

## Computer self-efficacy and motivation to use e-learning systems by LIS undergraduate students in Oyo State, Nigeria

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### Abstract

This study investigated the influence of computer-self efficacy on motivation to use e-learning systems by Library and Information Science (LIS) undergraduates of Ajayi Crowther University, Oyo and Lead City University, Ibadan, Oyo State Nigeria. The study, adopting descriptive survey research design, administered questionnaire to 129 LIS undergraduates. Perceived usefulness and perceived ease of use were the sub-constructs of motivation to use e-learning systems. Mastery experience, vicarious experience, social persuasion and emotional arousal were used to measure computer self-efficacy. Frequency count percentages and mean were used for descriptive analyses. Findings reveal high perception of usefulness and ease of use by the LIS undergraduates. The results also suggest high level of computer self-efficacy among LIS undergraduates of the two selected private universities in Oyo State, Nigeria. The authors recommend that library management of the universities should continue to encourage computer related skills and the use of electronic learning systems among undergraduates.

### Keywords

E-learning systems, computer self-efficacy, perceived usefulness, perceived ease of use, library

## 1. Introduction

E-learning systems are web-based, technology-driven platforms that facilitate computerized learning and virtual classrooms. These systems deliver educational content through a variety of channels, including the internet, local intranet/extranet, audio or video recordings, satellite TV, and CD-ROMs. Additionally, e-learning systems can be viewed as web-enhanced, as they combine traditional classroom instruction with online elements such as course outlines, lecture notes, and links to web-based resources. (Alkhawaja and Halim, 2019). This view is supported by Wicaksono and Anita (2020) who defined e-learning as a web-dependent environment where students may be required to use the internet to access courses or important elements of the programme such as online project, thesis, and dissertation, among others.

Many scholars regard Technology Acceptance Model as a useful and popular model for studying user's acceptance of technology, which includes an e-learning system (Katamba, Salimatu and Musa, 2018; Bamigbola, 2021; Okuonghae and Tunmibi, 2024). The model posits that the acceptance of a technology hinges on two primary factors: perceived ease of use and perceived usefulness. In the context of this research, "perceived ease of use" is defined as the extent to which undergraduate students studying Library and Information Science (LIS) believe that utilizing a specific system would be effortless. "Perceived usefulness" refers to the degree to which these LIS undergraduate students think that a particular system would enhance their academic performance. Undergraduates' motivation to use such systems can be discerned from their drive and actions. This study contends that undergraduates' inherent motivation to engage with an e-learning system can be attributed to their perceptions regarding the system's utility and user-friendliness.

This study also considered computer self-efficacy as a determinant in motivating an undergraduate to use an e-learning system. Self-efficacy, as used in this study, refers to an undergraduate's confidence about his or her capabilities to execute a specific task within a given context. Computer self-efficacy is the degree to which an individual believes that he or she has the ability to perform a specific task or job using the computer. It is the personal judgment that an individual makes about his or her ability to accomplish a task with the use of computer (Stajkovic, Bandura, Locke, Dongseop and Kayla, 2018).

Computer self-efficacy constructs which are mastery experience, vicarious experience, social persuasion and emotional arousal were adopted for this study from social cognitive theory by Albert Bandura (Stajkovic, Bandura, Locke, Dongseop and Kayla, 2018). Mastery experience contributes to boosting self-confidence when performing a task, as prior successful experiences are expected to provide students with a sense of support and self-assurance. Vicarious experience, on the other hand, involves learning from the triumphs and setbacks of others. In the context of this study, observing others succeed or struggle in their use of e-learning systems may influence the computer self-efficacy of undergraduate students. Social persuasion relates to situations in which an individual is influenced by the opinions of others, leading them to believe in their capability to successfully complete a specific task. The fourth construct, emotional arousal, can be defined as the bodily sensations an individual experiences while engaged in a task. We, therefore, assumed that a LIS undergraduate who has

high self-efficacy in working on the computers will be motivated to accept and use the e-learning systems for academic activities.

The main objective of this research paper is to investigate the influence of computer-self efficacy on motivation to use e-learning systems by LIS undergraduates of two selected private universities in Oyo State Nigeria. These private universities are Ajayi Crowther University, Oyo and Lead City University, Ibadan. The researchers chose these two private universities because, at the moment, they are the only universities offering Library and Information Science as a course of study at undergraduate level in Oyo, State, Nigeria. The first objective is to examine the motivation to use e-learning system by LIS undergraduates of the selected two private universities in Oyo state, Nigeria while the second objective examines their computer self-efficacy.

## Literature Review

In 1989, Fred Davis used the Technology Acceptance Model (TAM) to explain computer usage behavior. He focused on the general predictors of computer acceptance that could guide in explaining user's behavior for variety of computing technologies. In the model, Davos discussed two specific perceptions that could determine usage of a technology. These are perceived usefulness and perceived ease of use. Perceived usefulness could be seen as the subjective likelihood of a potential user, that usage of certain computing technologies would improve his or her actions. Perceived ease of use, on the other hand, could be defined as the degree to which the potential users expect the computing technology to be effortless (Davis, 1989).

Social cognitive theory, by Albert Bandura, emphasizes the critical role of self-beliefs in human cognition, motivation, and behavior. It gives prominence to self-system that allows individuals to exercise a measure of control over their thoughts, feelings and actions (Bandura, 1986, 1997). Social cognitive theory suggests that individuals' beliefs in their self-efficacy contributes to the type of person they become and their achievements. According to the theory, the four major sources of self-efficacy are mastery experience, vicarious experience, social persuasion and emotional arousal (Bandura, 1997; Stajkovic, Bandura, Locke, Dongseop and Kayla, 2018). Technology Acceptance Model or Social cognitive theory has been adopted in studying usage of electronic learning systems (Popoola and Adedokun, 2021; Yusoff, Muhammad, Zahari, Pasah and Robert, 2009; Ramayah and Aafaqi; 2004).

In a study carried out by Popoola and Adedokun (2021) on computer self-efficacy, computer anxiety, cognitive skills, and use of electronic library resources by social science undergraduates in a tertiary university in Nigeria. Using survey research design, questionnaire and stratified random sampling to select 869 undergraduates across five departments in the social sciences, they observed significant relationship between the three independent variables, as combined, and use of electronic library resources by the respondents. They also observed that computer self-efficacy, when separated from the others, had significant relationship with the use of electronic library resources of the respondents.

In a different but related study, Sadiku and Kpakiko (2017) discovered that there is an association between the use of library and student's use of library electronic resources in Nigeria. They also found that students who had computer competence showed interest in use

of library's electronic resources and also exhibit higher level of self-efficacy. In another similar study, Sadiku, Issa, Salman, Omopupa and Rabi (2017) studied the influence of users' computer self-efficacy and perception on users' satisfaction with electronic libraries in Northern Nigerian universities. Their study revealed that computer self-efficacy of users with electronic libraries was high, although there was low perception of electronic libraries. They also observed a strong correlation between perceptions and satisfaction with the electronic libraries. Hence, they argued that the level of computer self-efficacy and perception could be influenced by the satisfaction students derived from use of electronic libraries in the universities in Northern Nigeria.

Also, in a research work carried out in a different country, on the usage of e-library among students in a public university in Malaysia, Yusoff, et al. (2009) found a positive relationship between computer self-efficacy and perceived ease of use. The authors adopted convenient sampling and questionnaire as data collection instrument. In a related study, Ramayah and Aafaqi (2004) studied the role of self-efficacy in electronic library usage among 704 university students from four different schools of a public university in Malaysia. These schools are school of humanities, school of mass communication, school of chemistry and school of biology. Their findings indicate that perceived ease of use and perceived influence could be impacted by self-efficacy when predicting electronic library usage. Their findings also indicate that perceived ease of use, perceived and self-efficacy could directly impact electronic library usage.

## 2. Methodology

The descriptive survey research design was adopted for this study. The population of this study consists of all LIS undergraduates on full-time programme in Ajayi Crowther University, Oyo (44 undergraduates) and Lead City University, Ibadan (85 undergraduates). A total of 129 undergraduates were selected from both schools, which are in Oyo State, Nigeria. Total enumeration, which is a data collection technique in which data is collected from all members of the population, was adopted and questionnaire was used for data collection. We also adopted frequency count percentages and mean in analyzing the two objectives.

## 3. Results and Discussion of Findings

Table 1: Motivation to Use of E-Learning System among LIS Undergraduate Students of Private Universities in Oyo State, Nigeria

Items	SA	A	SD	D	Mean
<b>Perceived Usefulness</b>					
I have more confidence in using an E-learning System because it improves my academic achievement	81.1%	18.9%	0%	0%	3.81
My confidence in the usage of the E-learning system increases as I accomplish tasks more easily	54.1%	45.9%	0%	0%	3.54
E-learning system makes learning easier for me	59.8%	34.4%	5.7%	0%	3.54
I find E-learning System useful for my academic performance because it save time	55.7%	38.5%	5.7%	0%	3.50

<b>Average Mean</b>					<b>3.60</b>
<b>Perceived Ease of Use</b>					
I am skillful at using E-learning System	53.3%	45.9%	0.8%	0%	3.52
I can interact with E-learning System in a clearly and understandable way	55.7%	39.3%	4.1%	0.8%	3.50
I find it easy to access notes using E- learning System	48.4%	51.6%	0%	0%	3.48
I do not have problems when using E-learning system because it is easy to use	44.6%	45.5%	9.1%	0.8%	3.34
<b>Average Mean</b>					<b>3.46</b>

Key: SA = strongly agree; A = agree; D = disagree; SD = strongly disagree.

Decision rule: low mean is < 2.5, moderate mean is = 2.5 and high mean is > 2.5

From Table 1, majority of the respondents agreed on items relating to perceived usefulness and perceived ease of use. The cumulative mean scores for perceived usefulness and perceived ease of use are 3.60 and 3.46 respectively. Therefore, the mean scores for the sub-constructs of motivation to use e-learning systems among the respondents indicate a high perception of usefulness and ease of use of the e-learning systems.

Table 2: Computer Self-Efficacy of LIS Undergraduate Students in Private Universities in Oyo State, Nigeria

Items	SA	A	SD	D	Mean
<b>Mastery Experience</b>					
E-learning system makes learning easier for me	73.0%	27.0%	0%	0%	3.73
I have more confidence in using an E-learning System because it improves my academic achievement	71.9%	27.3%	0.8%	0%	3.71
My confidence in the usage of the E-learning system increases as I accomplish tasks more easily	55.4%	43.0%	1.7%	0%	3.54
<b>Average mean</b>					<b>3.66</b>
<b>Vicarious Experience</b>					
I love to observe how others make use of computers	69.4%	25.6%	5.0%	0%	3.64
I compare my computer skills with the skills of other students	51.6%	35.2%	12.3%	0.8%	3.38
I take note of my progress in use of e-learning system	49.6%	43.8%	5.8%	0.8%	3.42
<b>Average mean</b>					<b>3.48</b>

<b>Social Persuasion</b>					
My level of confidence in use of e-learning system depends on the opinion of others	46.7%	45.0%	5.0%	3.3%	3.35
I have more confidence in using e-learning system because other students believe I know how to use it	55.4%	35.5%	5.8%	3.3%	3.43
I have people around who tell me what I need to improve on	50.8%	43.4%	5.7%	0%	3.45
<b>Average mean</b>					<b>3.41</b>
<b>Emotional Arousal</b>					
I am always relaxed when using e-learning system	56.4%	35.9%	6.8%	0.9%	3.48
I don't make mistakes when using computer except I get nervous	41.8%	41.8%	11.5%	4.9%	3.20
I always concentrate on what I am doing unless I am tired	57.9%	37.2%	5.0%	0%	3.53
<b>Average mean</b>					<b>3.40</b>

Key: SA = strongly agree; A = agree; D = disagree; SD = strongly disagree.

Decision rule: low mean is < 2.5, moderate mean is = 2.5 and high mean is > 2.5

Likewise, according to Table 2, most of the undergraduates agreed on items relating to mastery experience, vicarious experience, social persuasion and emotional arousal. As shown in the table, the cumulative mean for mastery experience is 3.66, vicarious experience is 3.48, social persuasion is 3.41 and emotional arousal is 3.40. The aggregate of all these mean values was calculated to be 3.49 which indicates a high level of computer self-efficacy among the LIS undergraduates on full-time programme in Ajayi Crowther University, Oyo and Lead City University, Ibadan, Oyo State, Nigeria.

Hence, the findings from this study is consistent with previous research in the reviewed literature. This implies there is high level of computer self-efficacy among Library and Information Science undergraduate students. Also, a lot of the undergraduates perceived electronic library systems as easy to use and useful for their study. This perception could lead to more confidence and probably better use of the electronic library systems.

#### 4. Conclusion and Recommendations

This paper investigated the influence of computer-self efficacy on motivation to use e-learning systems by LIS undergraduates of Ajayi Crowther University, Oyo and Lead City University, Ibadan, Oyo State, Nigeria. Findings indicate high level of responses by the undergraduates on perceived usefulness and perceived ease of use, which are the two sub-constructs of motivation to use e-learning systems. The study also revealed high level of computer self-efficacy among LIS undergraduates of the two selected private universities in Oyo State, Nigeria. However, the fact that mastery experience ranked highest among the dimensions of computer self-efficacy indicates that students may have been left without support in using e-



learning systems. Perhaps, many of the undergraduates were able to learn the use of computers or electronic learning systems on their own.

We, therefore, recommend that library management in Ajayi Crowther University, Oyo and Lead City University, Ibadan, should continue to encourage the use of electronic learning systems, while also giving due considerations to skill acquisition programs that could enhance the level of computer self-efficacy of the undergraduates.

### Declaration of Interest Statement

We declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere. We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

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