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## Perceptions on the Utilization of Mobile Technologies for Learning among Postgraduate Students

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### Abstract

This study determined the perceptions of the utilization of mobile technologies for learning among Postgraduate Students in Kwara State. The study adopted survey approach. The population for this study was made up of all the postgraduate students in Kwara State. Proportional sampling techniques were used to allocate a number of respondents in each school based on their estimated population using Israel Model. The instrument for data collection was an adapted questionnaire. Descriptive and Inferential statistics were used to answer the research question and test the stated hypotheses with the aid of statistical product and service solution (SPSS) version 20.0 at 0.05 level of significant. The findings indicated that postgraduate students had positive perception of the utilization and ease of use of mobile technologies for learning. No significant difference exists in the postgraduate students' perception of the utilization of mobile technologies for learning based on gender and the field of study. The study concluded that learning can be enhanced among postgraduates' students if appropriate mobile technologies are deployed for learning. Therefore, postgraduate students are encouraged to deploy mobile technology for learning irrespective of their gender.

### Keywords

Gender, mobile technology, perception

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## Introduction

Mobile technologies in this study include any portable, connected technology, such as basic mobile phones, smartphones, e-readers, netbooks, tablets, iPads and computers (United Nations Educational, Scientific and Cultural Organization, 2013). Mobile technologies related to education are mobile devices such as laptops, smartphones iPad and so on used by students to support learning activities. Mobile technologies have been gaining wider acceptance in education in recent years. School and government level initiatives have rolled out these technologies in the classroom (West, 2012). Potential benefits of using mobile technologies for learning include facilitating learning across contexts, facilitating contextual learning, and providing personalization in both personal and collaborative environments (Cochrane & Bateman, 2010). These potentials make mobile technologies seem ideal tools for learning. Mobile technologies such as mobile phones have evolved rapidly to become lightweight, more powerful and small enough to fit in one's pocket (Crompton, 2013). Smartphones and tablets, in particular, will continue to evolve in capacity and functionality, tending to replace laptops. We are now living in a mobile age where people use Internet-enabled mobile technologies anytime and anywhere to execute various activities. The most used mobile communication tools that help to access; use and process information quickly can be listed as follows: Smart mobiles, mobile computers, tablet computers, laptop computers, netbook, iPad, iPod touch, digital audio recorders, portable MP3 player, personal digital assistant, portable gadgets and USB memory (Agah & Husniye, 2018).

The characteristics of mobile technologies, which includes wide usage areas, time and space independence, and portability is remarkable. These features provided to the user, the idea of using mobile technologies in education. The use of mobile technologies in education has influenced the formation of mobile learning (Agah & Husniye, 2018). Mobile learning can be seen as the application of mobile or wireless devices to learn on the move (Park, 2011). Studies reported that m-learning is an extension of e-learning, but that it differs because it uses mobile technologies rather than computers as a medium (Keengwe & Maxfield, 2015). Park (2011) attributed the increasing popularity of mobile learning to innovations in application and social networking sites, including wikis, blogs, Twitter, Facebook, and Myspace, among others. Mobile learning also involves learning from different perspectives and the use of mobile devices to learn. Some benefits of m-learning over other forms of learning include life-long learning, learning inadvertently, learning in the time of need, learning independent of time and location, and learning adjusted according to location and circumstances (Korucu & Alkan, 2011).

Mobile technologies play a vital role in the contemporary educational system as it provides numerous opportunities for students to learn anytime and anywhere. The use of mobile technologies for learning provides opportunities for students to collaborate in the learning process, irrespective of gender, level, ability and disability. Through mobile technologies, students access the views, thought of educators, experts and researchers all over the globe and communicate directly with them (Sarkar, 2012). Mobile learning is emerging as a powerful medium delivering knowledge and changing students' expectations of learning anytime and anywhere. Current university students, who mostly belong to

Generation Y (and can be called the next-generation), are ideal candidates for m-learning because they were born into an emerging world of technology and have grown up surrounded by smartphones, laptops, tablets, and other gadgets. In times ahead, educational institutions will be forced to meet the changing requirements of learners to stay competitive. Nevertheless, before launching any m-learning initiative at the university level, students' perception of m-learning should be investigated (Cheon et al; 2012). Pollara and Broussard (2011) noted that most studies on mobile learning reported positive students' perception of mobile technologies used in the classroom. Students found mobile technologies engaging and useful (Lai et al; 2012). Baya'a and Daher (2009) reported that students saw mobile technologies as useful learning tools because they facilitated visualization, encouraged collaborative learning and enabled exploration of an outdoor environment. Researchers have done several types of research regarding the assessment of mobile learning in higher education in different countries. Alhajri (2016) indicated that students and lecturers both had positive perceptions of m-learning, and they agreed that m-learning could enhance the teaching and the learning process. However, it was found that some social and cultural issues might act as barriers to the adoption of m-learning. While students' perception towards mobile technologies use is positive, studies that report on how this positive perception is affecting their attitudes to learning is limited. The attitude in a general sense is seen as intensity and direction of the total of a person's inclinations, feelings, prejudices or bias, conceived notions, ideas, fears and other convictions about any specific objects or products (Kpolovie et al., 2014).

Some students have a favorable attitude, while others may have an unfavorable attitude towards a particular technology. The attitudes of postgraduates towards mobile technologies could influence how they use technologies for learning. Students who have positive attitudes towards mobile technologies are more likely to use them for learning, while negative attitudes could constrain the use of mobile technologies (Williams & Iruloh, 2014). The researcher presumed variations among postgraduate students' perception and attitude towards the utilization of mobile technologies to include gender and field of study. Gender is a socio-economic variable for analyzing roles, responsibilities, constraints, and needs of men and women in a given context. It also refers to the social and cultural constructs that each society assigns to behaviors, characteristics, and values attributed to men and women (Sanda & Kurfi, 2013). Daramola et al.(2016) posited that gender refers to the gender identity of an individual, regardless of the person's biological and outward gender. Gender can also be examined in males and females based on the individual's background and surrounding culture. Daramola (2013) noted that females are relatively more excited than males in embarking on any project but lack the confidence to carry it to a successful end without any assistance. Daramola further stressed that males interact independently and confidently with any electronic device while males depend on pairs and family members to build up confidence during their search. To boys, the most important task in research is gathering information resources and completing the project, whereas girls prefer to investigate and formulate. Field of study refers to studies intended to provide general knowledge and intellectual skills in students. It refers to the discipline of students in the universities, polytechnics or colleges. (Anaza, 2017). The field of study of students influences their utilization of mobile technologies. There is a variation in the level of utilization of mobile

technologies across the discipline. Tunkun, Nordin, and Bello (2013) revealed that field of study has a significant influence on both perceived and objective knowledge in favour of ICT related courses than others. This implies that for every field of study, there required level of ICT competence as some field of study requires higher skills in ICTs as it is used in their daily life. Despite the benefits of mobile technologies and variation in variables as its influences its usage in supporting students in their learning, the researcher observed that its potentials have not been fully realized among postgraduate students. Soetan et al;(2017) posited that most students currently underutilize mobile technologies facilities and applications, as students purchase expensive mobile technologies just for calling, text messaging, music, video streaming and social networking as WhatsApp, Facebook, Twitter, Instagram and so on.

Moreover, the researcher observed that some students who have the potential to utilise mobile technologies for learning are discouraged by lack of subsidized or inadequate Internet connectivity at their various learning institutions. Similarly, some postgraduate students still patronize hardcopy textbooks as sources of information rather than embracing online resources using mobile technologies that are more efficient and reliable (Soetan, 2017). Hence, the researcher intends to explore postgraduate students' perceptions of the utilization of mobile technologies for learning in universities in Kwara State. Specifically, this study explores i) perception of postgraduate students on the utilization of mobile technologies for learning based on perceived usefulness ii) determined the perception of postgraduate students on the utilization of mobile technologies for learning based on perceived ease of use iii) investigated the perception of postgraduate students on the utilization of mobile technologies for learning based on gender; and iii) examined the perception of postgraduate students on the utilization of mobile technologies for learning based on the field of study.

## **Literature Review**

### ***Mobile learning in higher education***

Mobile learning refers to using mobile and handheld IT devices, like Personal Digital Assistants (PDAs), mobile telephones, laptops, and tablet PC technologies, in teaching and learning. As computer and the Internet become essential tools for education, technology becomes more mobile, affordable, effective and straightforward to use. This offers many opportunities to widen participation and access to ICT, particularly the web (InfoDev, 2010). Mobile technologies like phones and PDAs are far more affordable than a personal computer and thus represent less costly access to the web (InfoDev, 2010). The introduction of the Tablet PC can now access the mobile Internet with much functionality than desktop computers. Education (HE) institutions are experiencing an influx of students' mobile technologies on their campuses. Mobile technology is one of the newest extensions of technological innovations which will be integrated into education. With the help of those devices, students learn faster outside the classroom by having quick access to the web and straightforward retrieval of required learning resources to stay alongside recent trend and development. Students need to update continuously his/her knowledge and mobile

technologies will function as tools for self-directed learning (Rakesh et al., 2016). Personal gratification and achievement in Mobile learning technologies hang on to different personal qualities.

The personal qualities required to adopt the latest technology are often divided into four categories: technical skills, learning preferences, attitude towards technology, and computer self-efficacy (Shih, Chen, Chang, & Kao, 2010). Students having required technical skills can better engage themselves within the use of the latest technology than those that don't have those skills. Different students have different learning styles and their preference for the tactic of learning - some students are easier within the online environment than others (Iqbal & Bhatti, 2016). Similarly, some users show a greater inclination towards using new technology if they need the power and confidence in accomplishing tasks using the proposed technology. The utilization of mobile technologies provides many positive outcomes for college kids, staff, and community. It improves writing skills and the gravity of students' research and increases student interest in learning and ownership of the training process.

There are reductions in lecture presentation instruction and a rise in project-based learning activities. (Lina & Angelin, 2017). Sundari (2015) observed that mobile technologies enable postgraduate students to exchange useful information with their classmates concerning their studies. Sundari (2015) further explained that this practice could positively influence the tutorial performance of scholars. Sarwar and Soomro (2013) observed that smartphone users have the chance to utilize their phones to urge educational benefits within their available time, regardless of their location. They indicated that "smartphone within and without the classroom make it easier for college kids and teachers to collaborate". Sarwar and Soomro (2013) further explained that students who would have omitted classes or lectures thanks to some unforeseen circumstances like leave or other health issue are ready to attend the lectures through their smartphones and continue with their work without falling behind. The opposite advantage of using mobile technologies in education includes the social and emotional presence and pedagogical change where learners are ready to learn anytime and anywhere, through mobile learning, which has emerged as an innovative learning approach (Rogers & Michelle, 2017).

### ***Studies on students' perception of the utilization of mobile technologies for learning***

Perception, during this context, is that the way by which something is regarded, understood, or interpreted. Postgraduate students adopt mobile technologies use in learning mainly due to their perceived benefits and importance to their studies and it'll help reinforce the training process. Therefore, users' perception of the utilization of mobile technologies in research is extremely vital to its adoption. Consistent with Sarrab, Al Shibli, and Badursha (2016), the key success factors concerning m-learning essentially depend upon students' desire and intellectual engagement in m-learning activities. Thus, examining students' perceptions and readiness to adopt m-learning is significantly important for successfully implementing this technology in education. Gikas and Grant (2013) conducted a study on student perspectives on learning with mobile technologies. The participants were students

from three universities within the US. Focus group interviews were used to collect the information. The findings show that the participants have good perceptions concerning the utilization of mobile devices. The themes that emerged from the study were the advantages and challenges of using mobile devices in learning. The benefits mentioned in Gikas and Grant's (2013) study are accessing information quickly communication and content collaboration, a spread of thanks to learning and situated learning. However, teachers got to consider some challenges which may occur when incorporating mobile devices in instruction. Gikas and Grant (2013) found several challenges are an anti-technology instructor in other classes, device challenges and device as a distraction.

Meanwhile, Shakeel, Muhammad, and Imran (2017) conducted a study on mobile usage and students' perception towards M-Learning. Therefore, the findings of this study indicated that students have a positive attitude towards m-learning. Also noted that a big difference is found within the perception of scholars belonging to different degree programs towards the usage of mobile phones in an academic context. It means educators and developers got to confine mind these differences when designing any m-learning program. Quite 60% surveyed indicated a positive perception towards m-learning. However, a big difference was found within the perception of scholars belonging to different disciplines towards m-learning during a study conducted at Makerere University within two courses where Moodle was used as a learning platform, (Asiimwe & Grönlund, 2015) reported that students had positive attitudes towards the utilization of mobile phones to access the university learning management systems, which enabled them to access learning materials, accomplish learning tasks, communicate and acquire better grades (Mtebe & Raisamo, 2014). Chu, Hwang, Tsai, and Tseng, (2010) also found that students have positive attitudes toward mobile learning.

### ***Gender factors on the utilization of mobile technologies for learning***

Sanda and Kurfi (2013) stated that gender is the fact of being a male or a female, especially within social and cultural differences. Bhuasiri, et al. (2011) explain that cultural dimensions like masculinity versus femininity, absence of individualistic perspective, and economic dependence play a neighborhood in creating barriers that prevent easy adaptation mobile technologies, particularly within the Third World countries. A gender situation has continued to increase interest among researchers in recent years and, therefore, the difference in terms of usage and adoption of mobile technologies within the teaching and learning processes. Several barriers are advanced as being liable for the varying degree of ICT uptake, especially among postgraduates. (Pessu & Danner, 2013). Palmen (2011) opined that barriers like interests, drive, experience, personality characteristics, abilities, self-efficacy, stereotypes, and socialization explains gender differences, especially against female postgraduates. Contributing to the dimension of gender disparity among postgraduate students, Palmen (2011) explain that the low embrace of ICTs by females at this level are often explained through the differences existing in how males and females gain unhindered access to technology, how they use them and their respective experiences in its use. Palmen further explained that of equal importance are the females' attitudes, confidence, and self-efficacy. Furthermore, Sanda and Kurfi (2013), highlights some factors that contribute

to the observed gender gap in ICTs. They listed factors like insufficient ICT infrastructure, low level of education, ICT skills, socio-cultural issues, and economic problems. To bridge this gap nevertheless, the researchers recommended an escalation in educational empowerment, economic empowerment, increase attitudinal adjustment and provision of affordable and adequate ICT infrastructures. McGinty and Moore (2008) opined that gender issues are at the forefront of impassioned ventilation regarding education. Gender remained a possible factor influencing ICT utilization as widely identified within the literature during a study on gender analysis of ICT use. Manda and Mukangara (2007) used a sample of 100 postgraduate students using sampling to pick the sample. Data were analyzed using cross-tabulation and qualitative descriptions. Manda and Mukangara (2007) further reported that gender is related to the utilization of ICT and male postgraduates' students were more likely to use ICT than female students were. Ahmad (2015) had a contrary result because it was revealed that there's no significant difference between males and females based on their utilization of mobile technologies for learning. It implies that male and feminine user of ICT resources has 50/50 percentage of use between them. Mostafa and Said (2017) conducted a study on students' attitudes towards the utilization of mobile technologies in e-Evaluation. Therefore, the findings indicated a statistically significant difference among the scholars regarding their gender where the differences were in favor of male students. However, the results revealed no statistically significant differences among the students' attitudes regarding their age, degree, and department.

## **Methodology**

### ***Research design, site, and participants***

The study adopted descriptive research of the survey type. It had been considered appropriate because the descriptive research method involves the systematic collection and analysis of knowledge collected from an outsized population that helps to explain the characteristics of population or event as they seem to support the phenomenon into account for this study without external manipulations by the researcher. The population for this study was made from all the postgraduate students in Kwara State. The target population contains 9,319 postgraduate students within the three selected universities in Kwara State. A stratified sampling technique was used to allocate various respondents in each school supported their estimated population using Israel Model (2012). Additionally, sampling was utilized in each school to select the 384 postgraduate students from the sampled universities to participate as the respondents during this study.

### ***Validity and reliability of the instruments***

Validity explains how well the collected data covers the actual area of investigation (Ghauri & Gronhaug, 2005). Validity means "measure what's intended to be measured" (Field, 2005). The instrument was validated for face and content validity by the researcher's supervisor and three other lecturers within the Department of Educational Technology, University of Ilorin, Ilorin, Nigeria. Following the lecturers' validation reports, some items of

the research instrument were corrected, adjusted and modified as directed to reinforce the validity. Reliability concerns the extent to which a measurement of a phenomenon provides a stable and consistent result (Carmines & Zeller, 1979). Reliability is additionally concerned with repeatability. For example, a scale or test is claimed to be reliable if repeat measurement made under constant conditions will give the same result (Moser & Kalton, 1989). A pilot study was administered from a specific university in Oyo State for the reliability of the research instrument. The research instrument was reliable at 0.84 for items on perception at 0.05 level of significance, using Cronbach Alpha SPSS statistical tool.

### *Data collection and analysis*

The instrument for data collection was an adapted questionnaire from David (1989) titled “Postgraduates’ perception on the use of mobile technologies in Kwara State (PPAMT)”. The instrument was divided into three sections (A, B, and C): Section A addressed the demographic data of the respondents; Section B elicited information on postgraduate students’ perceived usefulness of mobile technologies for learning, and Section C examined the postgraduate students perceived simple use of mobile technologies. The questionnaire responses for section B & C were rated on a 4-point Likert scale mode: Strongly Agree (SA); Agree (A); Disagree (D); and Strongly Disagree (SD). The researcher obtained a letter of introduction from the Head of the department, Educational Technology, University of Ilorin, to seek permission from the acceptable authority within the sampled schools to facilitate easy administration of the questionnaires. The researcher read and explained the aim of the study to the participants. The respondents got sufficient time to answer the questionnaire. After which, the researcher personally collected the answered questionnaire and reviewed the qualified and sufficiently completed questionnaire. Insufficient information or a doubtful answer like showing observable patterns was removed for those particular items only. Through the assistance of the statistical analyst, the researchers tabulated the data collected from the participants using Microsoft Excel and eventually process the data collected using SPSS (Statistical Package for Social Sciences).

The data collected were analyzed employing descriptive and inferential statistics. According to Bhat (2019), descriptive design may be a research design that aims to explain the participant or a phenomenon of the study. Moreover, it aims to answer the question which focuses on the demographic information of the study. This defines respondent characteristics, data trends, and comparison of groups validating existing conditions and duplicating research. To analyze the target of the study which were determining the characteristic of the participants concerning socio demographic characteristics, perceived usefulness and perceived simple use of mobile technology among postgraduates’ students for learning, descriptive statistics were used.

Moreover, the various specific statistical tools like frequency, percentage, mean, and variance were utilized to measure the quantitative variables to give an overview descriptive of the respondents in analyzing the info for socio-demographic characteristic, gender, field of study, perceived usefulness and perceived simple use of mobile technology for learning. Hence for the research questions, the researcher-designed questionnaire was structured on a four-point Likert scale, the selection rule was supported the mid-point of the dimensions

2.50. Therefore, items with a mean of 2.50 and above were considered agreed or positive responses, while items below 2.50 were considered disagreed or negative responses. Furthermore, to check the hypotheses, inferential statistics were employed. Hypothesis one was tested using an independent t-test. Independent t-Test was used to determine the mean of two groups that both groups are independent of one another (Kim, 2015). Using the independent t-test yielded on answering the target of finding the difference between male and female postgraduate students perceived simple use of mobile technologies for learning. To check hypothesis two was also tested with Analyses of variance (ANOVA). ANOVA was used to determine any statistically significant differences between the means of three or more independent (unrelated) groups. Hence using ANOVA, the researcher was able to determine the difference among Humanity and Social Science, Management, Natural Science, Science and Technology postgraduate students' utilization of mobile technologies for learning.

### ***Ethical consideration***

Ethical consideration was maintained through the period of data collection. The researcher ensured that respondents were not coerced to fill the questionnaire and respondents were allowed to participate voluntarily. Also, utmost confidentiality and secrecy of the respondents was maintained during the administration, collation, and report of research findings.

### **Findings and Discussion**

#### ***The perception of postgraduate students on the utilization of mobile technologies for learning based on perceived usefulness***

Table 1 revealed the perception of the utilization of mobile technologies for learning based on perceived usefulness. Based on a benchmark of 2.50 of a modified 4-point Likert scale, all the items have a mean value greater than the benchmark. This implies that postgraduate students agreed to each of the items. Significantly, postgraduate students believed that mobile technologies would assist them in building up successful lifelong learning habits (3.39); they stated that using mobile technologies enables them to accomplish postgraduate learning tasks more quickly (3.37); they claimed that using mobile technologies would increase their chances for better postgraduate learning achievement (3.34); they find mobile technologies useful in their postgraduate studies (3.28); and they averred that using mobile technologies would enable them to be more effective and productive in their research (3.17). Cumulatively, the grand mean of 3.31 > 2.50 indicates that the perception of postgraduate students on the utilization of mobile technologies for learning based on perceived usefulness was positive.

**Table 1.** *Perception of the utilization of mobile technologies for learning based on perceived usefulness among postgraduate students*

S/N	Questionnaires Items	Mean	Rank Order
1	Using mobile technologies would enable me to be more effective and productive in my research	3.17	5 <sup>th</sup>
2	Using mobile technologies would assist me in building up successful lifelong learning habits	3.39	1 <sup>st</sup>
3	I find mobile technologies useful in my postgraduate studies	3.28	4 <sup>th</sup>
4	Using mobile technologies enables me to accomplish postgraduate learning tasks more quickly	3.37	2 <sup>nd</sup>
5	Using mobile technologies would increase my chances for better postgraduate learning achievement	3.34	3 <sup>rd</sup>
<b>Grand Mean</b>		<b>3.31</b>	

***The perception of postgraduate students on the utilization of mobile technologies for learning based on perceived ease of use***

Table 2 revealed the perception of the utilization of mobile technologies for learning based on perceived ease of use. Based on a benchmark of 2.50 of a modified 4-point Likert scale, all the items have a mean value greater than the benchmark. It implies that postgraduate students agreed to each of the items. Significantly, postgraduate students believed that the utilization of mobile technologies is flexible, effortless and user-friendly (3.61); they believed that it is easy for them to become skillful at using mobile technologies (3.56); they stated that using mobile technologies makes it easier for them to access postgraduate course materials (3.40); they averred that their interaction with mobile technologies was clear and understandable; and they find the utilization of mobile technologies easy (3.28). Cumulatively, the grand mean of 3.43 > 2.50 indicates that the perception of postgraduate students on the utilization of mobile technologies for learning based on perceived ease of use was positive.

**Table 2.** *Perception of the utilization of mobile technologies for learning based on perceived ease of use among postgraduate students*

S/N	Questionnaires Items	Mean	Rank Order
1	Using mobile technologies makes it easier for me to access postgraduate course materials	3.40	3 <sup>rd</sup>
2	Utilization of mobile technologies is flexible, effortless and user-friendly	3.61	1 <sup>st</sup>
3	It is easy for me to become skillful at using mobile technologies	3.56	2 <sup>nd</sup>
4	I find the utilization of mobile technologies easy	3.28	5 <sup>th</sup>
5	My interaction with mobile technologies is clear and understandable	3.31	4 <sup>th</sup>
<b>Grand Mean</b>		<b>3.43</b>	

***Hypotheses testing***

Based on research questions 3-4, research hypothesis 1 and 2 were developed. The results related to hypotheses one and two formulated for the study in chapter one were shown in subsequent tables. All hypotheses were tested at a 0.05 level of significance.

*There is no significant difference between male and female postgraduate students' perception of the utilization of mobile technologies for learning*

**Table 3.** *T-test analysis of gender difference in the perception of postgraduate students on the utilization of mobile technologies for learning*

Gender	N	X	SD	df	t	Sig. (2-tailed)	Remark
Male	175	3.44	.35	376	1.163	.246	Accepted
Female	203	3.48	.37				

From Table 3, it can be deduced that there was no significant difference between male and female postgraduate students' perception of the utilization of mobile technologies for learning. This is reflected in the findings of the hypotheses tested  $df_{(376)}$ ,  $t = 1.163$ ,  $p > 0.05$ . Thus, the hypothesis states that "there is no significant difference between male and female postgraduate students' perception of the utilization of mobile technologies for learning" is accepted.

*There is no significant difference in the perception of postgraduate students on the utilization of mobile technologies for learning based on the field of study*

**Table 4.** *ANOVA of difference in perception of postgraduate students' utilization of mobile learning technologies for learning based on field of study*

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	.582	3	.194	1.499	.214
Within Groups	48.395	374	.129		
Total	48.977	377			

Table 4 revealed the ANOVA of difference in perception of postgraduate students' utilization of mobile learning technologies for learning based on the field of study. The result revealed that "There was no significant difference in the perception of postgraduate students on the utilization of mobile technologies for learning based on the field of study" ( $F_{(3,377)} = 1.499$ ,  $p > 0.05$ ). The null hypothesis is therefore accepted.

## Discussion

This study investigated postgraduate Students' Perception and Attitude towards the utilization of Mobile Technologies for Learning in Kwara State. Research question one seeks to examine the perception of postgraduate students on the utilization of mobile technologies for learning based on perceived usefulness. Different items were tested and from the data gathered, it was revealed that most postgraduate students have positive perception towards the utilization of mobile technologies for learning based on perceived usefulness. Research question 2 determined the perception of postgraduate students on the utilization of mobile technologies for learning based on perceived ease of use. This sought to check whether postgraduates have a positive or negative perception towards the use of mobile technologies for learning. From the data analyzed, it was revealed that postgraduate students have positive perception towards the use of mobile technologies for learning base on perceived ease of use. This is seen in the grand mean score. This conforms to Pollara and Broussard (2011), whose study noted that most studies on mobile learning reported positive students' perception of mobile technologies use for learning. Students found the use of mobile technologies engaging and useful (Lai, Lai, Shen, Tsai, & Chou, 2012).

The influence of male and female postgraduate students on their perception towards the utilization of mobile technologies for learning was research question 3 and hypothesis 1. From the analyzed data, it was deduced that there is no significant difference between male and female postgraduate students' perception of the utilization of mobile technologies for learning. It showed that male and female postgraduate students equally utilize mobile technologies for learning. This finding is in line with the study of Ahmad, (2015) that revealed that there is no significant difference between male and female base on their utilization of mobile technologies for learning. It was revealed in the study that male and female users have a 50/50 percentage of use of mobile technologies.

Research question 4 and hypothesis 2 sought to determine the influence of the field of study and its significant difference in postgraduate students' perception towards the utilization of mobile technologies for learning. The findings in this study revealed no significant difference among postgraduate students on their perception towards the utilization of mobile technologies for learning based on the field of study. This finding does not conform to the findings of Shakeel, Muhammad, and Imran (2017), where it was revealed that there is a significant difference in the perception of students towards the utilization of mobile technologies for learning base on the area of specialization.

## Conclusion

This study examined postgraduate students' perception and attitude towards utilising mobile technologies for learning in Kwara State. The findings revealed that postgraduate students show a positive perception of the utilization of mobile technologies for learning. The findings also established no significant difference between male and female postgraduate students' perception of the utilization of mobile technologies for learning. This

serves as eye-opener that there is no gender bias in the utilization of mobile technologies for learning. Finally, the field of study did not influence the utilization of mobile technologies among postgraduate students for their learning in Kwara State. The study, therefore, recommended that Postgraduate students should be encouraged to deployed mobile technology for research irrespective of their gender since there is no significant difference between male and females' postgraduates' students in their perception of the use of mobile technology for research, and university authority should ensure adequate power supply and internet facility to postgraduates students for easy access and utilization of mobile technologies for learning irrespective of the field of study.

### Disclosure statement

The authors declare no conflict of interest in the design of the study; in the collection, analysis, or interpretation of data, in the writing of the manuscript, or in the decision to publish the results.

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