
LECTURERS' PERCEPTION AND BEHAVIOURAL INTENTION TOWARDS ADOPTION OF E-LEARNING IN TERTIARY INSTITUTIONS IN NIGER STATE

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Abstract: This study examined lecturers' perceptions and behavioural intentions towards adoption of e-learning in tertiary institutions in Niger State, Nigeria. Also, it examined both male and female lecturers' computer self-efficacy (CSE), perceived usefulness (PU) of e-learning, perceived ease of use (PEU) of e-learning and behavioral intention to use (BIU) e-learning. The study used a descriptive survey research design. The study made use of all six (6) Niger State's higher education institutions. E-learning utilization questionnaire made up of 17 items of five point likert scale with reliability indices computed by Ong and Lai (2006) was used for data collection. The instrument was validated and pilot tested. Data obtained from pilot test were analysed using Cronbach' Alpha and reliability coefficients of 0.91 (CSE), 0.92 (PU), 0.89 (PEU), and 0.87 (BU) were obtained. Data were analyzed using t-test and one-way ANOVA to test the stated hypotheses. The significance levels were taken as 0.05. The findings of the study showed that there is significant difference between the mean value of male and female lecturers computer self-efficacy towards the adoption of e-learning ($t = 2.505$, $df = 608$, $p = 0.013$); there is no significant difference between the mean value of male and female lecturers perceived usefulness of e-learning ($t_{value} = 1.791$, $df = 607$, $p = 0.074$); there is no significant difference between the mean value of male and female lecturers perceived ease of use of e-learning ($t_{value} = 0.015$, $df = 607$, $p = 0.098$) and there

is significant difference between the mean value of male and female lecturers behavioral intention to use ($t_{value} = 2.175$, $df = 607$, $p = 0.030$) e-learning in tertiary institutions in Niger State. Similarly, the result revealed that, less, moderate and highly experienced lecturers have similar attitude and behavioral intention towards integrating e-learning into Nigerian research institutions of higher learning. Based on the findings, it was recommended that lecturers' should be well trained in specific methods in which they could use electronic devices to enhance teaching and curricular for teaching that will inculcate the use of e-learning infrastructures by lecturers and students.

Keywords: *Lecturers, Perception, Behavioural Intention E-Learning, Tertiary Institutions*

I. INTRODUCTION

Information and communication technologies (ICTs) have been a magnificent innovation in higher education, altering the way that instruction is provided and understood. The landscape of higher education is changing constantly due to the rapid advancement of ICT (Singh 2017; Priya, Elayampalayam & Nadu 2018). As a result of the modifications, e-learning has emerged as a new paradigm for education (Al-Samarraie *et al.*, 2018; Ting, Smith & Gomez 2018). Students enrolling in higher education institutions have become increasingly tech-savvy over time, spending a lot of time online for social or educational objectives (Azhar, Kim & Salman 2018; Mládková 2017). Higher education institutions can be divided into two categories: full contact universities, which entails in-person instruction between lecturers and students, and distance education institutions where teaching and learning activities take place in remotely either synchronously or asynchronously.

In full contact universities, e-learning is a significant innovation as it alters the way education is traditionally provided to students by introducing a new paradigm of delivery (Flavin & Quintero 2018). Ansong *et al.* (2016) defined traditional learning as the instruction given in a classroom setting at a university with full contact. The advent of e-learning is bringing new methods of instruction that are upending the established ones. Thus, a fundamental knowledge of behavioural intention towards the adoption of e-learning becomes important. E-learning platforms are a specific software systems intended for open education and learning environments, encompassing online learning resources and online learning assistance. Students may access interesting, relevant knowledge and learning opportunities at any time and place via e-learning. A participant's choice to employ technology as a behavioural tool determines how e-learning is implemented (Al-Emran,

et al., 2020; Al-Emran, *et al.*, 2020). Perceived usefulness and perceived ease of use are two technical aspects that users behave towards in a way that the technology acceptance model (TAM) characterises as behavioural intentions (Salloum, *et al.*, 2019; Al-Emran, *et al.*, 2020).

Successful e-learning adoption is correlated with behavioural intention to use (BIU) ICT technology (Chang, Hajiyev & Su 2017; El-Masri & Tarhini 2017). A person's behavioural intention to adopt e-learning refers to how strongly they want to utilise e-learning in the process of instructional delivery (Teo, 2011). From literature reviewed, factors identified to have an impact on lecturers' BIU e-learning, either directly or indirectly include: Perceived ease of use (PEU) is the user's assumption that a particular technology system is simple to use, while perceived usefulness (PU) is the user's belief that utilising a particular system will generally improve job performance (Sugandini *et al.*, 2018; Teo, 2011). The PU and PEU of lecturers influence how they will respond to the use of e-learning. The study conducted by Nikou and Economides (2017) showed that a system's usability and convenience of use have a substantial impact on BIU. Similarly, Teo (2011) concluded that while PU indirectly influences BIU through PEU, it also directly influences BIU and PEU. These findings are consistent with the that made by Davis (1989) in the Technology Acceptance Model (TAM) and Venkatesh *et al.* (2003) in the Unified Theory of Acceptance and Use of Technology (UTAUT).

Research was conducted by Jameel *et al.* (2022) to examine the effect of technology acceptability on academics' behavioural intention (BI) to use e-learning at three private universities in Iraq that have incorporated the technology. Stratified sampling was employed in the study to guarantee that all population members were equally represented. The movement control order during the COVID-19 epidemic caused academics to receive surveys via Google Form, which were used to collect data. Performance Expectancy (PE), Effort Expectancy (EE), Social Influences (SI), Facilitating Conditions (FC), and a new component, Personal Innovativeness (PI), were the components of the Unified Technology Acceptance and Use Technology (UTAUT) that were used in the study. After obtaining 187 valid replies, the structural equation model was used to analyse the data. According to the findings, whilst SI and PI had a little effect on BI's propensity to use e-learning, PE, EE, and FC enhanced academics' readiness to do so. The results of the study suggested that higher

education policymakers should improve the technology infrastructure of their institutions and give lecturers adequate training to support remote learning.

Similarly, Teo and Lee (2010) defined Attitude towards Use (ATU) as a lecturer's response to and willingness to employ technology. Teo's (2011) study shown that an individual's BIU towards technology has direct impact on their ATU. This is supported by the finding of Mosa, Mahrin, and Ibrahim (2016) whose study showed that attitude is a major factor in predicting the general preparedness of e-learning adoption. Hence, these studies revealed that, e-learning adoption is influenced by ATU.

The successful application of e-learning depends on lecturers' expertise, comprehension, and adoption of e-learning (Xhaferi & Bahiti 2018). This is due to the fact that institutions of higher learning with full contact have seen an exponential surge in the adoption of e-learning as a result of the COVID-19 epidemic. Self-efficacy appears to be driving the adoption of e-learning in higher education institutions, which is contributing to the sector's development in use (Al-Samarraie *et al.*, 2018). Similarly, Mehka *et al.* (2019) added that, self-efficacy is the conviction and understanding that one can do a particular job. In contrast to ineffective people, who are less likely to take advantage of the enabling opportunities offered by social systems and are readily deterred by institutional obstacles, effective people seize opportunities with speed and come up with creative solutions to get around institutional constraints or alter them through collaborative action (Mehka, *et al.*, 2019). The fact that lecturers may use laptops, smartphones, tablets, and other computers to browse the internet and even perform basic troubleshooting demonstrates how effective they are. The role of self efficacy influences both an individual's intended and actual behavioural actions. Electronic research service has employed self-efficacy, as evidenced by the literature on e-learning (Mikalef, *et al.*, 2016). In line with previous research, which found a significant correlation between self-efficacy and the intention to continue using e-learning (Ugur *et al.*, 2018). Similarly, this study posited that lecturers who have high self-efficacy are more likely to use the university's e-learning platforms consistently, while lecturers with low self-efficacy should experience the opposite.

An appraisal of nearly all of South Africa's 26 universities have adopted some kind of online learning, primarily through the use of learning management systems, according to an assessment of the universities conducted by DHET 2020. Many studies on ICTs have looked at descriptive models in using behaviour and the adoption of technologies that help forecast adoption (Dwivedi *et al.* 2019; El-Masri & Tarhini 2017). Given that universities are increasingly using e-learning to implement teaching and learning. Hence, it is important to consider lecturers' behavioural intentions to use these e-learning technologies. For this reason, it is necessary to investigate lecturers' behavioural intentions towards the use of e-learning in tertiary institutions in Niger State, Nigeria.

Research Objectives?

Research Hypotheses

The following null hypotheses were formulated and tested in the study:

- (i) There is no significant difference in the mean rating of male and female lecturers' computer self-efficacy
- (ii) There is no significant difference in the mean rating of male and female lecturers' perceived usefulness of e- learning
- (iii) There is no significant difference in the mean rating of male and female lecturers' perceived ease of use of e-learning
- (iv) There is no significant difference in the mean rating of male and female lecturers' behavioral intention to use e-learning.

II. METHODOLOGY

The research design utilised in the study was a descriptive survey. The study population comprised of 1820 lecturers in Niger State's higher education institutions, which include universities, polytechnics, and colleges of education. These institutions use e-learning as a teaching tool in their research institutes. A total of eight hundred teachers from the different departments of the different institutions received questionnaires. Six hundred and forty-nine questionnaires constituting 81% out of the 800 that were sent, were returned. 609 questionnaires were utilised for the analysis after eliminating the invalid ones. Due to respondents' frequent skipping of items, 40 questionnaire were

invalid. A drop-off method was used to distribute the questionnaire (Aaker *et al.* 2004). In accordance with the logic of this methodology, the researcher explained to the lecturers at the institutions the aim of the study, the steps involved in filling out the questionnaire, and how to address any queries they may have about any of the statements on the questionnaire before hand-delivering the questionnaire at random to them. A frequency analysis was conducted using the survey data. 23% (138) of the respondents were female and 77% (471) were male.

The research instrument used in the study was an adopted questionnaire named E-learning Adoption Questionnaire (EAQ) of 17 items based on five-point likert scale ranging from 5 (Strongly Agree) to 1 (Strongly Disagree). There is a paper and pencil version of the questionnaire available. Completing the questionnaire manner takes about five minutes. The response that most closely matches the respondent's description should have an X next to it.

III. RESULTS

Hypotheses One

There is no significant difference in the mean rating of male and female lecturers' computer self-efficacy.

In order to test this hypothesis, t-test was used to analyze the mean scores. The summary of this analysis is shown in table 1.

Table 1: t-test analysis of male and female lecturers' computer self-efficacy

Variable	Number of sample	df	Mean (X)	SD	t – value	p-value
Male	471		244.00	92.483		
		607			2.505*	0.013
Female	138		266.12	86.803		

* = significant $P < 0.05$

Table 1 shows the mean value for male and female lecturers' computer self-efficacy. Male lecturers had mean value of 244.00 and female lecturers' with mean value of 266.12 respectively. The mean value for male differ significantly from that of the female counterparts ($t_{\text{value}} = 2.505$, $df = 607$, $p = 0.013$). On this basis, hypothesis one rejected. Therefore, there is significant difference

between the mean value of male and female lecturers computer self-efficacy towards the use of e-learning in tertiary institutions in Niger State.

Hypotheses Two

There is no significant difference in the mean rating of male and female lecturers' perceived usefulness of e- learning.

In order to test this hypothesis, t-test was used to analyze the mean scores. The summary of this analysis is shown in table 2.

Table 2: t-test analysis of male and female lecturers' perceived usefulness of e-learning

Variable	Number of sample	df	Mean (X)	SD	t – value	p-value
Male	471	607	334.55	77.350	1.791 ^{ns}	0.074
Female	138		347.46	63.597		

Not significant $P > 0.05$

Table 2 shows the mean value for male and female lecturers' perceived usefulness of e-learning. Male lecturers had mean value of 334.55 and female lecturers' with mean value of 347.46 respectively. The mean value for male lecturers did not differ significantly from that of the female counterparts ($t_{\text{value}} = 1.791$, $df = 607$, $p = 0.074$). On this basis, hypothesis two is not rejected. Therefore, there is no significant difference between the mean value of male and female lecturers perceived usefulness of e-learning in tertiary institutions in Niger State.

Hypotheses Three

There is no significant difference in the mean rating of male and female lecturers' perceived ease of use of e-learning.

In order to test this hypothesis, t-test was used to analyze the mean scores. The summary of this analysis is shown in table 3.

Table 3: t-test analysis of male and female lecturers' perceived ease of use of e- learning

Variable	Number of sample	df	Mean (X)	SD	t – value	p-value
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Male	471	260.56	88.463	0.015 ^{ns}	0.988
		607			
Female	138	260.69	88.936		
Not significant P > 0.05					

Table 3 shows the mean value for male and female lecturers' perceived ease of use of e-learning. Male lecturers had mean value of 260.56 and female lecturers' with mean value of 260.69 respectively. The mean value for male lecturers did not differ significantly from that of the female counterparts ($t_{\text{value}} = 0.015$, $df = 607$, $p = 0.098$). On this basis, hypothesis three is not rejected. Therefore, there is no significant difference between the mean value of male and female lecturers perceived ease of use of e-learning in tertiary institutions in Niger State.

Hypothesis Four

There is no significant difference in the mean rating of male and female lecturers' behavioral intention to use e-learning.

In order to test this hypothesis, t-test was used to analyze the mean scores. The summary of this analysis is shown in table 4.

Table 4: t-test analysis of male and female lecturers' behavioral intention to use e-learning

Variable	Number of sample	df	Mean (X)	SD	t – value	p-value
Male	471	607	324.73	82.763	2.175*	0.030
Female	138		341.67	71.884		

* = significant P < 0.05

Table 4 shows the mean value for male and female lecturers' behavioural intention to use e-learning. Male lecturers had mean value of 324.73 and female lecturers' with mean value of 341.67 respectively. The mean value for male lecturers differ significantly from that of the female counterparts ($t_{\text{value}} = 2.175$, $df = 607$, $p = 0.030$). On this basis, hypothesis four is rejected.

Therefore, there is significant difference between the mean value of male and female lecturers behavioral intention to use e-learning in tertiary institutions in Niger State.

Discussion of Results

Table 1 presents the results, which indicate that the female lecturers had a higher mean value of e-learning Computer Self-Efficacy (266.12) than the male lecturers (244.00). The t-value of 2.505, which is significant at 0.05 levels, further supports this finding. This suggests that the mean Computer Self-Efficacy score of male and female lecturers differed statistically significantly ($t_{\text{value}} = 2.505$, $df = 607$, $p = 0.013$). The null hypothesis was subsequently rejected as a result. The mean value of the male and female lecturers' perceived usefulness of e-learning in tertiary institutions in Niger State was presented in Table 2. The mean value for male lecturers was 1.791, $df = 607$, $P = 0.074$, which was not significantly different from the mean value for their female counterparts. Thus, hypothesis two was not rejected. This indicates that there is no significant difference between the mean value of male and female lecturers' perceived usefulness of e-learning in Niger State's higher education institutions.

More so, Table 3 results indicate the mean value of perceived ease of use for lecturers who are male and female. 260.56 was the mean value for male lecturers and 260.69 was the mean value for female lecturers, respectively. Male and female lectures' mean values were not significantly different from one another ($t_{\text{value}} = 0.015$, $df = 607$, $p = 0.098$). In light of this, hypothesis three is accepted. The mean value of the perceived ease of use of e-learning by male and female lecturers at Niger State's higher institutions is therefore the same. The mean value for behavioural intention to use e-learning among male and female lecturers is displayed in Table 4. The mean value for male and female lecturers was 324.73 and 341.67, respectively. Male lecturers mean values are significantly different from female lecturers' ($t_{\text{value}} = 2.175$, $df = 607$, $p = 0.030$). Thus, hypothesis number four is rejected. Consequently, the mean behavioural intention of male and female lecturers to use e-learning in Niger State's higher institutions differs significantly.

The study concurs with Teo (2011) who found out that perceived ease of use increases behavioural intention to use indirectly, while perceived usefulness directly influences behavioural intention to use. This research finding agrees with the findings of Nikou and Economides (2017), who noted

that instructors' attitudes towards e-learning adoption are influenced by their perceptions of its utility and usability. The study also revealed that behavioural intention to use is significantly impacted by a systems usefulness and its ease of use. This finding is line with that of Jameel *et al.*'s (2022) study, who found that perceived expectancy, effort expectancy, and facilitating conditions increased academics' willingness to use e-learning and had a positive and significant impact on behavioural intention, but that social influence and personal innovativeness had no effect on behavioural intention to use e-learning. Perceived ease of use (PEU) is the user's assumption that a particular technology system is simple to use, while perceived usefulness (PU) is the user's belief that utilising a particular system will generally improve job performance, as defined by Sugandini *et al.* (2018) and Teo (2011).

IV. CONCLUSION

The study concluded that gender disparities was revealed with regard to the e-learning adoption, which include computer self-efficacy, perceived usefulness, and perceived ease of use and behavioral intention to use. The study also settled that there is a connection between lecturer's gender and adoption of e-learning. Both male and female lecturers embrace the use of e-learning in their instruction.

V. RECOMMENDATIONS

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

1. Lecturers ought to be well-qualified on the adoption of e-learning. Professionals should be hired to develop training materials and train lecturers on the adoption of e-learning.
2. The development of curricula that will encourage lecturers and students to use e-learning infrastructures is necessary.
3. Sufficient power supplies must to be available within and outside the school to encourage the usage of electronic gadgets for instruction and learning.
4. In order to guarantee dependable internet connections for lecturers and students, higher education institutions should sign agreements with ISPs like MTN, Airtel, Etisalat, and Glo to provide continuous supply of internet.

5. To make it simple for academic institutions to access instructional materials from these websites, they should connect with or register with organisations that publish educational resources or websites.
6. For lecturers and students to access and distribute information, all institutions should either update their websites or create new ones. Lecturers should be able to upload their course materials on such a website. Additionally, previous projects must be posted online so that lecturers and students can easily access them. The website need to provide unrestricted hosting for their institutions' wikis, blogs, and e-journals.
7. In order to supply lecturers and students with affordable electronic gadgets, universities, polytechnics, and colleges of education should collaborate with commercial businesses. This electronic device doesn't have to be an expensive laptop; it could also be any kind of electronic device that can store, copy, display, or record data, like a PDA, an MP5, or a phone with WAP capability. Additionally, students should receive the appropriate instruction on how to use these gadgets to enhance their learning.

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