

South-western Nigerian University Students' Gender Use of Mobile Technologies for Learning

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Abstract

Gender's potential impact on the uptake of mobile learning technologies was investigated. The study sought to examine the influence of gender on attitudes and intentions toward adopting mobile technology for learning, as well as perceived utility, usability, and usefulness. The survey method was used for the investigation. A total of 1,214 respondents were chosen on purpose from 18 universities in the south-west of Nigeria, including six Federal, six State, and six Private Universities. The data were gathered using researchers' designed questionnaire. The instrument's dependability was determined using Cronbach Alpha to be 0.86. The first through fourth hypotheses were put to the t-test. The study's findings showed that there was no difference between undergraduates of both sexes in terms of their attitudes ($t_{(1, 1212)} = 0.76, p = 0.45$), usefulness ($t_{(1, 1212)} = 0.32, p = 0.75$), perceived ease of use ($t_{(1, 1212)} = 0.86, p = 0.39$) and their intention ($t_{(1, 1212)} = 0.06, p = 0.96$) toward using mobile technologies for learning. The study's conclusions show that none of the criteria (perceived usefulness, perceived ease of use, attitude, and intention) differed by gender. It follows that mobile technologies may have a significant impact on how students learn in Nigerian Universities. The study consequently advised against taking gender imbalance into account when implementing mobile-based learning in Nigeria.

Keywords: *South-west, Gender, Adoption, Mobile Technologies, Influence.*

Introduction

The use of technology in education can be traced back to the classical era; it was revolutionized during the industrial revolution in Britain and France in the 1950s and 1960s, though. As a result of recent advancements in science and technology on a worldwide scale, work may now be completed quickly and easily, allowing for tremendous breakthroughs in a variety of human endeavors. Application of mobile technologies in educating Nigerian students, especially among undergraduates, is essential to reform, "re-invent," and make teaching and learning simpler and more practical. This reality serves as the basis for this claim. Mobile technology, a recent development in Nigerian education, will aid in the transformation of the academic system from a conventional to a technologically focused one.

Due to the introduction of online education, learning via mobile technology is no longer novel in the educational sphere. According to Adegbija and Bola (2014), mobile learning has since changed from being an add-on to electronic learning to occupying

its own educational space, bringing up a new area of scholarly investigation that has emerged as a topic of global discourse (Pollara & Broussard, 2011). The growth in the use and purchase of portable technology for learning, which is leading to a paradigm move for automated learning (Bola, 2015), provides significant learning opportunities for students who frequently use mobile devices like smart phones, Android, personal digital assistants, and similar devices. According to Zaidi, Osmanaj, Ali, and Zaidi (2021), the perceived usefulness and usability of mobile learning tools affect students' usage attitudes, which in turn affect students' adoption behavior for embracing mobile technology. Global commercial transactions have undergone a paradigm shift as a result of rising mobile technology (Oni, Ayo, Rowland, Geteloma, & Abayomi-Zannu, 2022).

According to Bola (2015); Butler, Camilleri, Creed, and Zutshi (2020), portable technology is well-defined as mobile data technological equipment or relics that consists of communication (network services), interface, and software (devices and applications) components. According to the researchers,

mobile technology consists of portal devices that include hardware, software, and communication capabilities that are enabled by network services. This technology will allow educational institutions to employ some of its qualities, such as portability, flexibility, and ubiquity in learning, claim Criollo, Guerrero, Jaramillo, and Luján (2021). Mobile technologies are appropriate instruments that can be used by students in general due to their portability, ease of use, and relatively low cost of acquisition. Mobile learning is the technique of expanding the reach of learners across numerous locations by using technological equipments, such as mobile phones, smart phones, Androids, iPads, and so forth (Hashemi, Azizinezhad, Najafi & Nesari, 2011). Bola (2015) defined portable learning as the wave transmission of educational content and materials to learners from any location and at any time utilizing mobile technology (Pamela, 2011). However, many definitions of the phrase "mobile learning" have been offered (Petrucco, 2020; Biswas, Roy & Roy, 2020; Janson, Söllner, & Leimeister, 2019; Grant, 2019).

The topic of gender, which is a global concern and is explored in all spheres of

human endeavor, is also pertinent to our subject. The responsibilities and relationships that men and women have with one another are referred to as gender, in the opinion of Saghir, Ashfaq, and Noreen (2009). Gender, however, refers to more than simply men and women; it also refers to the ways in which socialization affects people's traits, actions, and identities (Saghir, Ashfaq, & Noreen, 2009). Similar to this, Ewhrudjakpor (2006) defined gender as the social characteristics, opportunities, and the interactions between male and female sexes. A framework for examining the connection between changing gender relations and technical advancement is provided by technical growth. These socially produced traits and interactions are learned through socialization processes. Several Nigerian academics have reviewed the extent to which Nigerian institutions have attempted to incorporate ICT-based teaching and learning approaches in their scholarly works (Obanya, 2006; Olatokun & Opesade, 2007; Erinosh, 2007). The study conducted by Awodeji (1997), as cited by Adegbija, Bola, Riaz and George (2013), found gender disparity in ICT achievement in favor of males, in contrast to Esiobu (2011) and Adegbija (2006) who believe that gender is no

longer a significant performance barrier and that gender differences in ICT usage are therefore inconclusive. It is crucial to investigate how gender may impact application of mobile devices in education in South-Western Nigerian Universities, given their widespread use and the potential they bring. This is an important step because of the nation's failed educational system, insurgency, banditry, herder-farmer conflicts, kidnappings, and bad government. The use of portable technologies in education could help to alleviate some of the issues faced in the Nigerian educational system by increasing the effectiveness of instruction and thereby extending access to education for those seeking and waiting for the global information that is deficient in higher education in Nigeria.

Purpose of the Study

Examining how gender affected the implementation of mobile learning technology in universities in the south-west of Nigeria was the study's main objective. The research specifically focused on:

1. How gender affected undergraduates' opinions of the benefits of mobile devices for education.

2. How students' perceptions of how simple it is to use mobile technology for learning are influenced by their gender.

3. The impact of gender on undergraduates' opinions about using mobile technologies for education.

4. How University students' intentions to use mobile technology for studying are influenced by gender.

Hypotheses

Ho1: There is no significant gender difference in undergraduates' perceived usefulness of mobile technologies for learning.

Ho2: There is no significant gender difference in undergraduates' perceived ease of use of mobile technologies for learning.

Ho3: There is no significant gender difference in undergraduates' perceived attitude towards using mobile technologies for learning.

Ho4: There is no significant gender difference in undergraduates' perceived intention to use mobile technologies for learning

Methodology

This study employs a survey methodology and is descriptive in nature. The researcher

prepared a questionnaire that is used in the study to collect data from undergraduates who were selected at random from the 18 specifically specified Universities. To get clear data for the gender variables that were used for the research, undergraduates were divided along gender using the stratified random sample technique. This was carried out across departments in each university faculty. For the study, eighty undergraduates were purposefully chosen from each of the 18 Federal, State, and Private universities. A total of 1,440 participants were given the

research instrument; 1,214 of them responded correctly and were analyzed for the study.

Results

Findings of the data analysis are presented here. Demographic information about the respondents is shown before the results. The demographic data for the respondents are shown:

Table 1:
Respondents' Percentage Distribution by School Ownership

Institution Type	No. of Respondents	%
Federal University	420	34.6
State University	447	36.8
Private University	347	28.6

According to Table 1, there were 447 responders from state universities (36.8% of the total), 420 from federal universities (34.6%) and 347 from private universities (28.6%).

Table 2:
Respondents' Percentage Distribution by Gender

Gender	No. of Respondents	%
Male	624	51.4
Female	590	48.6
Total	1214	100.00

According to Table 2, there were 624 men who responded, or 51.4% of all respondents, compared to 590 women, or 48.6%.

Testing Hypotheses

The results are shown in connection to the study's first through fourth assumptions in the tables below. Each hypothesis was evaluated at 0.05, the significance level.

Ho1: There is no significant gender difference in undergraduates' perceived

usefulness of mobile technologies for learning. The t-test was employed to test the gender difference in undergraduates' perceived usefulness of mobile technologies for learning. Table 3 presents the outcomes.

Table 3:
t-test on Undergraduate Males and Females' Perceived Usefulness of Mobile Technologies for Learning

Gender	No	Mean	SD	Df	T	Sig.(2-tailed)
Male	624	3.34	0.42	1212	0.32	0.75
Female	590	3.37	0.39			
Total	1214					

According to Table 3, $t_{(1, 1212)} = 0.32$, and $p = 0.75$. It shows the specified hypothesis was not rejected as the value of 0.75 is higher than the alpha value of 0.05 produced by the t-value of 0.32. There is no discernible difference between undergraduate males and girls' opinions on the importance of mobile technology for learning, according to the indicated null hypothesis.

Ho2: There is no significant gender difference in undergraduates' perceived ease of use of mobile technologies for learning

In testing if there was gender difference in undergraduates' perceived ease of use of mobile technologies for learning, t-test was employed.

Table 4:

t-test on Undergraduates Gender Perceptions of the Ease of Utilizing Mobile Technologies for Learning

Gender	No	Mean	SD	Df	T	Sig. (2 tailed)
Male	624	3.36	0.42	1212	0.86	0.39
Female	590	3.34	0.41			
Total	1214					

Table 4 shows that $t_{(1, 1212)} = 0.86$, $p = 0.39$. This implies that the hypothesis was not rejected because the significance value provided by the 0.86 t-value—which is larger than the 0.05 alpha values—was 0.39. No discernible difference in undergraduate students' opinions on the ease of mobile technology for learning, according to the indicated null hypothesis.

Ho3: There is no significant gender difference in undergraduates perceived

attitude towards using mobile technologies for learning.

To determine gender difference in undergraduates' perceived attitude towards using mobile technologies for learning, the null hypothesis was put to the test using a t-test.

Table 5:
t-test Analysis of Undergraduates' Attitudes toward Using Mobile Technologies for Learning based on Gender

Gender	No	Mean	SD	Df	T	Sig.(2-tailed)
Male	624	2.09	0.39	1212	0.76	0.45
Female	590	2.11	0.39			
Total	1214					

Table 5 shows that $t_{(1, 1212)} = 0.76$ and $p = 0.45$. This shows that the hypothesis is not rejected. This is because the alpha value of 0.05 is exceeded by the significance value of

0.45, which is produced by the t-value of 0.76. The implication is that there is no appreciable difference in views toward adopting mobile

technology for studying between undergraduate males and girls. Both male and female students demonstrated extremely high levels of optimism, as indicated by the previous mean score for the undergraduates' general attitude.

Ho4: There is no significant gender difference in undergraduates' perceived intention to use mobile technologies for learning

To determine gender difference in undergraduates' perceived intention to use mobile technologies for learning, t-test was engaged.

Table 6:

t-test of Undergraduate Students' Intentions to Use Mobile Technologies for Learning, by Gender

Gender	No	Mean	SD	Df	T	Sig. (2-tailed)
Male	624	1.88	0.45	1212	0.06	0.96
Female	590	1.87	0.44			
Total	1214					

According to table 6, $t_{(1, 1212)} = 0.06$, and $p=0.96$. The significance level is 0.96 greater than the alpha level of 0.05. The stated hypothesis, in other words, was accepted. Therefore, there is no appreciable difference between the intentions of male and female undergraduate students to use mobile technology for learning.

Conclusion and Recommendations

In the selected south-west Nigerian universities, this study explores how gender influences the adoption of mobile learning technology. The research conducted for this paper found that the gender disparities were not particularly substantial based on the variables studied in terms of how beneficial or usable they perceived mobile technology to be for learning. The study also found that there was no noticeable difference in undergraduate males and females' attitudes toward and plans

to use mobile technology for learning. This demonstrated that female students are catching up to their male counterparts when it comes to using mobile devices. Therefore, regardless of gender, anyone can engage in activities involving mobile technology.

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