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Perception of External Control, Effort Expectancy and Use of Electronic Information Resources by Undergraduates in Selected Universities in Nigeria

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Abstract

The study examined the relationship between external control, effort expectancy and use of EIRs among undergraduates in two selected universities in Oyo State, Nigeria. The survey research design of correlational type was adopted for this study across undergraduates in Ajayi Crowther University (N=1,619) and Lead City University (N=2,046), with a total population of 3,665. The study found that both independent variables of external control and effort expectancy had individual significant relationship with undergraduates' use of EIRs. Also, there was a significant positive relationship between perception of external control and effort expectancy in the use of EIRs. Both independent variables when taken together significantly influence use of EIRs among the undergraduates. The study concludes that the level of EIRs use in the universities understudied will be a function of available control or facilitating condition and the ease in using these resources. Recommendations for the study were made according.

Keywords: Effort expectancy, Electronic Information Resources (EIRs), External control, Facilitating condition, Use of EIRs, Undergraduates

Introduction

Undergraduate students also referred to as undergraduates are a major group that constitutes the academic community of a university. The university is established to prepare, equip and empower undergraduates with knowledge and dexterities required to be self-dependent and solve contemporary challenges. In order to achieve their academic and personal goals, undergraduates acquire and use various types of Electronic Information Resources (EIRs) either online or offline. Some of the examples of EIRs used by undergraduates are AGORA (Access to Global Online Research in Agriculture), African Journal Online (AJOL), ARDI (Access to Research for Development and Innovation), Science Direct, Ebscohost, HINARI (Health Inter Network Access to Research Initiative), E-journal, JSTOR, Pubmed central, OARE, Eric, DOAJ

(Directory of Open Access Journals), TEEAL, BIOMED central, Proquest, Emerald, Popline, Bionee, Mathscinet, and ASSR (Arab Social Science Research). The contents of these resources are differentiated on the basis of subjects and disciplines. For example, TEEAL is made up of information on Agriculture, BIOMED central on Medicine, Mathscinet on Mathematics and AGORA on Agriculture. The availability of these resources may vary from one university to the other.

In a study carried out by Tiemo (2017), electronic databases such as Ebscohost, AJOL, Hinari, AGORA, TEEAL, OARE, JSTOR, Datadad were available and extensively used by undergraduates' students in both state and federal universities in South-south, Nigeria. Similarly, Mary and Balasubramania (2017) study on use of EIRs among students in India revealed that both male and female students use various electronic resources, which include Ebscohost, Emerald, UCG Infonet, TEEAL, e-journal, e-theses, as well as e-books. This implies that electronic resources are widely and extensively used by university undergraduates all over the world.

The university library usually provides EIRs for undergraduates majorly through subscription. Undergraduates are required to register with the university library in order to access the EIRs that the library subscribes to. The access code could be in the form of username and password or the university's Internet Protocol (IP) address could be linked with the database to grant automatic access to students using the university library's IP. The undergraduates' accessibility to these resources could be restricted or unrestricted. For the restricted resources, accessibility could be limited to school or departmental libraries in most cases while unrestricted resources may be accessed and used by students from within or outside the school environment. Thus, EIRs offer to undergraduates a great amount of information with flexibility of usage; hence, university's investment in them.

Use of EIRs by undergraduates globally is on the increase and there are various purposes to which EIRs could be used by undergraduates. Madondo, et al., (2017) affirmed that EIRs contain relevant information which could assist students in completing class assignments, group projects, group discussion and independent learning. Regardless of its usefulness, certain factors which may impede the use of EIRs include poor power supply, slow Internet bandwidth, inadequate computer infrastructures, poor support structure, and lack of training on use of EIRs. In broad categorization, probable factors which may influence undergraduates' use of EIRs are perception of external control and effort expectancy.

"The degree to which an individual feels that technological and organisational resources are available to support the use of a system is represented by facilitating condition or external control, which is an anchor factor and a measuring construct in technological acceptance and use models" (Venkatesh, et al., 2003 p.5). In the context of workplace technology use, Venkatesh and Davis (2000) contended that one of the specific issues stemming from external control is the availability of support staff, which is an organisation's response to help users overcome difficulties and obstacles in their use of technology, particularly during the early stages. Perception of external control may be a critical factor that an individual will consider in the use of a technology or system. For instance, availability of resources, knowledge of the resources, technical support and facilities to use the resources may result in high use of the resources. Inversely, non-availability may result in low perception of the resources, thereby leading to under utilization of resources. Availability of EIRs is an important and initial component of perception of external control, which could influence undergraduates' usage.

Besides perception of external control, effort expectancy is another variable which could predict the utilisation of EIRs by undergraduates. In the Unified Theory of Acceptance and Use of Technology (UTAUT), effort expectancy is one of the four measuring variables that determine people's willingness or intention to use a technology or information system. According to Venkatesh, et al., (2003), effort expectancy is the degree of ease associated with the use of a

system. It has been defined as extent of perceived convenience for using system (Ghalandari, 2012), and as effort needed to use a system, whether it is simple or complicated (Catherine, et al., 2017). Broadly, effort expectancy means level of effort which an information system or technology would require in order for effective use to take place. Past studies (Akbar, 2013) also found a positive and significant relationship between effort expectancy and use of technologies among university students. Roy, et al., (2016) related convenience in effort expectancy to decision, access, transaction, benefit, and post-benefit associated with use of something. Convenience is an important factor that may predict undergraduates' use of EIRs, which is why Tyagi (2011) affirmed convenience to play major role in university students' selection of online resources.

From the aforementioned, perception of external control as well as effort expectancy could have strong impact on the use of EIRs. If undergraduates have adequate training, facilities and opportunities to use EIRs, it is possible for them to perceive usage as effortless, convenient, flexible and easy to use in order to meet their varying information needs; which suggest that external control could also predict effort expectancy. With the heavy investment on EIRs by universities, the need to facilitate the extent and ease with which undergraduates use them is crucial.

Statement of the Problem

Despite huge investment on EIRs and its consequent availability in universities, the question of low usage by undergraduates needs to be addressed. Since, availability and accessibility to EIRs alone has not translated into effective use, it means there are other probable factors which may influence use. While previous studies have examined other technological, psychological and personal factors like perceived ease of use, perceived usefulness, attitude and self- efficacy that may predict use of EIR; there is dearth of empirical research that collectively examined perception of external control and effort expectancy on the use EIRs by university undergraduates. Perception of external control in terms of knowledge gained through training, technical support and facilities that stimulate the use electronic resources could be vital to the utilisation of EIRs and therefore needs to be examined. Similarly, effort expectancy could also play significant roles in the adoption and use of EIRs. Consequently, the thrust of this study is to provide empirical evidence on how the independent variables of external control and effort expectancy would relate and possibly influence the use of EIRs by undergraduates in two selected universities in Oyo State, Nigeria.

Objectives and Hypotheses of the Study

The study mainly seeks to examine the relationship between perception of external control, effort expectancy and use of EIRs by undergraduates in two universities in Oyo State: Ajayi Crowther University (ACU) and Lead City University (LCU). The study's precise objectives are to:

1. Determine the relationship between perception of external control and use of EIRs by undergraduates in the two universities;
2. Determine the relationship between perception of effort expectancy and use of EIRs by undergraduates in the two universities;
3. Determine the relationship between perception of external control and effort expectancy of undergraduates in the two universities, and
4. Determine the joint influence of perception of external control and effort expectancy on use of EIRs by undergraduates in the two universities.

Consequent to the specific objectives, the following null hypotheses are proposed at.05

level of significance:

H01: There is no significant relationship between perception of external control and use of EIRs by undergraduates in Lead City University and Ajayi Crowther University.

H02: There is no significant relationship between effort expectancy and use of EIRs by undergraduates in Lead City University and Ajayi Crowther University.

H03: There is no significant relationship between perception of external control and effort expectancy of undergraduates in the two universities.

H04: Perception of external control and effort expectancy do not have a significant joint influence on the use of EIRs by undergraduates in the two universities

Review of Related Literature

The evaluation of relevant literature was carried out by correlating the study's variables according to the hypotheses generated and the conceptual model which guides the research.

Perception of External Control and Use of EIRs by Undergraduates

The individual's perception of the availability of information, resources, and technological assistance necessary to conduct the specific behaviour which is referred to as perception of external control (Venkatesh & Davis, 2000), is also known as the facilitating condition in the UTAUT (Venkatesh et al., 2003). Evidently, external control or facilitating conditions can predict users' attitude and consequently use behaviour. The availability or non-availability of facilitating conditions or external control will either make students form a positive or negative perception towards use of EIRs. In view of this, Dwivedi, et al., (2017) in their article concluded that individuals develop positive perceptions and attitude toward a technology through facilitating conditions like the availability of help desk and training programmes.

In a study by Shaqour and Daher (2010) on factors influencing students' use of EIRs in Al-Nadah University Palestine, the research findings show that there is significant strong positive relationship between the students' use of electronic information resources and the provision/availability of institutional facilities. By implication, regardless of the students' characteristics and their readiness to use electronic resources, the availability of institutional factors will heavily predict the actual use of these resources. Dehigama and Dharmarathne (2015) examined "undergraduates' attitude towards access to electronic information resources in academic library of University of Peradeniya, Sri-Lanka". One of the findings of the study was that insufficient computers and poor access to Internet hinder the use of EIRs among the undergraduates. The finding implied that provision of required infrastructural facilities by the university is a stimulant to the use of EIRs.

The study of Varadaraju (2017) further supported the relationship between external control and use of E-resources. In the study, it was revealed that use of library's electronic resources were high because of availability of external factors. The findings of the study indicated that 61.8%, 67.8%, and 58.3% of the respondents affirm to adequate ICT infrastructures, technical support, and usability training as factors that could influence the use of E-resources. Therefore, availability of external factors can be strong predictor of use of E-resources among students. When students are provided with necessary controls, their use of E-resources can be guaranteed. This is because controls are motivating factors with capacity to propel increased usage of resources.

Stressing the importance of control to enhance use of E-resources, Orji, et al., (2010) maintained that facilitating conditions (external controls) are crucial to use of E-resources. They affirmed that control is the most significant predictor of acceptance and use of technology and, by extension, EIRs, according to their study of crucial elements in electronic library acceptability among students. The study implied that lack of external control like resources, infrastructure, trainings and support will hinder the use of EIRs. Also, the study of Hamutumwa (2014) as it relates to perception of distance learners towards EIRs in university of Namibia, also identified the role of external control in the use of EIRs. It revealed that one of the reasons for low use of EIRs was related to control factors like electricity, networked computers, Internet, and printing facilities. This hinders the satisfactory use of EIRs. The study concluded that there is need for improved external control factors such as provision of relevant information resources, training, provision of infrastructure and technical supports.

It has been proven that the lack of external control or facilitating conditions might impede the use of EIRs; and because it is the obligation of institutions to supply them, university libraries are obligated to provide the external controls to help students utilise EIRs. Students are motivated and enthusiastic to use these EIRs when they have the necessary or required facilitating conditions that support use. In a study carried out at Onabisi Onabanjo University, Nigeria; Bankole and Babalola (2012) examined Internet use among the undergraduates of the institution. The finding of the study showed that the 67.1% of the respondents preferred consulting the Internet resources as against the 29.1% of them who preferred the print resources, while the remaining percentage of respondents was undecided. The study further revealed that Internet resources was preferred by majority of the respondents though slow speed of Internet connectivity, lack of adequate Internet facilities by the institution, shortage of electricity supply, Internet cost and poor skills to effectively use the Internet, were all factors that hindered the use of these resources. Therefore, external control or facilitating conditions have great tendency at determining students' use of EIRs.

Attuquayefio and Addo (2014) also made an enquiry into factors affecting students' acceptance of ICT in Ghana's institution of higher learning, where findings reveal facilitating conditions as strong predictors of intention of students to use ICT as well as actual use behaviour. It is evident from the study that provision of facilitating conditions will significantly influence students' adoption and use of ICT related technologies such as EIRs. On factors affecting utilisation of electronic health information resources, Alison, et al., (2012) in Uganda found that accessibility and use of e-resources may be limited as a result of inadequate computers, lack of awareness, poor Internet connection as well as students' inability to surf the Internet. The majority of respondents (41%) identified poor Internet connectivity as the primary barrier to accessing and using e-resources. The study discovered a nexus between the use of e-resources and information literacy. This was because most of the respondents who had received prior training were able to use E-resource (94.2%) compare to those without such training. Based on this study, it is logical to conclude that students' knowledge of e-resources, availability of technological resources as well as opportunities may determine undergraduates' extent, purpose and use of EIRs.

Effort Expectancy and Use of EIRs by Undergraduates

Effort expectancy, that is, the degree of ease, convenience or effort associated with EIRs, plays significant role in determining use. Studies have revealed that students prefer and utilise information resources that are simple to use, convenient, straight forward, adaptable, and understandable (Lee, et al., 2012). In their investigation, they found that undergraduates' selection of information resources was based on several factors. Four of the factors identified

were effort expectancy related. The factors are ease of use, familiarity, users experience and accessibility. Students are willing to use information resources that are easy to use, familiar, accessible and flexible.

Connaway, et al., (2013) stated in their article titled “I find Google a lot easier than going to the library website. Imagine ways to innovate and inspire students to use the academic library”, that library web services ought to be simple and convenient in order to enable students find the right information without wasting time. This statement came from the fact that information users prefer to use online resources that offers them comfort and ease of use. The findings of their study show that users’ complain about their inability to always retrieve the needed information from university library’s OPAC. Search engines have been discovered to give spelling advice or questions in the case of a misspelt or no hit retrieval, but library OPACs have been hesitant to provide this service. It is in view of these authors that use of e-resources will increase through provision of convenient electronic information systems. The study therefore supports the positive correlation between effort expectancy and undergraduates’ use of EIRs.

In a study conducted by Tyagi (2011), students at Roorke University India claim that they prefer to use EIRs because they are easy and convenient to use. The most significant component in information consumption is convenience; all sorts of users prefer electronic journals on the condition that it makes their job simpler and provide them with the information they require. The findings of Attuquayefio and Addo (2014) showed that the only variable that has a substantial impact on students' behavioural intention to use available ICTs for learning is effort expectancy, because it does not require much effort to use. The students find use of ICT for learning to be convenient and flexible, and hence, high level of use. EIRs being a product of ICT are found to be convenient and easy to use for learning. According to Tyagi (2011), convenience in the use of technology and its flexible features will influence the extent to which students use EIRs. This suggests that resources that are complex and difficult to understand and use may not be adopted and considered for use by students.

Although there are benefits associated with EIRs but these benefits may not be maximised if they are complex and difficult to use. In a study by Adetunla (2016) on perceived ease and use of EIRs by undergraduates of private universities in Oyo State, Nigeria; the finding shows that majority of the students (62%) find use of EIRs complex, difficult to understand and technical to use. Therefore, use of EIRs was very low. This study affirmed that students had negative perception of EIRs due to the complexities and lack of facilitating conditions like poor electricity supply, inadequate knowledge for e-resources’ utilisation and lack of technical support. Akbar (2013) found that effort expectancy is substantially and positively connected to the intention to use digital library information resources. This means that undergraduates who thought the digital library was easy to use would have a strong desire to use it to obtain information resources.

According to Nusantari et al. (2013), the ease of use, quality of information, system interface, and computer skill are the most important factors affecting postgraduate students' propensity to use e-journals. However, Ping, et al., (2016) found a negative correlation between effort expectancy and intention to use digital library among undergraduates in Malaysian university. The reason given for this result was based on the fact that today's undergraduates belong to the digital natives who were born and raised with cutting-edge technologies and as such well-versed in computers and Internet. Thus, these students may not perceive use of EIRs as something effortful, complex or difficult to use.

Perception of External Control and Effort Expectancy of EIRs by Undergraduates

The availability or non-availability of external control factors could have significant impact on effort expectancy and more invariably on use of any information technology. Barranis (2011) examined “user perceptions of application: How system design can impact playfulness and anxiety”, the study maintained that control remains a significant construct that constraints or enables behaviour. It was further stated that “if one has access to certain resources and knowledge-base, his level of control will increase”. It is logical to conclude that availability of external control factors such as knowledge, training, and technical support will have strong relationship with effort expectancy. Use of an information system will become easier, flexible and convenient when external factors are available, thereby giving users high level of control over the system.

In India, Sivasubramaniyan and Batcha (2012) studied the teachers of Pondicherry University and its associated institutions' aptitude and usage of e-resources. Majority of the respondents constituting 69.2% of the study's population affirmed that database and e-journals were predominantly used for both teaching and research. However, 23.9% of the respondents exclusively used these e-resources for research purpose while 0.6% of them used the e-resources exclusively for teaching. The study found high use of e-journals among the respondents which was because the university library enabled EIRs access and use through the provision of computer and Internet facilities to faculty members. Thus, the ease to which e-resources can be effectively used (which is in the domain of effort expectancy) depends on computer skills and in broader terms, information literacy skills, which are acquired through training programmes considered as facilitating condition or control.

According to Sejane (2017), there exist s a positive relationship between facilitating condition, effort expectancy and intention to use EIRs by librarians, students and researchers at University of Kwazulu-Natal, South Africa. In the context of this study, facilitating conditions include external control variables like ICT facilities and technical support. The study submitted that availability of these factors will encourage effective and effortless use of EIRs. By implication, certain facilitating conditions are required to enhance the capacity of information users to navigate information systems for easy retrieval consequently impacting on their effort expectancy.

Theoretical Framework: Unified Theory of Acceptance and Use of Technology

Venkatesh, et al., (2003) proposed and verified the Unified Theory of Acceptance and Use of Technology (UTAUT) in order to give a unified theoretical framework for research centered on the adoption and use of information systems and technologies. According to the theory, four dimensions or factors (performance expectancy, effort expectancy, social influence, and facilitating conditions) are direct drivers or predictors of behavioural intentionality, and hence behaviour. It proposes that gender, age, experience, and voluntariness of usage all appear to influence the effect of these key factors on behaviour (Venkatesh, et al.,2003) .In the view of Williams, et al. (2015), “the theory was developed through the review, mapping and integration of eight dominant theories and models, viz: the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Planned Behaviour (TPB), a combined Theory of Planned Behaviour/Technology Acceptance Model (C-TPB-TAM), the Model of PC Utilization (MPCU), the Innovation Diffusion Theory (IDT), and the Social Cognitive Theory (SCT)”. However, two independent variables from the theory which is of interest to this present study is the effort expectancy and facilitating condition which this study considered as external control. In the Technological Acceptance Model (TAM), this effort expectancy is considered as perceived ease of use.

This model has been employed in investigating the factors likely to determine the

intention to use or actual use of a system or an information system. The study of Maina and Nzuki (2015) found a positive and significant relationship between perception of external control (facilitating conditions) and use of electronic learning. The study further argued that training and support should be provided as controls or conditions that influence students' use of electronic learning. Similarly, Dolo-Ndlwana (2013) carried out a study on use and value of library EIRs by academic and post-graduate students at Cape Town university of Technology. The study reveals that use of electronic resources by the students was high due to ease of use of the resources. The users indicated that perceived ease of use of these resources as reason for continuous utilisation.

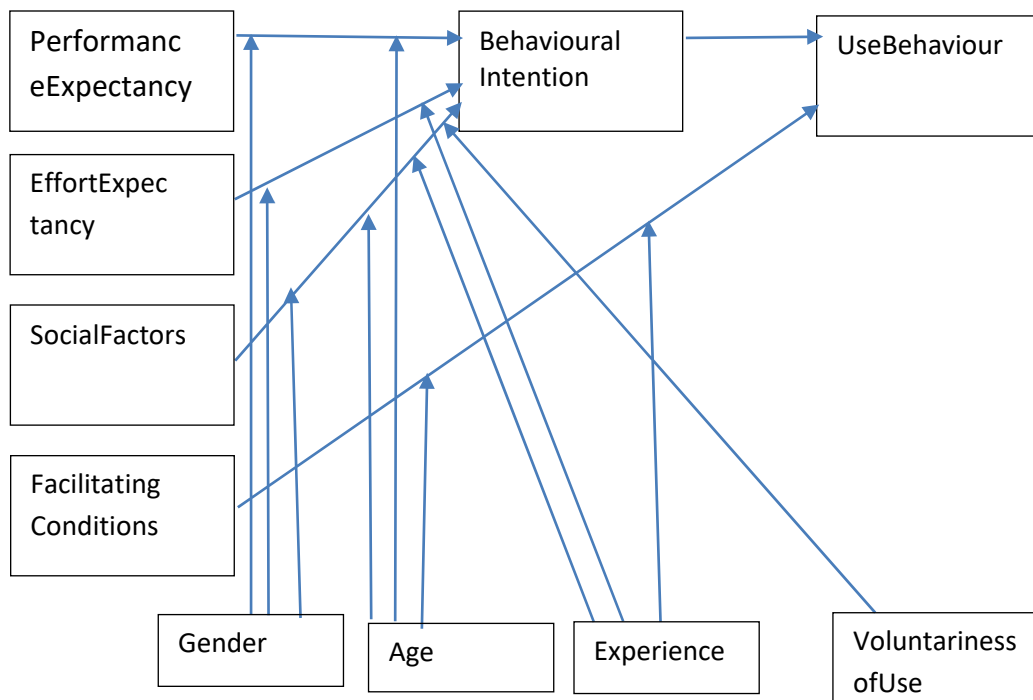


Figure 1: (Unified Theories of Acceptance and Use of Technology, Venkatesh et al., 2003)

Conceptual Model

The conceptual model in Figure 2 depicts a predicting relationship between the independent variables of external control and effort expectancy, and the dependent variable of use of EIRs. Contextually, perception of external control is defined by the availability of EIRs in the library, knowledge of EIRs gained through various capacity building programmes, provision of technical support and EIRs facilities. The effort expectancy was defined by the ease with which the undergraduates will use EIRs and the flexibilities of the EIRs system. Thus, the perception of external control relate to facilitating conditions provided by the university in order for students to use EIRs. The conceptual model therefore proposed that there exist a relationship between variables of the study as depicted by the connecting arrows.

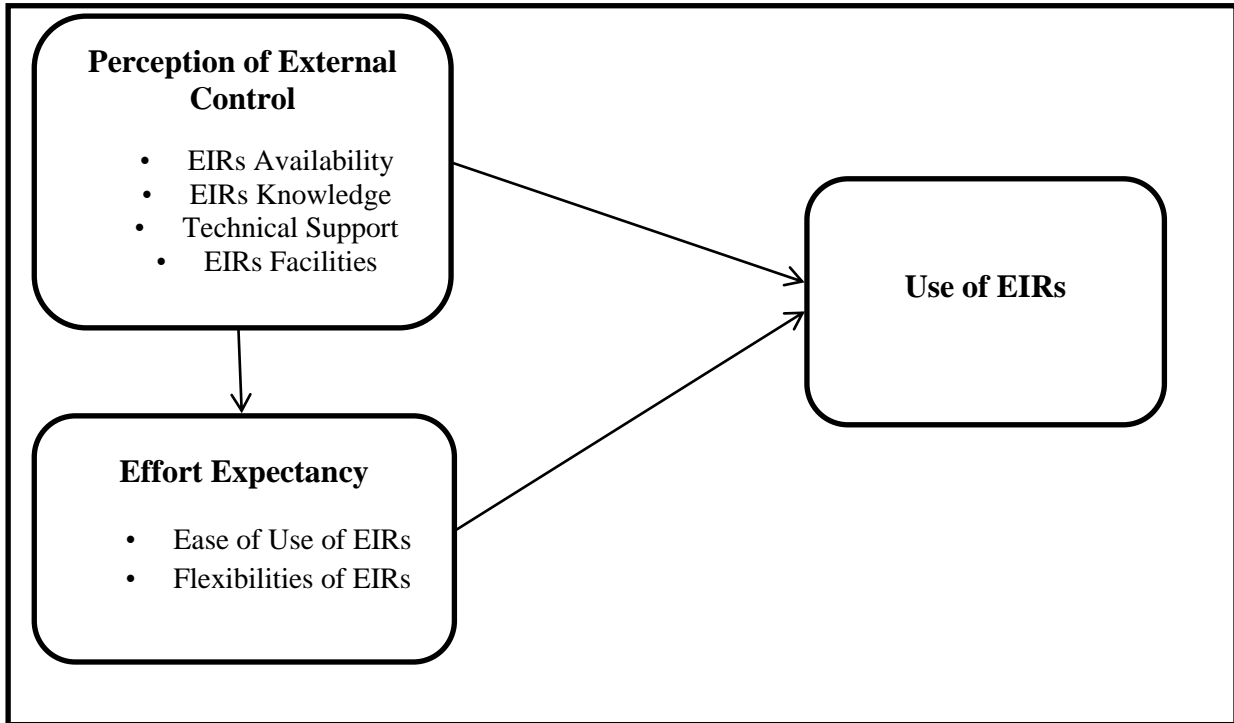


Figure 2: Conceptual model developed by the authors

Methods

The survey research design of correlational type was adopted for this study which cut across all the six (6) faculties in ACU, Oyo and four (4) faculties in LCU, Ibadan, Nigeria. The total population of ACU comprises 1619 students while population of LCU comprises 2046 students. Therefore, the population of the study comprises 3665 students. Using simple random sampling technique, 10% sampling fraction from each faculty would be used to ascertain the sample size for the study. A 10% sampling fraction of the population of ACU is 162 students and 10% sampling fraction of the population of LCU is 205 students. Therefore, the total sample size for the study comprises 367 students. The breakdown of the population and sampling allocation is contained in Table 1 at the appendix.

A structured questionnaire was used as an instrument for data elicitation containing self-developed scale for the dependent variable and adapted scales for the independent variables. The respondents indicated their frequency of EIRs use by ticking Daily (D), Weekly (W), Monthly (M) and Never (N). The perception of external control scale used was an adaptation of Perceptions of external control scale developed by Mathieson (1991) and Taylor and Todd (1995). The adapted scale used for this study comprised of 20 items across this study's four sub-dimensions of external control, measured by a four point Likert scale which are Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Whereas, effort expectancy was a multi-dimensional construct consisting perceived ease of use, complexity and ease of use. The effort expectancy scale used is an adaptation of Kolog, et al. (2015). The original scale contains four (4) items to measure effort expectancy of EIRs with a seven point likert scale of completely disagree (1), moderately disagree (2), somewhat disagree (3), neutral (4), somewhat agree (5), moderately agree (6) and completely agree (7). The adapted scale for the purpose of this study

comprises 10 items to measure effort expectancy of EIRs with four-likert scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).

A total of 367 copies of the questionnaire were administered to the undergraduates of LCU and ACU. However, 352 copies were returned (196 for LCU and 156 for ACU) and found useful for analysis, giving a response rate of 96%. Descriptive statistics was employed to analyze the mean score for all variables as well as their test of norm. While inferential statistics of correlation and multiple regression were used for the hypotheses tested at.05 level of significance.

Presentation of Results

The results of the analysis are presented in accordance with the null hypotheses generated to guide the study, which are a reflection of the study’s specific objectives.

Hypothesis one: There is no significant relationship between perception of external control and use of EIRs by undergraduates in the two universities.

Table 2 presents the results of the correlation analysis conducted between perception of external control and use of EIRs by the respondents in LCU and ACU.

Name of University	Variables	Mean	Std. Deviation	N	R	Df	Remarks
Lead City University (LCU)	Perception of external control	25.12	1.697	193	.127*	192	Sig.
	Use of EIRs	28.05	4.651				
Ajayi Crowther University (ACU)	Perception of external control	59.99	5.360	154	.234**	153	Sig.
	Use of EIRs	27.45	4.904				

Table2: Relationship between perception of external control and use of EIRs by undergraduates

Results showed that there is a significant positive relationship between perception of external control and use of EIRs by undergraduates in LCU ($r = .127^*$; $df = 192$; $p < 0.05$) and ACU ($r = .234^{**}$; $df = 154$; $p < 0.01$). This implies that the higher the undergraduates' level of perception of external control activities in support of the use of EIRs, the more they will use the EIRs. As a result, the null hypothesis is rejected, and the alternative hypothesis, that there is a significant relationship between undergraduates' perception of external control and their use of EIRs, is accepted.

Hypotheses Two: There is no significant relationship between effort expectancy and use of EIRs by undergraduates in the two universities.

The correlation results between effort expectancy and use of EIRs by undergraduates in LCU and ACU were presented in Table 2.

Name of University	Variables	Mean	Std. Deviation	N	R	Df	Remarks
Lead City University (LCU)	Effort expectancy	61.62	5.289	193	.290*	192	Sig.
	Use of EIRs	28.05	4.651				
Ajayi Crowther University (ACU)	Effort expectancy	28.05	5.192	154	.303**	153	Sig.
	Use of EIRs	27.45	4.904				

Table2: Relationship between effort expectancy and use of EIRs by undergraduates

Findings revealed that there is a significant positive relationship between effort expectancy and use of EIRs by the undergraduates ($r=.290^*$; $df =192$; $p< 0.05$) in LCU and ($r = .303^{**}$; $df =154$; $p< 0.01$) in ACU. This indicates that the more the undergraduates expect the use of EIRs to be easy to use, the more they will use them for various academic activities. Therefore, the null hypothesis is rejected and the alternative, which states that there is a significant relationship between effort expectancy and use of EIRs by the undergraduates, is accepted.

Hypothesis three: There is no significant relationship between perception of external control and effort expectancy by undergraduates in the two universities

The results of the correlation analysis conducted between perception of external control and effort expectancy by undergraduates in LCU and ACU were presented in Table3.

Name of University	Variables	Mean	Std. Deviation	N	R	Df	Remarks
Lead City University (LCU)	Perception of external control	61.62	5.289	193	.114	192	Not Sig.
	Effort expectancy	25.12	1.697				
Ajayi Crowther University (ACU)	Perception of external control	59.99	5.360	154	.434**	153	Sig.
	Effort expectancy	28.05	3.192				

Table3: Relationship between perception of external control and effort expectancy of undergraduates

Results showed that in LCU, there is a positive but not significant relationship between perception of external control and effort expectancy in the use of EIRs by the undergraduates ($r = .114$; $df =192$; $p< 0.05$). This means that undergraduates' level of perception of external control could increase the effort expectancy of the undergraduates towards the use of EIRs. In ACU, there is a significant positive relationship between perception of external control and effort expectancy in the use of EIRs by the undergraduates ($r=.303^{**}$; $df=154$; $p<0.01$). This signifies that the higher the level of perception of external control, the more the undergraduates

is expected to use EIRs. Thus, the null hypothesis is accepted for LCU and rejected for ACU.

Hypothesis four: Perception of external control and effort expectancy will not have a significant joint influence on the use of EIRs by undergraduates in the two universities. Tables 4a and b showed the relative contribution of perception of external control and effort expectancy to the prediction of the use of EIRs by undergraduates in LCU and ACU.

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.332 ^a	.110	.101	4.410		
ANOVA ^a					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	457.658	2	4.410	11.764	.000 ^b
Residual	3695.823	190	228.829		
Total	4153.482	192			

Table 4a: Joint contribution of perception of external control and effort expectancy to use of EIRs by undergraduates in Lead City University

Model Summary					
R	R Square	AdjustedR Square	Std. Error of theEstimate		
.324 ^a	.105	.093	4.670		
ANOVA ^a					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	386.240	2	193.120	8.853	.000 ^b
Residual	3293.845	151	21.814		
Total	3680.084	153			

Table 4b: Joint contribution of perception of external control and effort expectancy to use EIRs by undergraduates in Ajayi Crowther University

In LCU, the Table 4a showed a coefficient of multiple correlation ($R=.332$ and an Adj. R^2 of $.101$). When the two predictive factors were added together, they accounted for 10.1 %. $P<.05$ was used to examine the significance of the composite contribution. Table 4a additionally revealed that the regression analysis of variance generated an F-ratio of 11.764 ($P<0.01$). Also in ACU, Table 4b showed a coefficient of multiple correlation ($R=.324$ and an Adj. R^2 of $.093$). When the two predictive factors were added together, they accounted for 9.3% of the variation. The significance of the composite contribution was tested at $P<.05$. It can also be seen from Table 4b that the analysis of variance for the regression yielded F-ratio of 8.853 ($P<0.01$). The implication of these results in the two universities is that when taken together, the independent variables would significantly influence the dependent variables, while other factors not considered in this study could account for the remaining variance. Consequently, the null hypothesis is rejected.

Discussion of Findings

There is a significant positive relationship between perception of external control and use of EIRs by undergraduates. This could be informed by the premise that, if the institution has provided the necessary support and facilities to enhance the use of EIRs, the undergraduates are expected to benefit from the arrangement. This corroborates the study of Toyo (2017) which affirmed that the study's respondents had positive perception of EIRs due to high level of computer literacy obtained through formal training organized by their institutions. The researcher noted that practical teaching of the students in accessing and using EIRs made them to use EIRs effectively. Hamzat and Mabawonku (2018) also agreed with the result of the study as they stated that the provision of EIRs, training of students and availability of technological resources would facilitate undergraduates' use of EIRs. By implication, when conditions, structures and resources that facilitates or stimulates the use a system like EIRs are in place, undergraduates tends to use EIRs as much as possible to meet their perceived need for information.

There is a significant positive relationship between effort expectancy and use of EIRs by the undergraduates. This reveals that if the undergraduates have the expectation that it would be very easy for them to access and use EIRs, they will have the reinforcement to actually use them

for their various academic activities. This result is in tandem with the findings of Tyagi (2011) research that was conducted at Roorke University in India; where it was reported that majority of the students used the EIRs because they considered them easy and convenient to use. Likewise, Gao and Deng (2012) discovered a significant relationship between effort expectation and behavioural intention to use electronic books from their study of mobile e-books acceptance. Consequently, when a user of an information system perceives that less effort (physical, mental and psychological) is required to use an information system (which in this case, EIRs), they are naturally inclined towards using such information system as against those demanding greater effort. This gives credence to the notion that most undergraduates are constantly seeking stress-free approach to their academic endeavours.

There is also a positive but not significant relationship between perception of external control and effort expectancy in the use of EIRs by the undergraduates in LCU. In ACU, there is a significant positive relationship between perception of external control and effort expectancy in the use of EIRs by the undergraduates. This highlights the need for the management of the universities to provide the required technical and infrastructural support to facilitate effortless use of EIRs. This finding is in consonance with Sejane (2017) on access to and use of EIRs in the academic libraries of the Lesotho library consortium, where there exists a positive relationship between facilitating condition (external control), effort expectancy and intention to use EIRs by librarians, students and researchers at University of Kwazulu-Natal, South Africa. Considering and relating the sub-variables of both constructs in view of the findings of this study, the availability and working knowledge of EIRs precedes ease of use of EIRs. Through capacity building, undergraduates' knowledge of available EIRs is enhanced which gives them the competence required for utilise EIRs effortlessly. This knowledge of EIRs combined with adequate technical support will improve flexibilities in the use of EIRs.

The joint contribution of perception of external control and effort expectancy to the use of EIRs was significant. This proves that perception of external control and effort expectancy are important predictors of the use of EIRs by undergraduates. On the relevance of perception of external control, Dwivedi, et al. (2017) stated that perception of external control (facilitating conditions) are instrumental in enabling individuals to form positive attitude towards a technology like EIRs. Kirschner, et al. (2009) also alluded to the relevance of effort expectancy by noting that the efficiency of an information system is enhanced when the mental effort required to use it is not difficult. This finding of the study therefore gives credence to the UTUAT model which proposed that facilitating conditions (external control) and effort expectancy are two of the four critical variables that predict behavioural intention and actual use behaviour of an information system. Thus, undergraduates' intention to use and the actual use of EIRs are predicted by external control and effort expectancy both individually and jointly.

Conclusion and Recommendations

The study examined perception of external control, effort expectancy and use of EIRs by undergraduates in two private universities in Oyo state, Nigeria and concluded that the two independent variables, perception of external control and effort expectancy, individually influence the use of EIRs by undergraduates of the universities under study. Therefore, the level of EIRs use in these universities will be a function of external control and the ease in using these resources. As such an alteration in any of the independent variables will affect the use of EIRs of the undergraduates. Therefore, providing the facilitating conditions and facilities that will stimulate the use of EIRs is a prerequisite for usage. Also the undergraduates' belief or perception that using EIRs will be easy, will also determine their actual use of EIRs. This perception is referred to as effort expectancy. It is established by giving the necessary training (that yields knowledge), technical support, and resources needed to stimulate effective use

of EIRs. Moreover, the perception of external control and effort expectancy jointly and significantly predict use of EIRs by undergraduates. Thus, undergraduates will use EIRs to the extent of the external control or facilitating conditions available, and effort expectancy in the use of EIRs.

Consequent to the above, the following recommendations are made:

1. University management should strengthen effort at providing useful, easy-to-use and up-to-date EIRs for undergraduates' use.
2. University management, library and departments within the university should periodically organise trainings and workshops that will help undergraduates improve their knowledge and skill in the use of EIRs.
3. Technical supports that will enable undergraduates overcome challenges associated with use of EIRs should be intensified by library management, and personnel should always be available to assist the students in using EIRs.
4. The university management should invest more in its Internet bandwidth and connection, provide alternative source of electricity like solar system and structures that create awareness on EIRs.

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Appendix 1

Ajayi Crowther University (ACU)	Population (N)	Sample Size (10%)
<i>Faculties</i>		
Education	06	1
Humanities(Arts)	183	18
Law	314	31
Management Science	257	26
SocialScience	397	40
NaturalScience	462	46
Total	1619	162
Lead City University (LCU)		
<i>Faculties</i>		
Education/Arts	425	43
Law	342	34
Management Science/SocialScience	670	67
NaturalSciences	609	61
Total	2046	205
Grand Total	3665	367

Table 1: Population and Sample size for the study