principal component analysis was used, with promax as the method of rotation. Table 6 displays the results of the analysis, where 13 indicators were retained and others rejected across the four constructs.

Table 6: Retained and Rejected Indicators

Indicators	Retained	Rejected
Independent Variables		
Perceived Usefulness (PU)	1, 2, 3 and 4	5 and 6
Ease of Use (EU)	2, 3, 4 and 5	1 and 6
Self-Efficacy (EF)	5 and 6	1, 2, 3 and 4
Dependent Variable		
TI	2, 3, and 4	1

Additionally, a test of validity was conducted on the indicators. Table 7 displays the variance (information) explained by the indicators. The indicators are admissible since the values obtained were above the significant value. Thus, a multivariate regression analysis was conducted with three independent variables and one dependent variable. The independent variables are perceived usefulness, ease of use, and self-efficacy. The dependent variable is student perception of the use of digital technology in the learning process.

Table 7: Result of Convergent Validity Test

Constructs	Construct Validity
PU	0.68
EU	0.78
SE	0.55
TIN	0.82

Table 8 displays a summary of the results of the multivariate regression analysis. A significant regression equation was found, $f(5, 135) = 27.805$, $p < 0.001$, which indicates that the model was statistically significant ($b = 1.094$, $p < 0.001$). Additionally, the value of $R^2 = 0.368$ depicts that the model explains 36.8% of the variance in the dependent variable (technology integration).

Table 8: Summary of Regression Analysis Result

Regression Weights	Beta Coefficient	R^2	F	p-value
Independent Dependent	1.094	0.368	27.805	0.001

Furthermore, Table 9 displays the regression coefficients for the three predictors, which were all statistically significant. The ease of utilizing digital technology (EU) was the strongest predictor ($\beta = 0.409$, $p = 0.000$), followed by self-efficacy ($\beta = 0.223$, $p = 0.002$) and perceived usefulness ($\beta = 0.178$, $p = 0.027$).

Table 9: Regression Coefficients of Predictors of Digital Technology Use

S/N	Predictor	β (Standardized)	t	p-value	Significant
1	Ease of Use	0.409	5.516	0.000	Yes
2	Self-Efficacy	0.223	3.183	0.002	Yes
3	Perceived Usefulness	0.178	2.233	0.027	Yes

The results indicate that ease of use, self-efficacy, and perceived usefulness are the main factors that influence students to use digital technology in the learning process. This means that students are more likely to integrate digital technologies when they find them simple to use, are confident in their ability to use digital technologies effectively, and perceive them as useful.

Topic Modelling

Figure 6 illustrates the results of topic modelling for motivational factors for digital technology use in the learning process. The figure has two panels: the left panel and the right panel. A bubble is used to symbolize a topic in the left panel. The larger the bubble is, the greater the number of terms belonging to that topic. The right panel depicts a horizontal bar chart, which represents the individual terms of a topic. It shows the top 30 most relevant terms for a phenomenon under discussion. The bar shows both the total frequency of a given term across all topics (blue bar) and the topic-specific frequency (red bubble). The size of a bubble also reflects the importance of the topic in a document. The distance between the bubbles indicates differences between the topics.

The results in Figure 6 reveal three topics. Topic 1 (red bubble) accounts for 36.3% of the total data. The most common terms include "ease," "understand," "change," "availability," and "ability." The terms suggest that students use digital technologies in the learning process when they are available and easy to use, simplify the understanding of concepts, and change the approach to learning. Furthermore, Figure 7 illustrates the most common terms of Topic 2, which accounts for 32% of the total data. The terms are "motivate," "skills," "integrate," "enhance," and "help." These terms suggest that students are motivated to integrate digital technologies in the learning process due to the skills they will acquire, which helps in enhancing their learning experience. Finally, Figure 8 illustrates the most common terms of Topic 3, which accounts for 31.7% of the total data. The terms include "faster," "knowledge," "improve," "internet," and "better." These terms suggest that students are motivated to use digital technologies because they improve the overall learning experience and enable faster delivery of knowledge, particularly when internet connectivity is better. Figure 9 illustrates the combined results of the three topics. The most salient terms of the topics include "ease," "faster," and "knowledge." The word cloud in Figure 10 illustrates the prevalence of the terms "ease," "faster," and "understand." These words suggest that the ease of using digital technologies motivates their integration in the learning process because they speed up understanding.

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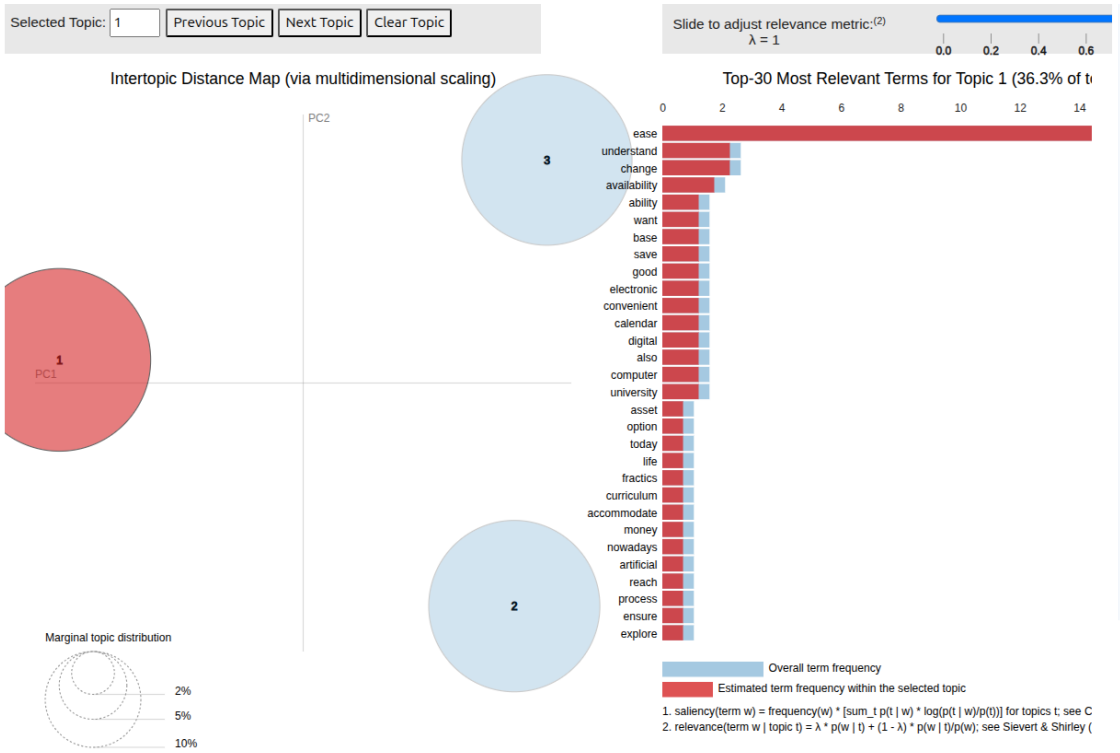

Figure 6: Most relevant terms of topic 1 on motivation for digital technologies used in the learning process

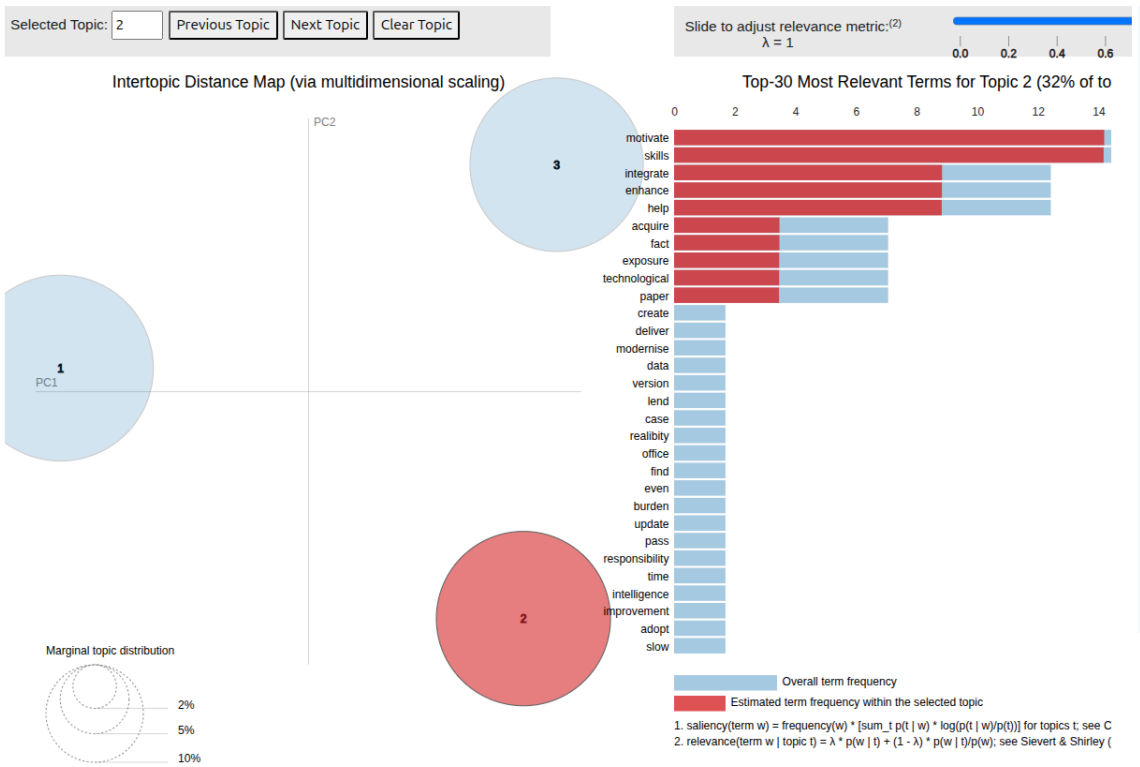

Figure 7: Most relevant terms of topic 2 on motivation for digital technologies used in the learning process

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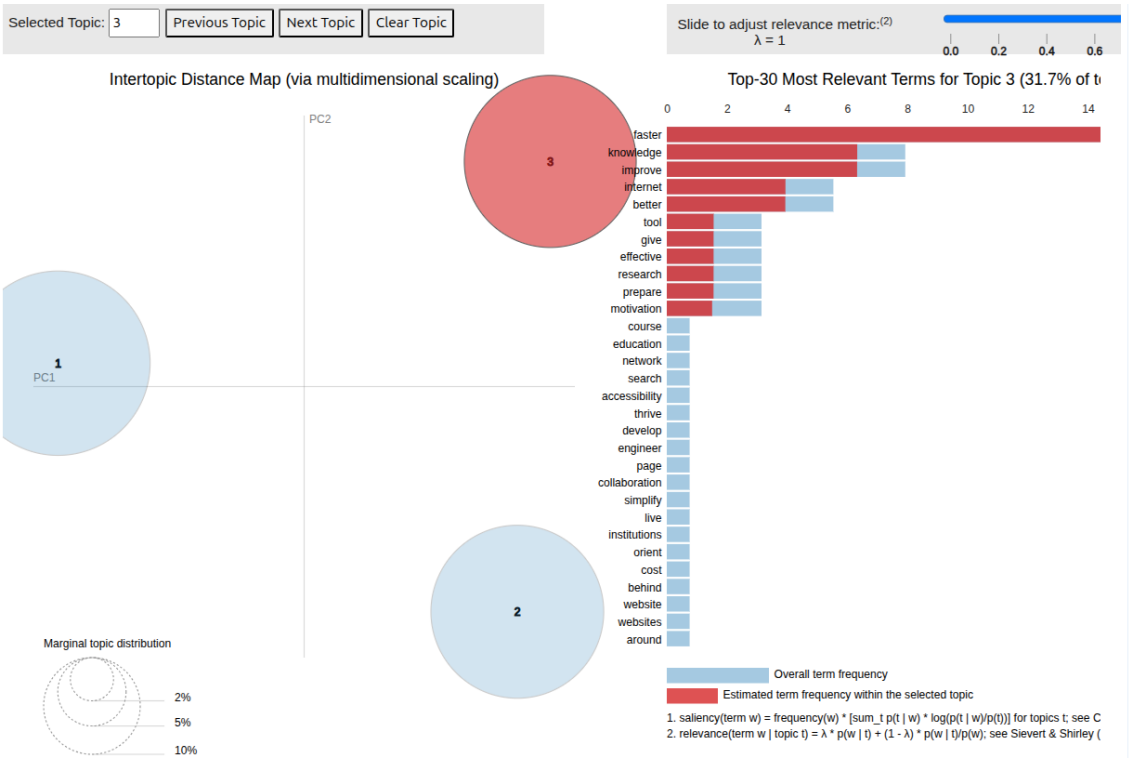

Figure 8: Most relevant terms of topic 3 on motivation for digital technologies used in the learning process

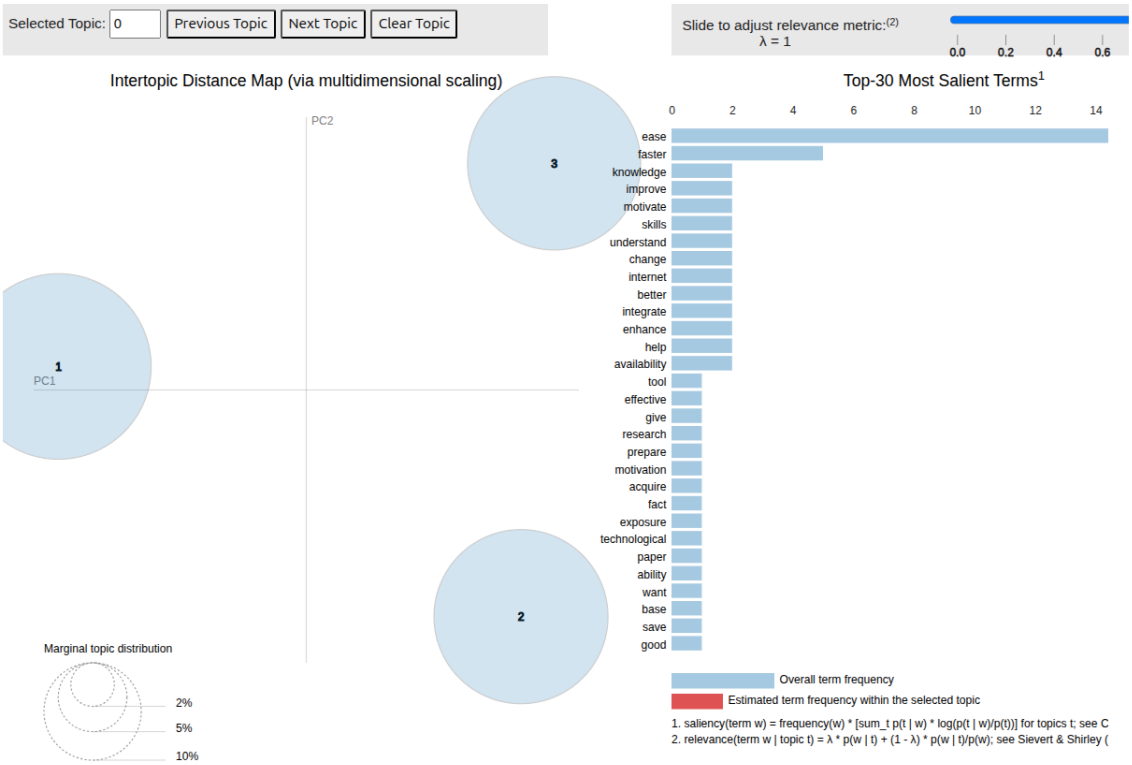

Figure 9: Inter-topic distance and salient terms on motivation for digital technologies used in the learning process

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Figure 10: Word Cloud for students' motivations of digital technology use in the learning process

DISCUSSION

According to the demographic analysis, there is a substantial gender gap among students, with males almost doubling the number of females. The analysis also indicates that students aged 16 to 35 years make up 84% of the population, with university students accounting for 82% of the population. Additionally, the findings of the descriptive analysis indicate ease of use, perceived usefulness, and self-efficacy as the influencing factors for digital technology use in the learning process. These findings are supported by the results of regression analysis, which emphasized the influence of ease of use, perceived usefulness, and self-efficacy on digital technology use in the learning process, as evidenced from the variance explained (36.5%) by the level of students' technology integration. Figure 10 summarizes the findings of regression analysis. Furthermore, the results of topic modelling show that the driving factors for digital technologies in the learning process are their ease of use and the speed with which they enable comprehension toward obtaining meaningful knowledge.

Table 10: Summary of students' perception of digital technologies in learning

S/N	Construct	Overall Mean (SD)	Findings
1	Perceived Usefulness	4.00 (0.41)	Strong positive perception with some uncertainties about direct impact in academic process.
2	Ease of Use	4.23 (0.17)	High positive perception, though neutrality suggests uncertainty about adaptability to individuals needs
3	Self-Efficacy	3.48 (0.48)	Moderate perception and strong value of digital technologies, though uncertainty exists about knowledge and problem-solving skills.
4	Technology Integration	4.49 (0.08)	Very strong positive perception with support for the integration of learning platforms like LMS.

Thus, the outcome of quantitative analysis findings indicates that students perceived the use of digital technology as beneficial to their learning experience, particularly when they are simple to use. Additionally, the ease of using digital technologies increases the self-efficacy of students, which consistent with the findings of Almusharraf (2024). The results of topic modelling, based on the key terms from the analysis, show that ease of use of digital technology is the main factor that motivates teachers to use it for teaching and learning. This correlate with the finds of Şahin & Şahin (2022) which shows ease of use and competence are strong determinants that motivates for the integration of digital technology in teaching and learning. These findings provide an answer to research question 1 and achieve the first objective of the study. lastly, the qualitative research identifies simplicity of use, self-efficacy, and perceived usefulness as motivators for using digital technology in the learning process. The simplicity of use and perceived usefulness facilitates quick learning, developing new skills, and improving learning experiences. These findings addressed research question 2 and achieved the second objective of the study.

Conclusion

Digital transformation in HEIs has changed the paradigm of learning from teacher-centered to learner-centered. While digital technologies improve the quality of learning, exploring the perception of learners and the motivating factors of integration in the learning process is paramount. This study used a mixed research method to explore the perception of students and determine the motivating factors that influence the use of digital technologies in the learning process. The findings of the study show that the majority of students in Nigerian HEIs are within the technological age group (16 to 35 years old), capable of integrating digital technologies in the learning process; however, there is a gender gap in student enrolment because the number of male students is almost twice that of their female counterparts. Additionally, the findings also indicate that students generally exhibit positive perceptions about the impact of digital technologies on the learning process, with simplicity of using digital technologies a strong indicator for integration into the learning process, followed by perceived usefulness of the technologies. The simplicity of use and perceived usefulness enable quick learning, enhance students' skills, and improve their learning experiences.

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