AOSIS

Determinants of use of electronic information resources by the professoriate in Nigerian universities: Extending the unified theory of acceptance and utilisation of technology model

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Background: This study examined the determinants of use of electronic resources by the professoriate in the social sciences and humanities departments of three universities in Nigeria. The constructs of the unified theory of acceptance and utilisation of technology (UTAUT), namely, performance expectancy, effort expectancy, social influence and facilitating conditions, were used as determinants, and were extended to include self-efficacy, attitude and anxiety because of their theoretical and practical significance in the context of this study.

Objectives: This study examined the determinants of the use of electronic information resources by the professoriate in the social sciences and humanities departments of three federal universities in Nigeria.

Method: This study used a descriptive survey to study the determinants of use of electronic information resources by the professoriate. An adapted questionnaire was used to collect quantitative data from 246 professors from the three universities. Data were analysed with descriptive and inferential statistics using the Statistical Package for Social Sciences (SPSS).

Results: The results show that performance expectancy, effort expectancy, attitude and social influence significantly influenced the professoriate's intention to use electronic resources in comparison to self-efficacy, anxiety and facilitating conditions. The descriptive statistics, however, revealed high self-efficacy and low anxiety means scores, and showed the significance of these constructs in extending the UTAUT model within the context of this study.

Conclusion: Extending the UTAUT in the academic context shows the relevance of these constructs in improving information services to the professoriates as a unique group.

Keywords: electronic information resources; UTAUT; professoriate; performance; expectancy; effort; self-efficacy; anxiety.

Introduction

Electronic information resources (EIR) have transformed the scholarly communication landscape, particularly with the advent of the World Wide Web (Steele 2014). EIR has become popular across higher institutions all over world and academics are using the platform to access relevant and current information for various purposes especially for teaching and research. It has become an indispensable tool among academic staff as it provides fast access to information at a reduced cost (Bar-Ilan, Peritz & Wolman 2003). Electronic resources are characterised by their ability to store information electronically, provide multiple and concurrent access, provide ease of access across geographic boundaries and be accessible via electronic systems and networks. Examples of EIR are online databases, e-journals, e-books, internet resources, CD-ROM and open access catalogue (OPAC) (Mittal & Bala 2013). The presence of Internet infrastructure in Nigerian universities has enabled the provision of EIR facilities to the professoriate to support teaching, learning and research activities. With the help of EIR, the professoriate can access library resources and services online via networks from their offices or homes without the need to go to the library physically (Aregbesola & Oguntayo 2014). Users of EIR have cited several motivations for its use; these include: speed, easy search function, ease of use, flexibility, convenience, and portability (Aregbesola & Oguntayo 2014; Bar-Ilan et al. 2003). Using EIR efficiently is subject to the user's ability to use a computer, knowledge of content availability and the ability to articulate search terms intelligently (Odunewu & Aluko-Arowolo 2018). Therefore, professoriates with good

computer skills feel more comfortable using EIR, whereas those who are not comfortable using the computer tend to develop a phobia towards it (Xuemei 2010). The professoriate refers to the position or rank of a university professor and also connotes a group of academic faculty renowned for their scholarly contribution towards teaching and research (Shamos 2011). In the context of Nigeria and for this study, the professoriate comprises the readers (assistant professors), associate professors and professors of a university. Laila and Mumtaz (2010) observed that faculty members, especially at the professoriate level, heavily depend on books, journals, conferences, subject experts and colleagues to meet their information needs. Recent studies, however, show a change in behaviour towards acceptance and use of electronic resources by the professoriate, because of the prevalence of World Wide Web, search engines, online databases, e-journals, e-books, e-mails, online catalogues and web portals that have altered usage behaviour (Nwone & Mutula 2018). However, with improved access to technology, factors such as self-efficacy, perceived ease of use, perceived usefulness, attitudes towards the educational value of technology, computer anxiety, social influence and comfort with technology have been shown to influence the ways in which the academic faculty use technology (Korobili, Tilikidou & Delistavrou 2005; Odunewu & Aluko-Arowolo 2018). It is of practical significance for the academic library to know the factors that influence the professoriate to use electronic resources. This knowledge will assist the library in providing services tailored to the unique information requirements of the professoriate. A number of studies (Buchanan, Sainter & Saunders 2013; Tibenderana et al. 2010; Venkatesh, Thong & Xu 2016) have used the unified theory of acceptance and use of technology (UTAUT) model to examine users' behaviour in different contexts. None of these studies examined the determinants of use of EIR by the professoriate, and studies that have used the UTAUT model to examine EIR usage by university faculty, especially at the professorial level, are scarce in library and information science literature. Therefore, this study will fill this knowledge gap by examining the determinants of use of EIR by the professoriate. This study will use the original constructs of the UTAUT model as determinants, and also include computer self-efficacy, computer anxiety and attitude. This study will unveil the significance of these constructs in an under-researched user group within the academic context. The outcome will improve the theoretical understanding of the model and serve as a background for further research, besides having practical and policy significance.

Literature review

The literature was reviewed after a search on scholarly online databases and search engines around the variables of this study. When sifting for the most relevant literature, emphasis was placed on empirical studies related to the professoriate.

Ismail, Ali Mahesar and Idrees (2017) examined the electronic resource preferences of faculty members at the University of Peshawar in Pakistan. The outcome showed that assistant professors used electronic information sources (EIS) more than associate professors and professors, and those who had more recent publications to their names were more experienced in using EIS than those who had fewer to their credit. One of the major findings of this study was that most of the faculty members used EIS frequently and preferred e-journals to print journals. Folorunso's (2014) study on social sciences scholars in a research institute in Nigeria demonstrates diverse EIR usage patterns among users of different academic ranks. Junior research fellows, research fellows, senior research fellows and associate professors were more enthusiastic users of EIR, relying on electronic resources more heavily than on print resources. In particular, junior research fellows use electronic resources about twice as much as research professors to satisfy their research needs. Presumably, these junior researchers are younger and more comfortable with emerging technologies, academic scholars not more than 50 years in age embraced EIR more willingly than their older counterparts. Rupp-Serrano and Robbins (2013), while examining the information-seeking habits of an education faculty in the USA, found that scholarly journals topped the list as the preferred resources used for research, followed by internet resources and books. The respondents consisted of 26% professors, 25% associate professors, and 23% assistant professors, while 13% included adjunct faculty, instructors and lecturers. Xuemei's (2010) study on the use of information resources by the social science and humanities faculty for teaching and research found that researchers used electronic resources to satisfy 58% of their research need. In spite of the general preference for EIR, individual differences exist among the professorial ranks and disciplines. A full professor in the teaching and learning department accustomed to using print resources for most of his academic career was unfamiliar with new technologies and found EIR difficult to understand and manage. This study also shows usage of electronic resources in accordance with academic rankings. Assistant professors were more enthusiastic users of electronic resources, relying more heavily on electronic resources for their research than associate and full professors. The research participants include eight professors, five associate professors, eight assistant professors and nine doctoral students in social science and humanities in the USA.

Methodology

This study used a descriptive survey design and a quantitative approach to examine the salient factors encouraging use of EIR. The participants of the study included the academic faculty at the professorial level: the full professors, associate professors and assistant professors (readers in the Nigerian context) in three federal universities in south west Nigeria. The study involved all the professoriates of social science and humanities in the faculties of social science and humanities in the three universities. The total number of professoriates for the University of Lagos is 86, the University of Ibadan is 91 and Obafemi Awolowo University is 69, making a total of 246 professors, and constitutes the population of the study. The

advantages of using a census in a study is that it provides a true measure of the population without a sampling error and provides reliable data for future studies (Gray 2004). A questionnaire consisting of both self-structured and adapted questions from previous studies was used to collect quantitative data from the professoriate. Items in the UTAUT constructs including performance expectancy, effort expectancy, social influence, facilitating conditions and behavioural intentions were taken from the work of Oye, Iahad and Rabin (2011); items in computer self-efficacy, computer anxiety and attitude were taken from the work of Surej (2015). Adapting questions from previous empirical studies increases the external validity of the instrument (Shadish, Cook & Campbell 2002). Reliability of the constructs in the data-collection instrument measure 0.88 on the Cronbach's alpha scale. The researcher took the help of professional research assistants to collect data from the professoriate through personal visits to their offices. The research assistants were very familiar with the three universities and have good experience in research data collection. Collecting data from the professors was a daunting task, because of their regular unavailability in their offices and often-busy schedules, thereby prolonging the period of data collection, which took approximately 7 months, from January to July 2016. At the University of Lagos, 86 questionnaires were distributed, 48 collected and 40 found fit for data analysis. At the University of Ibadan, 91 questionnaires were distributed, 76 collected and 70 found fit for analysis. At the Obafemi Awolowo University, 69 questionnaires were distributed, 60 were retrieved and 55 were found fit for analysis. In all, 246 questionnaires were distributed, 184 were collected and after cleaning the data, 165 questionnaires were found fit and coded for data analysis. The data were analysed using descriptive statistics employing frequency and percentages for the ordinal variables, and inferential statistics using factor analysis for variable reduction and linear multiple regression analysis to test the degree of influence of the independent variables on the dependent variable. Statistical Package for the Social Sciences (SPSS) software was used for both analysis.

Ethical consideration

The research adhered to all ethical procedures stipulated by the University of KwaZulu-Natal's ethical committee.

Results
Demographic attributes of the professoriate

The results of the demographic attributes show that the University of Ibadan had the highest number of professoriate (70; 42.4%), next is the Obafemi Awolowo University (55; 33.3%), while the University of Lagos had the least (40; 24.2%). The distribution of professoriate according to faculty showed that majority of the respondents were from faculties of arts (65; 39.4%), followed by social sciences (55; 33.3%) and education (43; 26.1%), while law faculties (2; 1.2%) recorded the

fewest number of professoriates. The ranks of the respondents revealed that the majority (105; 63.6%) were full professors, while readers (assistant professors) were 41 (24.8%), and associate professors were 19 (11.5%).

Information sources used by the professoriate for teaching and research

The result reveals that majority of the professoriate *always* sought information for teaching and research in online databases (77%) and electronic journals (71.5%), while 22.4% and 25.5% respectively *occasionally* use online databases and electronic journals to seek information for teaching and research. Only a few of the professoriate reported that online databases (0.6%) and electronic journals (3.0%) were seldom used for teaching and research. Those who *always* use web portals (52.7%) to seek information for teaching and research number more than those who use websites (50.9%), electronic mail (9.7%) and online catalogues (5.5%). *Occasional* uses of online catalogues (50.9%) are reportedly more frequent than *occasional* uses of websites (32.1%), web portals (29.1%), electronic mail (20.0%), listservs (7.3%) and FTP (1.8%).

Factor analysis

Eight key constructs of the UTAUT, namely, performance expectancy, effort expectancy, attitude towards technology, social influence, facilitating conditions, self-efficacy and anxiety that are known to predict behavioural intention to use technology were the factors considered to influence the professoriate's use of EIR. To unveil the factors that played a significant role in influencing the use of electronic resources by the professoriate, factor analysis was first applied to reduce the underlying variables associated with each construct. Performance expectancy, effort expectancy, attitude towards technology, social influence and facilitating conditions were measured with four items each. Self-efficacy and anxiety were measured using five items each. The items that measured the seven factors amounted to a total of 30.

Using SPSS, factor analysis (principal component analysis) was carried out to explore the underlying factors associated with the 30 items. The construct validity was tested applying Bartlett's test of sphericity and the Kaiser–Mayer–Olkin measure of sampling adequacy that analyses the strength of association among variables. The Kaiser–Mayer–Olkin measures of sampling adequacy (KMO) were first computed to determine the suitability of using factor analysis. KMO is used to assess which variables to drop from the model because of multi-collinearity problem. The value of KMO varies from 0 to 1, and the overall KMO should be 0.50 or higher to perform factor analysis.

Table 1 shows that the result of the Barlett's test of sphericity and the KMO statistics for all the 30 items that measured performance expectancy (0.779), effort expectancy (0.772), attitude towards technology (0.729), social influence (0.859), facilitating conditions (0.726), self-efficacy (0.845) and anxiety

TABLE 1: Kaiser–Mayer–Olkin statistics for all unified theory of acceptance and utilisation of technology factors.

KMO statistics	Performance expectancy	Effort expectancy	Attitude	Social influence	Facilitating conditions	Self-efficacy	Anxiety
Kaiser–Mayer–Olkin measure of sampling adequacy	0.779	0.772	0.729	0.859	0.726	0.845	0.812
Barlett's test of sphericity	687.442	368.654	167.782	801.656	512.437	621.372	2130.165
Approximate Chi-square	6	6	6	6	6	21	10
Significance	0.000	0.000	0.000	0.000	0.000	0.000	0.000

KMO, Kaiser–Mayer–Olkin measures of sampling adequacy.

(0.812) were all significant, making the variables suitable for factor analysis. Facilitating conditions have the least KMO statistic (0.726) and social influence has the highest KMO value (0.859).

To determine the minimum loading necessary to include an item in its respective constructs, Hair et al. (2010) suggested that variables with loading greater than 0.30 are considered significant, loading greater than 0.40 are more important and loading 0.50 or greater are very significant. For this study, items with loading of 0.50 or greater are acceptable. The results of the factor analysis and the factor loadings are explained further.

Component extraction and factor loadings – descriptive analysis

Performance expectancy

The result of principal component analysis with the factor loadings and corresponding mean and standard deviation for items that measured performance expectancy reveals that 'using EIR enables me to carry out research more quickly', has a mean score of 2.89 and a standard deviation of 0.455. It is the only variable extracted from that group with an eigenvalue of 3.214. The cumulative value accounts for 80.35% of the total variation of all the variables in that segment.

Effort expectancy

In effort expectancy, 'it is easy for me to become skilful at using electronic information resources' is the only variable extracted to represent the group with a mean of 2.570 and a standard deviation of 0.820. It has an eigenvalue of 2.834 and represents 70.86% of the overall variability.

Attitude

Under attitude, two variables were extracted. 'Electronic information resources make teaching and research more interesting' has the lower mean value of 2.70 and the highest deviation of 0.707 from the mean. 'I like using electronic information resources to search for information for teaching and research' has the highest mean in the segment and the least standard deviation. The two items have eigenvalues of 2.290 and 0.821, and account for 77.79% of the total variability of items in that group.

Social influence

Two variables were extracted from the items that measured social influence. The first variable: 'people who are important to me think I should use electronic information resources for teaching and research' has a mean score of 2.49 and a standard

deviation of 0.866. The second item: 'people who influence my behaviour think that I should use electronic information resources for teaching and research' has the same mean (2.490) as the first variable, but a higher standard deviation (0.873). The two variables with eigenvalues of 2.839 and 0.966, and the cumulative percentage, account for 95.13% of the overall variability of all the items of social influence.

Facilitating condition

Under facilitating condition, three items were extracted. 'I have the knowledge necessary to use electronic information resources' has the highest mean (2.980) and the least deviation (0.155). 'My phone is not compatible with the use of electronic information resources' has a mean score of 1.770 and the highest standard deviation (0.977). 'A specific person is available for assistance with difficulty in using electronic information resources' has the least mean score (1.540) and a standard deviation of 0.893. The three variables with eigenvalues of 1.224, 1.113 and 0.907 together account for about 81% of the variability in the original variables.

Self-efficacy

Self-efficacy has three component extractions. 'I am proficient in the use of a computer' has the highest mean score (2.910) and the least deviation from the mean (0.404), while 'I am confident using electronic information resources to search for information for teaching and research even if there is no one to help me' has the least mean value (2.410) and the highest deviation (0.911). 'I am confident using online databases to search for information' has a mean score of (2.540) and a standard deviation of 0.840. The three items have eigenvalues of 3.844, 1.033 and 0.849 and together represent about 82% of the overall variables, which makes it sufficient to represent all the variables in the group.

Anxiety

The dimensions that represented anxiety have only one variable extraction from the principal component analysis, with a mean score of 1.57 and a standard deviation of 0.905. 'I feel apprehensive about using electronic information resources' has an eigenvalue of 4.859 and accounts for 97.170% of the total variance of items in the group. The high eigenvalue and the high cumulative value make it sufficient to represent all other variables in the group.

F-statistic test

The *F*-statistic tests the significance of the regression model. It determines whether changes in the predictor variables (performance expectancy, effort expectancy, attitude, social

influence, self-efficacy and anxiety) are associated with changes in the dependent variable (intention to use electronic resources). Table 2 shows that the *F*-test is significant, and because the *p*-value (0.000) is less than the significance level (0.005), the sample data provide sufficient evidence to conclude that the regression model fits the data better than the model with no independent variables (Hair et al. 2010).

Regression analysis

Linear regression analysis was used to estimate the coefficient of the linear equation of the independent variables; performance expectancy, effort expectancy, attitude, social influence, self-efficacy and anxiety that best predict the dependent variable; behavioural intention to use information resources, while facilitating conditions that was hypothesized to directly influence the use of EIR. Subsequent to performing linear regression on items that represented each group of the independent variables, the items in each group were merged together into one variable using the SPSS 'compute command'. This operation allowed for a single variable to represent each dimension of the independent and dependent variables. The results of the linear multiple regression are presented in Tables 3 and 4.

Factors influencing the use of electronic information resources by the professoriate

The results in Table 3 show that performance expectancy ($\beta = 0.269$, $t = 4.730$, $p = 0.000$), effort expectancy ($\beta = -0.253$, $t = -3.184$, $p = 0.002$), attitude ($\beta = 0.668$, $t = 9.076$, $p = 0.000$) and social influence ($\beta = -0.146$, $t = -2.734$, $p = 007$) have significant influence on behavioural intention to use e-resources by the professoriate. Self-efficacy ($\beta = 0.138$, $t = 1.305$, $p = 0.194$) and anxiety ($\beta = 0.014$, $t = 0.147$, $p = 0.883$) are poor predictors of behavioural intention to use e-resources. Facilitating condition (Table 4) ($\beta = -0.071$, $t = -0.903$, $p = 0.368$) and behavioural intention ($\beta = 0.130$, $t = 1.208$, $p = 0.229$) were weak predictors of use of e-resources. The results are depicted in Figure 1.

TABLE 2: *F*-Statistics test.

Model	Sum of squares	df	Mean square	F	Sig.
Regression	3.600	4	0.900	6.976	0.000
Residual	19.743	153	0.129	6.976	0.000
Total	**23.343**	**157**	-	-	-

Note: Predictors are PE, EE, AT, SI, SE and AX. Dependent variable: Intention to use e-resources.

df, degrees of freedom; *F*, Fisher; Sig., significance; PE, performance expectancy; EE, effort expectancy; AT, attitude; SI, social influence; SE, self-efficacy; AX, anxiety.

TABLE 3: Regression result of determinants of use of electronic information resources.

Model	Standardised coefficients beta	T	Sig
Constant	-	2.920	0.004
Performance expectancy	0.269	4.730	0.000
Effort expectancy	-0.253	-3.184	0.002
Attitude	0.668	9.076	0.000
Social influence	-0.146	-2.734	0.007
Self-efficacy	0.138	1.305	0.194
Anxiety	0.014	0.147	0.883

Dependent variable: intention to use e-resources.

Sig, significance.

Discussion

Factors influencing use of information sources by the professoriate

The results of the study reveal that performance expectancy, effort expectancy, attitude towards use of technology and social influence significantly influence the professoriates' use of EIR, while facilitating condition, self-efficacy and anxiety were not significant predictors of intention to use EIR. This section discusses the results of these findings.

### Performance expectancy (perceived usefulness)

Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance (Venkatesh et al. 2003:447). The results show that performance expectancy highly influenced use of electronic resources for teaching and research by the professoriate. Davis (1993) identified perceived usefulness as a key variable that influences intention to make use of technology, and is buttressed in this study to be a vital factor in professoriates' use of electronic resources. Studies (Ajjan & Hartshorne 2008; Muhsin, Partono & Ahmad 2016) have found performance expectancy to exert a stronger influence on the use of information systems. Ajjan and Hartshorne (2008) found performance expectancy to be positively associated with attitude towards use of Web 2.0 technologies, indicating that a positive

TABLE 4: Regression result of determinants of use of electronic information resources.

Model	Standardised coefficients beta	T	Sig
Constant	-	13.552	0.000
Facilitating condition	-0.071	-0.903	0.368
Behavioural intention	0.130	1.208	0.229

Dependent variable: use of e-resources.

Sig, significance.
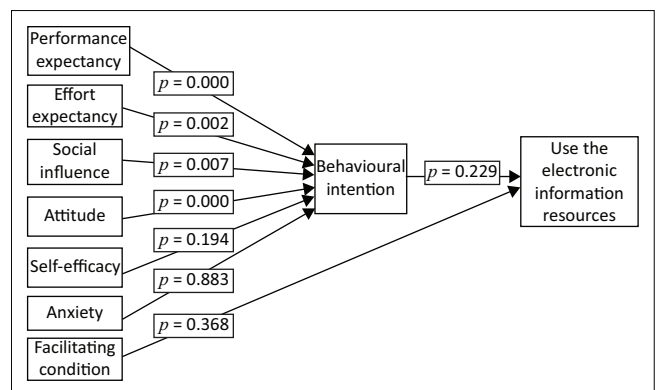
Source: Authors' own work, adapted from Venkatesh, V., Morris, G.B., Davis, G.B. & Davis, F.D., 2003, 'User acceptance of information technology : Toward a unified view', *MIS Quarterly* 27(3), 425–478, viewed 20 April 2017, from https://www.researchgate.net/publication/220259897_User_Acceptance_of_Information_Technology_Toward_a_Unified_View

Note: Self-efficacy, anxiety and facilitating condition are weak predictors of intention to use electronic resources.

UTAUT, unified theory of acceptance and utilisation of technology

FIGURE 1: Extended unified theory of acceptance and utilisation of technology model showing the statistical significance of performance expectancy, effort expectancy, social influence and attitude in predicting intention to use electronic resources.

perception of perceived usefulness of technology could most likely encourage the use of a technology. Tibenderana and Ogao's (2008) study on the contrary demonstrates a negative effect of performance expectancy on behavioural intention to use electronic library services.

Effort expectancy (perceived ease of use)

Effort expectancy is the degree of ease associated with the use of a system (Venkatesh et al. 2003:450). The construct originates from the technology acceptance model (TAM), referred to as perceived ease of use (Davis 1993). According to Davis (1993), perceived ease of use is one of the strongest determinants of use of technology. Its strength in predicting use of technology is seen in various empirical studies on information science (Venkatesh 2000; Venkatesh & Morris 2000), and is supported by the results of this study. In other instances, perceived ease of use is related to self-efficacy. In studying factors affecting the faculty's use of e-learning technologies, Buchanan et al. (2013) observed that individuals high in self-efficacy with respect to a particular technology perceived it as easier to use. In spite of the wide effect of effort expectancy on technology usage behaviour, Muhsin et al. (2016) reported its non-significance on a professoriate's intention to use e-journals.

Facilitating conditions

The results from this study show that facilitating condition was not a significant predictor of use of EIR. However, a look at the contribution of the individual items of facilitating conditions shows that the first two items: ('I have the resources necessary to use electronic information resources for teaching and research', x = 2.97) and ('I have the knowledge necessary to use electronic information resources', x = 2.98) have high mean scores when compared to the low mean scores (x = 1.77; x = 1.54) of the last two items respectively. This implies that whereas the professoriate had the knowledge and resources necessary for the use of EIR for teaching and research on one part, the incompatibility of their phone (at a personal level) and lack of technical personnel to assist in time of difficulty with EIR pose a technical challenge (at the structural level) to the professoriate's effective use of information resources for teaching and research. It can be implied that though the phones used by the professoriate may be compatible for using EIR, the small screen size of the smart phones poses an inhibitor to the effective use of EIR for teaching and research. Studies (Jacob & Issac 2008; Miller 2012) have shown that the small screen size of smartphones limits their usage for reading, especially among the older faculty members. Though this study found facilitating conditions not to be significant in contributing to intention to use electronic resources, on the contrary, Muhsin et al. (2016) found it to have a positive and significant relationship to the actual use of e-journals.

Self-efficacy

Self-efficacy is defined as the degree to which an individual judges his or her ability to use a particular system to accomplish a particular job or task. The study showed that the professoriates have high self-efficacy in using EIR. The high self-efficacy scores could be attributed to training and repeated use of EIR. This suggests that in a digital world where academic faculty have constantly embraced new technologies to improve teaching and learning, continuous training for the faculty is expected to lead to high self-efficacy in the use of EIR. This shows how technology competencies can be improved with constant awareness, training and the use of technology. This notion is consistent with the findings of Ozdemir (2017) that engagement with technology can increase self-efficacy levels.

Anxiety

Anxiety measures the degree of emotional reactions associated with the use of a particular system. Computer anxiety is the apprehension felt by individuals when they have used computers or when they have considered the possibility of using a computer (Achim & Al Kassim 2015). In this study, anxiety describes the apprehension felt by the professoriate when using EIR for teaching and research. The professoriate in this study have a low level of anxiety towards the use of EIR for teaching and research. This result combined with the high self-efficacy scores show an inverse but positive relation between self-efficacy and anxiety over the use of EIR. This implies that high scores on self-efficacy translate to less anxiety in using technology. This is consistent with some studies (He & Freeman 2010; Thatcher & Perrewé 2012), which showed that computer self-efficacy negatively influences an individual's computer anxiety.

Attitude

Attitude towards using technology refers to an individual's overall affective reaction to using a system (Venkatesh et al. 2003). The term 'attitude' connotes a strong evidence that the measure employed places an individual on a bipolar affective dimension (Ajzen & Fishbein 2005:3). The professoriates in this study are favourably disposed towards EIR, and therefore exhibit a positive attitude towards electronic resources. Similar to this finding, Liu et al. 2010 have provided adequate support on the significant influence of attitude on use of technology. To this end, Albirini (2006) pointed out that successful implementation of information technologies in education depends on the attitude of the educators who ultimately decide its use in the teaching process.

Social influence

Social influence is the degree to which an individual perceives that important people believe he or she should use the new system (Venkatesh et al. 2003:451). It connotes the societal expectation from the professoriate to be able to use EIR. In today's digital world, much is expected from the professoriate who are surrounded by digital innovations. Social influence was found to be significant in influencing the professoriate use of EIR. Similar to the finding, Anandarajan, Simmers and Igbaria (2000) observed the influence of social dynamics on

the intention to use technology. Specifically, Muhsin et al. (2016) found social influence in combination with performance expectancy to have influenced use of e-journals by academics.

Behavioural intentions

Behavioural intention refers to a person's intention to perform various behaviours. Intention may be viewed as a special case of beliefs, in which the object is always the person himself and the attribute is the behaviour. In spite of the high descriptive value of intention in predicting use of EIR, regression result shows the weakness of the measurement items in predicting use of EIR. This connotes that though intention precedes use, intention on its own does not equal to use. Intention is a mere declaration of intent, which can change depending on the circumstances. In this sense, a person can use a technology without prior intent. In essence, behavioural intention can stand alone and does not necessarily precede use at every instance. Ajjan and Hartshorne (2008) found behavioural intention to have a very significant effect on the actual behaviour of using Web 2.0 technology. Also, Muhsin et al. (2016) found behavioural intention to have a positive and significant relationship to actual use of e-journals.

Implications of the study

The outcome of this study has wide implications for theory, practice and policy. In relation to theory, extending the UTAUT with the three additional constructs supports similar evidence on how the model can be extended to different contexts, as well as help to provide a theoretical foundation for further research. The study observed that the items that made up facilitating conditions have individual and structural elements that constitute barriers to seeking information. In practical terms, a clear separation of these barriers will help policy makers and the academic library to understand where the actual problem lies in information services delivery such that intervention can be developed to target the specific problem. Understanding of the factors that influence the use of EIR could serve as a framework for the academic library in promoting awareness and use of online databases and electronic journals. With respect to policy, this study provides the university and the academic library indicators for policy formulation that focus on improving information services that specifically address the information requirements of the professoriate as a unique group.

Conclusion

The study examined the determinants of use of EIR by professoriates in three federal universities in Nigeria, using an extended UTAUT model that included attitude, self-efficacy and anxiety, as a framework to guide the study (Venkatesh et al. 2003). The regression results show that performance expectancy, effort expectancy, attitude and social influence significantly influenced use of EIR. The descriptive statistics, however, show that the professoriate

have high self-efficacy and a low level of anxiety in using EIR. The statistical, theoretical and practical significance of these additional constructs in an academic context is an important justification for their inclusion in the UTAUT model.

Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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