Behavioral intention of students to use electronic resources at Hassan Usman Katsina Polytechnic, Katsina State, Nigeria

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Abstract
The objective of this paper was to examine students' behavioral intention to use electronic information resources at Hassan Usman Katsina Polytechnic, Katsina State, Nigeria. The study employed a survey research design. After collecting data from the respondents through the survey questionnaire, the UTAUT variables were tested using structural equation modeling (SEM) with 180 student's population. The questionnaire was developed in line with previous studies. The study adopted convenient sample technique. Students who were found at the E-library unit were given the questionnaire to fill. Statistical analysis from the SEM reveals that effort expectancy and performance expectancy were found to be significant on students' intention to use e-resources. The construct of social influence and facilitating conditions proved to be insignificant on behavioral intention. It was found that age, gender, computer experience, and discipline partially affect students behavioral intention to use e-resources. The result of the study has produced vital conclusions that could enable institution management and the libraries to take drastic measures to improve student's use of the electronic library. The study recommended that institution management should collaborate with the library and teaching faculty to encourage students to use e-resources.

Keywords: Behavioral intention, e-resources, UTAUT, academic libraries, students, polytechnic, Nigeria

Introduction

Academic libraries support teaching, learning, and research activities by providing relevant information resources with the help of modern technologies such as Information and Communication Technologies (ICT). The integration of ICT in libraries like computers, databases, the Internet, and other information storage devices in information handling has increased user access to information services and changed the way people interact with information. The acquisition of information media in electronic format have modified information handling and management in academic libraries. These technological developments have aid in rendering efficient information service and it has improved research and productivity of staff and students. Specifically, e-publishing has led to the emergence of digital libraries, electronic libraries, and virtual or libraries without a wall.

Electronic information resources sometimes referred to as e-resources, are the printed format of information resources that were converted into digital or generated electronically which are accessed with the use of any electronic information reading device. These resources include OPAC, CD-ROMs, online-databases, e-journals, e-books, internet resources, and can be accessed via any electronic reading devices like computer, IPad, or mobile phones.

The benefit of e-resources to academic research includes current and up-to-date information, faster and easier access to information, full-text search, and access to a wider range of information (Owolabi, Neil, & Mhlongo, 2016). Abubakar and Akor (2017) states that e-resources are useful for improving the quality of research, increased quantity of research publications as well as eliminating the problems of geographical location. People in

academic institutions use electronic information resources to meet their information needs apart from printed materials. In this regard, library users from home or elsewhere use several options to search and navigate information with the Internet via authentication methods without physically coming to the library (Vijayalakshmi, Rani, & Sornam, 2017, Katablwa, 2017). It is therefore important to understand user intention to use electronic resources. However, user perception with e-resources determines if the information resources are to be used or not (Akpojotor, 2016), and computer knowledge and skills assist in the proper use of the resources (Vijayalakshmi, Rani, & Sornam, 2017). The use of e-resources has been acknowledged to be regular in the academic environment (Dongardive (2015), and it has significantly impacted on academic performance of students (Sivathaasan,& Velnampy, 2013). The availability of e-resources with ease of access attracts users to decide usage especially those who can operate computers. Optimum utilization of information resources by users depends on the availability, awareness, and skills of the intended users (Ankrah &Atuase, 2018, Isibika, & Kavishe 2018).

Previous studies have investigated user acceptance of e-resources using different information system theories such as Diffusion of Innovation Theory (DOI), The Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), and recently Unified Theory of Acceptance and Use of Technology (UTAUT). In this study, the UTAUT was adapted to investigate students intention towards using e-resources. The UTAUT was proposed by Venkatesh, Morris, Davis, & Davis (2003) and was tested in several studies. The literature on ICTs adoption is lacking particularly digital and electronic library in terms of publications available on user acceptance as per the geographical location (Alajmi, 2019). This study is considered important because there is a paucity of research regarding e-resources adoption among students in developing nations. Few studies were done in Nigeria and Polytechnics has not received any attention. This gap necessitates the need to conduct this study.

Objectives of the study
The objective of the study is to examine the behavioral intention of students to use electronic information resources at Hassan Usman Katsina Polytechnic, Katsina State, Nigeria.

Literature review
Research on electronic information resources is still ongoing. Most of the discussion centred on examining e-resources preference, purpose, challenges and applying theory in understanding user intention to use technology (Alajmi, 2018). Deans and Durrant (2016) investigated the Knowledge and use of electronic library resources in Jamaican Community Colleges. The results of the study indicated that students are increasingly using internet search engines for research purposes rather than online databases. Mawere and Sai (2018) reports that despite the low usage of e-resources in developing countries, presently students continue to adapt and utilize the resources due to the availability of ICTs facilities in most academic libraries. This development according to Bhat, (2019) have an impact on students learning performance, increased their ability to complete their assignments on time and enhanced their interest in research and learning, and perform better in exams.

Deng (2010) examined the trends in utilizing electronic information resources in higher education in Australia and discovered that about 96% of the respondents use e-resources for work and study. The result also shows that e-resources were used very frequently with more than 59% of the respondents access them more than one time a week, out of which, nearly 50% of the

respondents accessed e-resources from the library. About 61.4% of the respondent's claims access to e-resources from multiple locations. Ease of access and quality of information were the major reasons that motivate users to use e-resources. The study concludes that the use of e-resources is much dependent on the user and the purpose of using.

Masrek and James (2016) examined the determinants of user satisfaction in the context of the academic web digital library (DL). A questionnaire-based survey used by previous researchers was used for the collection of data from undergraduate students in University Teknologi MARA. Findings indicated that information quality, systems quality, service quality, perceived usefulness, perceived ease of use, and cognitive absorption significantly predicted students' satisfaction with the digital library. Ayele and Sreenivasara (2013) investigated the determinants of e-library end user's acceptance and use in academic libraries. Findings of the study revealed that 39.13% of the respondents had enough skills to use the e-library services, 47.83% were uncomfortable about the sufficiency of their skills to utilize ICTs services provided in the university, and 13.4% have no ICTs skills at all. Also, about 87.97% of the respondents had limited awareness about the existence of e-library resources, 21.38% are aware while 20.65% did not know anything about the existence of e-library services. Ukachi (2015) explored students' attitudes as a determining factor in electronic information resources used in university libraries in Nigeria and discovered that electronic information resources were not adequately utilized due to student's negative attitudes towards e-resources usage. Awwad and Al-Majali (2015) investigated the determinants of user behavior regarding electronic library services and the moderating effects of gender, age, experience, education level, and academic discipline in public Jordanian universities and found that the

intention to use electronic library services is dependent on performance expectancy, effort expectancy, and social influence, while students' use behavior is dependent on facilitating conditions and intention to use. In a similar study, Barhoum (2016) examines user acceptance of e-information services as information resources. Findings reveal that an important number of external variables could directly impact the perceived usefulness of the e-library services, such as free access, information architecture, content richness, publisher quality, the e-library self-efficacy, the task technology fit, the perceived easiness of the e-library system and the user satisfaction, and could impact the behavioral intention, as predicted by the perceived usefulness of the e-library services. Piniga, Cleopa Phir (2017) surveyed the acceptance of e-resources by students in Zimbabwe state university libraries. The result of the study indicates that Social influence, price value, and habit were found to be the most notable factors affecting the intention to use e-resources. performance expectancy and hedonic motivation were also found to be significant on the intention to use e-resources. Okorie, Nwokocha, & Ibenne(2018) examine how the use of e-resources influences HND students' in the department of library and information science at Federal Polytechnic Nekede, Nigeria. The finding of the study reveals that e-books, e-journals, free web resources, CD-ROMs, and online databases were freely available for HND students. More than half of the respondents indicate that the use of e-resources has significantly influenced their academic performance in writing and presentation, performance in class, test, as well as performance in-class assignment and examination.

Chohda, (2015) Examine the use of e-resources in the Panjabi University library. It is found that respondents (38.67%) explore electronic books followed by 32% electronic Journals. It is observed that 73.33% of

respondents are satisfied with e-resources which are available in the library. The study recommends that the library should provide user training and new techniques like controlled vocabulary and advanced search strategies which can make the electronic search process much faster and easier. The findings of the study by Kwafoa, Anhwere and Manu, (2019) showed that students are aware of e-resources provided in the University library but do not adequately utilize the resources to support their academic endeavor due to the lack of information literacy skills. Very few students were able to participate in the information literacy program organized by the library. The result further revealed that the majority of the postgraduate students access e-resources on the campus using desktop computers, laptops, IPad and mobile phones.

Alkahtani, (2016) investigated the attitudes of Princess Nora University Students towards using electronic information resources of the library. The study explored the student's behavior and the purpose of using e-resources. The study targets both graduate and undergraduate students of the University with 380 samples. The findings revealed that the majority (98%) indicated that they were using the library e-resources and 49% spent 1 hour and 45.1% spent between 2-4 hours using the e-resources. The purpose of using e-resources varies among the students. Some used the e-resources for academic purposes, and the majority used them for non-academic purposes such as chatting and sending an email. The study further revealed that the students had a positive attitude towards the use of library e-resources. The study also establishes that there is a positive correlation between attitude and use of e-resources among the students.

Apuke and Iyendo (2018) investigated university students' usage of e-resources for research and learning in Northeast Nigeria and discovered that lack of

digital readiness among staff and the institution, lack of e-library to access, and utilize online information resources especially journals were the problems militating against effective use of the Internet within their universities; that a majority of the students relied on their smartphones to access and utilize the internet resources through personal subscription from the internet services providers.

Patel and Darbar (2017) in their study found that current and up to date information, easy access, and prompt retrieval of information were the factors that influenced students' usage of e-resources responses. Hoq and Haque (2018) investigated students' perception of the use of electronic resources and discovered that the students' perception towards the benefit of e-resources were the quick search and retrieval, usefulness ease of use, and remote access. Foluke (2019) studied the factors responsible for e-books acceptance among students in Nigeria and found that the usage of e-books in scholarly databases was low; that the performance expectancy, effort expectancy, social influence, and facilitating conditions were the factors that influenced e-resources adoption among the students and that gender difference played a moderating role.

Research model and hypothesis
There are several theories related to user acceptance of technology which focuse on user intention in particular behaviour (Owolabi, Neil & Mhlongo, 2016). The UTAUT has been one of the most widely used theory in many information system studies particularly user acceptance of technology because it was found to be a robust model in explaining human behavior.

The purpose of this study is to determine the UTAUT variables responsible for the student's intention to use electronic information resources. The UTAUT has been used in previous studies (Attuquayefio &

Addo 2010; Oye, Iahad & Ab-Rahim, 2012; Awwad & Al-Majali, 2015; Owolabi, Neil & Mhlongo, 2016; Liebenberg, Benadé & Ellis, 2018; Foluke, 2019).

The UTAUT was developed by Venkatesh, Morris, Davis and Davis (2003). They conducted an empirical study in which eight competing models on user behavior were condensed into a single model and proposed the UTAUT. The purpose of the unified theory is to solve the problems found in the previous models. The UTAUT has condensed the 32 variables of the existing 8 models into 4 main constructs and 4 moderating effects (Oye, Iahad & Ab-Rahim, 2012). The theory postulates three direct determinants of intention to use (performance expectancy, effort expectancy, and social influence) and two direct determinants of usage behavior (facilitating conditions and intention) and the moderating effect of age, gender, experience, and voluntariness were used as additional features of the UTAUT as indicated in Figure 1. The model has accounted for 70% of the variance on intention. The authors acknowledged a limitation of content validity due to measurement procedures and recommended that future research should be targeted at more fully developing and validating appropriate scales for each of the constructs with emphasis on content validity and revalidating or extending the UTAUT. The UTAUT factors adopted are described below.

Performance Expectancy: Performance expectancy (PE) 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, Morris, Davis & Davis, 2003). In this study, PE is the degree or extent to which the students believe that using e-resources will help him/her achieved/accomplish an academic assignment. This construct was found to have a direct influence on behavioral intention to use new innovation (Foluke, 2019; Attuquayefio &

Addo, 2010; Liebenberg, Benadé & Ellis, 2018). In contrast, Pinigas, Cleopas and Phiri (2017) established that PE is not significant in influencing behavioral intention to adopt electronic resources. Based on this, the following hypothesis was proposed:

Hypothesis 1: Performance expectancy significantly influences behavioral intention to accept and use electronic information resources.

Hypothesis 1a: Age, gender, computer experience, and discipline moderate the influence of PE on BI to use electronic resources.

Effort Expectancy: Effort expectancy (EE) is defined as "the degree of ease associated with the use of the system" (Venkatesh, Morris, Davis & Davis, 2003). In this study, EE is the degree to which students believe that using e-resources is easy and free form effort. The UTAUT established a direct influence of EE on behavioral intention. Meaning EE had a significant influence on BI. Several studies have reported the influence of EE on BI. The EE is more salient for women than for men, and the gender differences predicted could be driven by cognitions related to gender roles (Venkatesh, Morris, Davis & Davis, 2003). In this regard, the following hypothesis was proposed:

Hypothesis 2: Effort expectancy influences behavioral intention to accept and use electronic information resources.

Hypothesis 2a: Age, gender, computer experience, and discipline moderate the relationship between EE to BI

Social Influence: Social influence (SI) is defined as "the degree to which an individual perceives that important others (e.g. family and friends) believe he/she should use a particular

system" (Venkatesh, Morris, Davis & Davis 2003). Studies have revealed that SI does not have a role in explaining BI to use e-resources (Attuquayefio & Addo, 2010; Oye, Iahad & Ab-Rahim, 2012; Alajmi, 2019), while others indicate direct influence on BI (Pinigas, Cleopas & Phiri, 2017). The theory suggests that women tend to be more sensitive to others' opinions and therefore find social influence to be more salient when forming an intention to use new technology(Venkatesh, Morris, Davis & Davis 2003). Therefore, the following hypothesis was proposed.

Hypothesis 3: Social Influence has a positive effect on BI

Hypotheisi 3a: Age, gender, computer experience, and discipline influence SI to BI

Facilitating Conditions: Facilitating condition (FC) Is "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system" Based on the literature, when both PE and EE constructs are present, FC become insignificant (Venkatesh, Morris, Davis & Davis 2003). Research conducted by Pinigas, Cleopas & Phiri (2017) revealed that FC revealed negative on the adoption of e-resources. The findings contradicted earlier studies in which FC directly influences intention to use technology (Foluke, 2019; Attuquayefio & Addo, 2010; Oye, Iahad & Ab-Rahim, 2012). Venkatesh, Morris, Davis & Davis (2003) theorized that consumer (e-resources user) who is ardent and has access to an appropriate set of FC is believed to develop a higher intention to use technology, so also those with a lower level of FC will have a lower intention to use technology. In this regard, the following hypothesis is proposed.

Hypothesis 4: Facilitating condition has a significant effect on BI

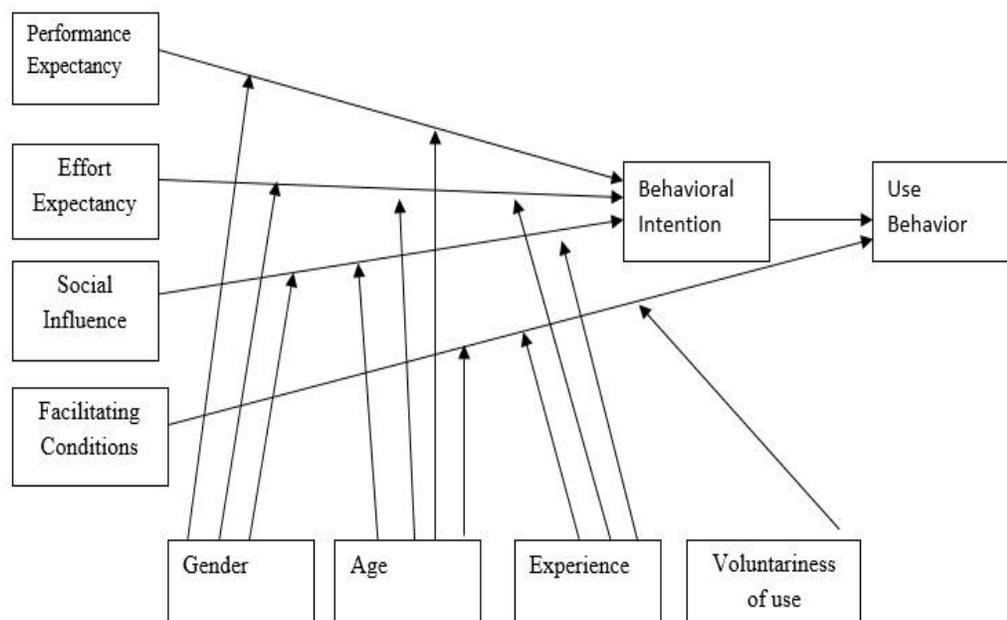**Hypothesis 4a:** Age, gender, computer experience and discipline moderate the influence of FC to BI.

Fig. 1 The UTAUT model adopted from Venkatesh, Morris, Davis & Davis, 2003.

Behavioral intention (BI)

Fishbein and Ajzen, cited in Phua, Wong & Abu (2012) define BI "as the probability or a measure of the strength of one's intention to perform a specific behavior". It is also "the degree to which an individual has formulated conscious plans to perform or not perform some specific future behavior (Venkatesh & Maruping 2008). Behavioral intention is referred to as the "desire of adopters and users of technology while usage rate is the degree to which the use of e-resources is in users' daily life"(Pinigas, Cleopas & Phiri 2017). In this context, intention refers to a desire to use electronic information resources according to a person wish. The user positive perception towards the benefit of e-resources was the driving force that influences the user to utilized e-resources(Isibika & Kavishe, 2018).
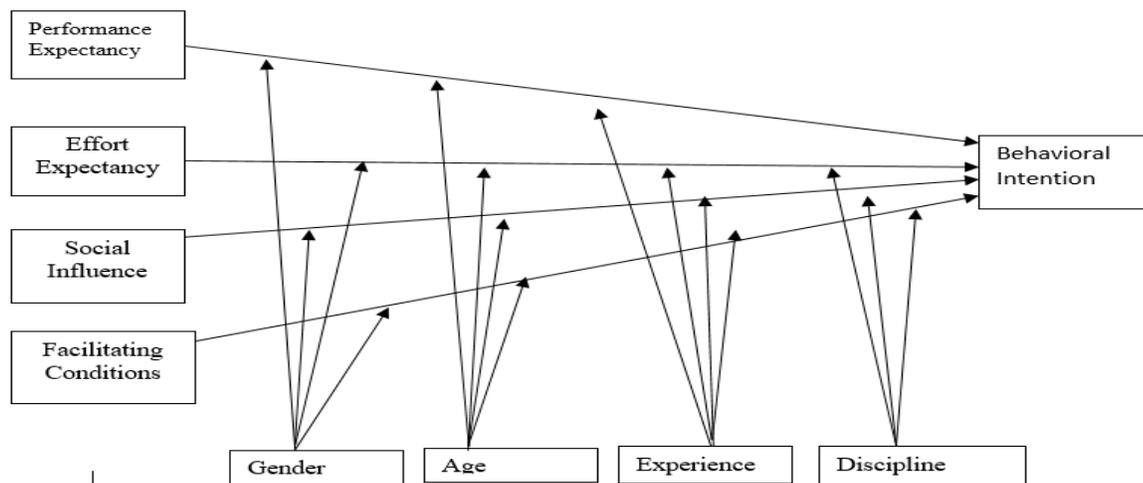

Fig. 2: The Conceptual model

Venkatesh, Morris Davis, & Davis (2003) predict that user acceptance of any form of innovation is affected by the four main constructs which in turn lead a person to developed intention to use the innovation and the actual usage. They also theorized that the moderating effect of gender, age, experience, and voluntariness affect user intention to use technology.

In this study, the four constructs of performance expectancy, effort expectancy, facilitating conditions, and social influences were conceived to affect the student's intention to use e-resources. Venkatesh, Morris, Davis and Davis (2003) focus on user intention and actual usage, this study focuses on the intention to adopt and use e-resources. Also, the moderating effect of voluntariness was substituted with academic discipline as indicated in Figure 2 (conceptual model).

Methods

The study adopted the descriptive survey design using questionnaire as instrument of data collection to investigate the behavioral intention of Hassan Usman Katsina Polytechnic students, Katsina State, Nigeria to use electronic information resources based on the unified theory of acceptance and use of technology (UTAUT) variables. . The statements used in the questionnaire were used in previous studies and their reliability was established. The items measured are PE, EE, SI, FC, and BI. The moderating effect of gender, age, computer experience, and discipline were also considered. The study

consisted of the students of Hassan Usman Katsina Polytechnic. Purposive sampling technique was adopted. Copies of the questionnaire were admistered to a total of 180 students who were in the polytechnic e-library to make use of its services but one hundred and fifty-three (153) copies were successfully completed and returned.. The questionnaire consisted of two sections. Section 1 elicited data on the respondents demography while section two focused on the UTAUT items. Respondents were asked to score the items from 1 "Strongly Disagree" to 5 "Strongly Agree" to correspond to the five-point Likert scale. Descriptive statistics using frequency counts and percentage were used to analyse the respondent's demographics while the statistical package for social sciences (SPSS) software version 24 was used to analyze the UTAUT variables.

Results

One hundred and eighty (180) copies of the questionnaires were administered to respondents and one hundred and fifty-three (153) copies were successfully completed and returned. During the data cleaning process, seventeen (17) respondents were dropped for not completing up to 60 percent of the survey, and six (6) respondents were dropped for having a predictive pattern of response by entering either "4,4,4…" or "2,2,2…" throughout the completion of the survey. After the data screening process, one hundred and thirty (130) respondents were retained for further analysis, which represented approximately 72% response rate. The demographic characteristics of the respondents are presented in Table 1.

Results (Table 1) on demographic features of respondents reveal that the majority of them were male (71.5%) who were within the age group of 23 – 27 years; most were from the social sciences discipline (47.7%) and majority (54.6%) were good at computer application.

Table 1: Demographic characteristics of the respondents (n = 130)

Variables	Frequency	Percentage
Gender		
Male	93	71.5
Female	37	28.5
Age (years)		
18 – 22	26	20.0
23 – 27	72	55.4
28 – 31	20	15.4
> 32	12	9.2
Academic discipline		
Art	26	20.0
Social Sciences	62	47.7
Applied Sciences	34	26.2
Natural Sciences	8	6.2
Computer experience		
Very poor	4	3.1
Poor	15	11.5
Good	71	54.6
Very good	40	30.8

Measurement model results

The study made use of IBM SPSS Amos version 24 to test the measurement and the structural model respectively. The overall fit of the model was checked by examining the Chi-square statistics. A non-significant Chi-square value of 87.848; $p > .05$; degree of freedom = 80 was achieved. The other model fit indices were assessed by integrating the absolute and relative indices which were CMIN/DF, GFI, AGFI, CFI, TLI, RMSEA, SRMR, and Pclose. The result (Table 2) confirms that the measurement model generated a satisfactory fit.

Table 2: Goodness of Fit indices

Fit index	Recommended value	Actual value	Remarks
CMIN/DF	< 3	.848	Excellent
GFI	> .90	.930	Excellent
AGFI	> .80	.895	Excellent
CFI	> .90	1.000	Excellent
TLI	> .95	1.124	Excellent
RMSEA	< .08	.000	Excellent
SRMR	< .08	.057	Excellent
Pclose	> .05	.996	Excellent

Note. χ^2/df is the ratio between Chi-square and degrees of freedom; GFI: Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index; CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RMSEA is the Root Mean Square Error of Approximation; SRMR is Standardised Root Mean Square Residual; Pclose: Close fit.

Reliability and validity of the constructs

This was evaluated using Cronbach alpha, composite reliability, construct validity, and discriminant validity. The study followed a two-step approach of first having a measurement model and later a structural model to test the hypotheses as proposed by Anderson and Gerbing (1988).

Reliability test

The estimated Cronbach's alpha coefficient and Composite reliability (CR) were used to test for the reliability of the data. Reliability is achieved when the value of the Cronbach's alpha coefficients is above the threshold value of .7 which indicates an acceptable level. Also, all CRs should achieve value above .7 (Hair, Hult, Ringle, and Sarstedt, 2014), meaning that all indicator items measure the latent constructs with reliability. Result (Table 3) reveals that all the Cronbach's alpha and the CR coefficients exceeded the threshold value.

Table 3: Cronbach's Alpha and composite reliability test for each construct

Factor	Cronbach's alpha coefficient	Composite reliability
Facilitating Condition (FC)	.836	.881
Social Influence (SI)	.771	.810
Behavioural Intention (BI)	.773	.777
Performance Expectancy (PE)	.748	.777
Effort Expectancy (EE)	.839	.844

Construct validity

Construct validity was used to identify that the selected factors have the required accuracy for measuring the desired constructs. For this purpose, convergent validity and discriminant validity were tested. To examine the convergent validity, the Average Variance Extracted (AVE) and the factor loadings were estimated. The AVE should be greater than .5 while the factor loading should also be greater than or equal to .5. Results for the AVEs were all above .5; which according to Fornell and Larcker (1981), were at an acceptable level. Also, the standardized factor loadings for the retained items ranged from .897 to .690 which were greater than .5 and were all significant at $p < .001$ level (Hair, Babin, and Anderson, 2009). Based on these findings, convergent validity was achieved (Table 4).

Table 4: Convergent validity results for each construct

Factors	Items	Standardised loadings	AVE	T-value
FC	FC1	.842	.645	10.190***
	FC2	.724		8.365***
	FC3	.838		10.075***
SI	SI1	.717	.516	8.171***
	SI2	.707		7.838***
	SI3	.690		7.636***
	SI4	.762		8.273***
BI	BI1	.711	.538	7.647***
	BI2	.767		8.547***
	BI3	.720		7.804***
PE	PE1	.784	.538	8.564***
	PE2	.723		7.492***
	PE3	.690		7.538***
EE	EE1	.811	.731	9.022***
	EE2	.897		10.106***

*Note: ***p < .001.*

Discriminant validity was assessed by examining the AVEs and correlations between each construct. It was observed that the square root of each AVE was greater than its corresponding correlations and the Mean Shared Variance (MSVs) was < AVEs; therefore, discriminant validity was also achieved. Based on the results of the convergent and discriminant validity, construct validity was achieved. Table 5 presents the discriminant validity results.

Table 5: Discriminant validity for each construct

Index	MSV	1	2	3	4	5
FC	**.224**	**.803**				
SI	**.421**	.051	**.718**			
BI	**.279**	.345	.065	**.733**		
PE	**.421**	.093	.649	.311	**.733**	
EE	**.279**	.494	.079	.529	.109	**.855**

Note: Bold values in diagonal elements report the AVE and other matrix entries report the squared correlation estimation between them.
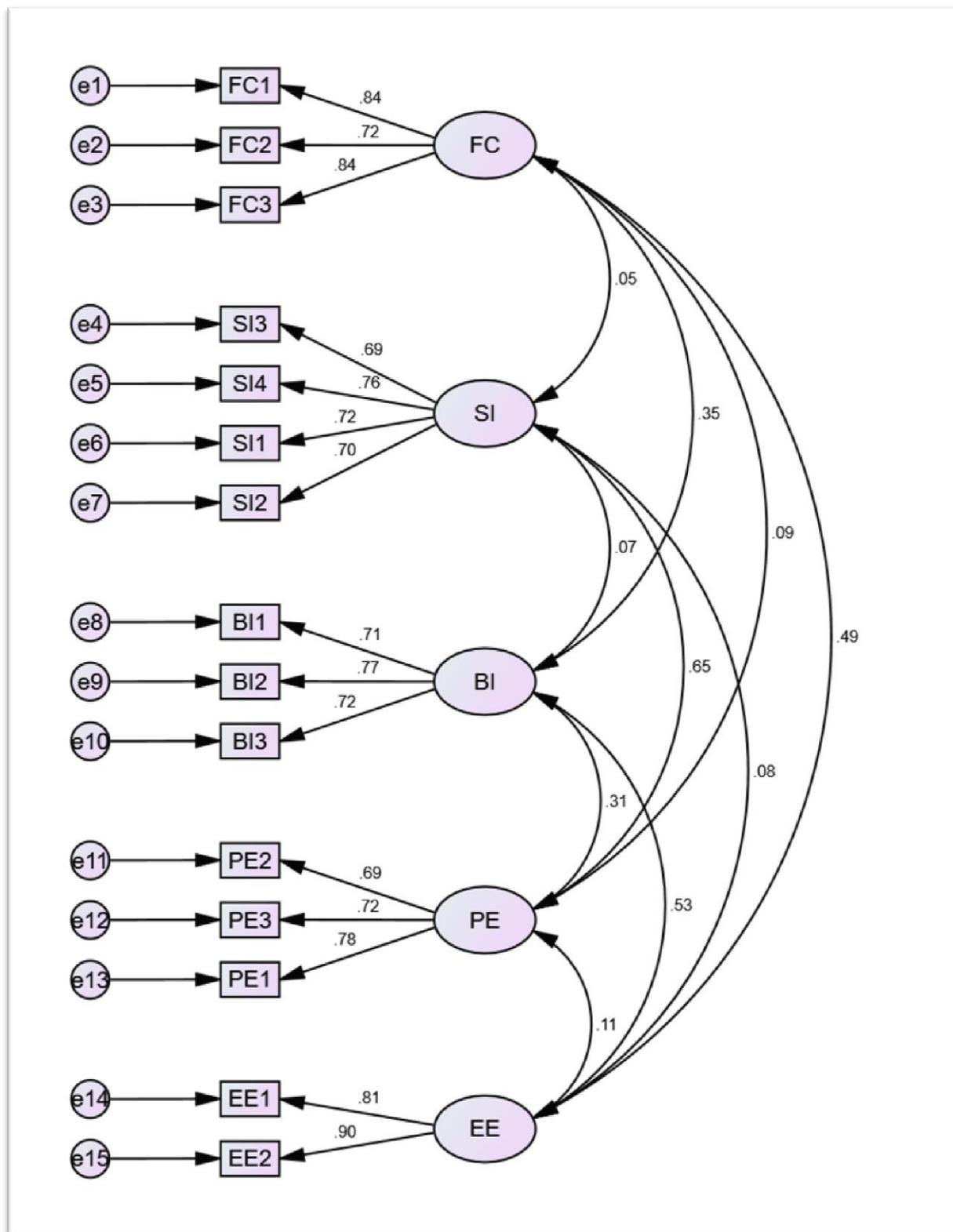
Figure 3. Confirmatory Factor Analysis model of acceptance of e-resources
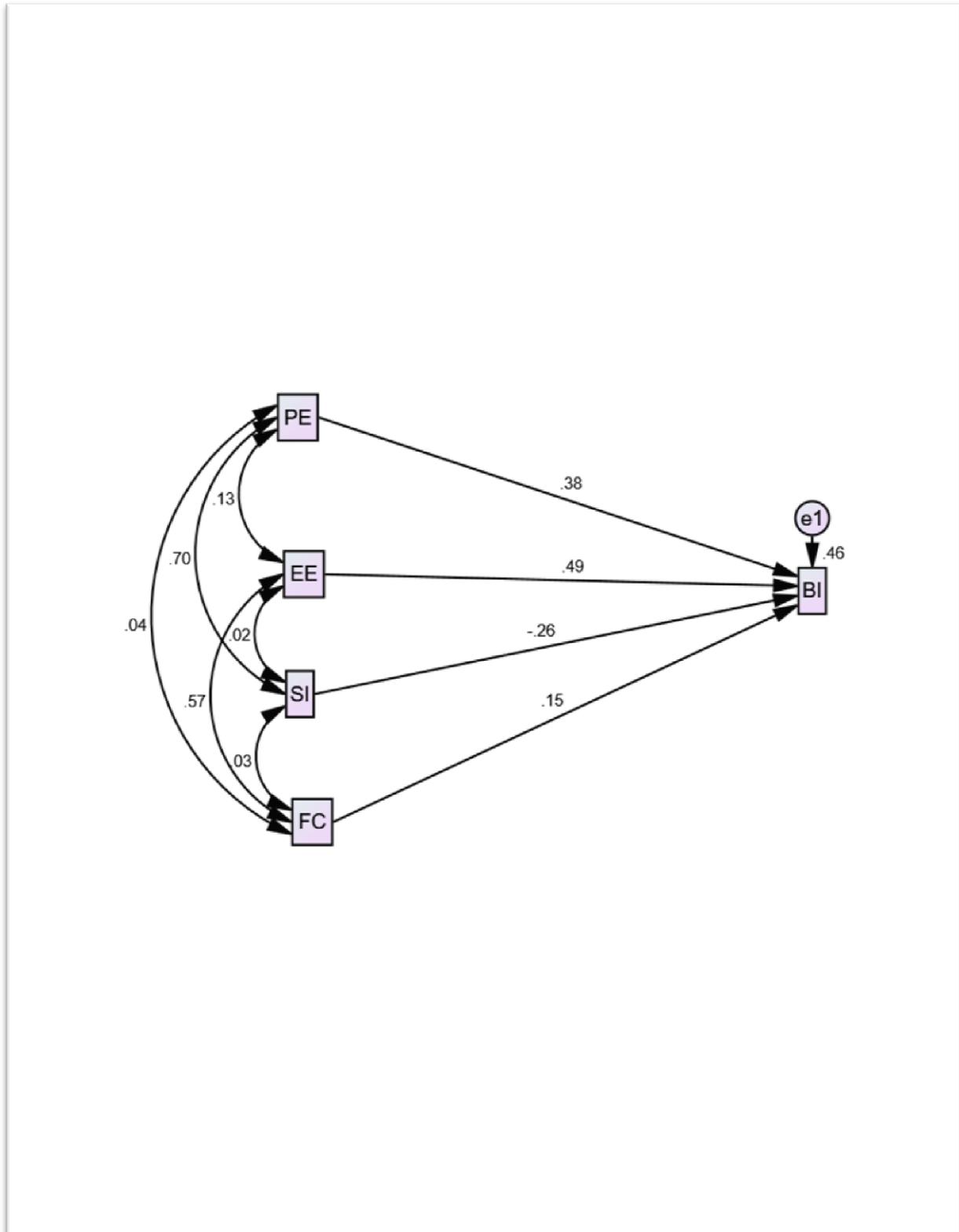
Figure 4: The structural equation model of acceptance of e-resources

Structural Model

Figure 4 shows the outcomes of the initial structured model with standardized parameters. Table 8 summarised the path coefficients in the structural model results of the hypothesis testing. The result showed that performance expectancy (PE) has a positive and statistically significant influence on behavioral intention (BI) to use e-resources (β = .381, p < .01) therefore, hypothesis one (H1) was supported. Effort expectancy (EE) has a positive and statistically significant influence on behavioral intention (BI) to use e-resources (β = .488, p < .01) therefore, hypothesis two (H2) was supported. Social influence (SI) has a negative and statistically significant influence on behavioral intention (BI) to use e-resources (β = -.258, p < .05) therefore, hypothesis three (H3) was not supported. Facilitating condition (FC) has a positive and statistically insignificant influence on behavioral intention (BI) to use e-resources (β = .149, p > .05) therefore, hypothesis four (H4) was not supported.

Table 6: Hypothesis summary table

Hypothesis	Evidence	Supported
H1: PE→ BI	.381***	Yes
H2: EE→ BI	.488***	Yes
H3: SI→ BI	-.258**	No
H4: FC→ BI	.149	No

Moderation analysis

To test for moderation within AMOS, the Alajmi (2019) approach was used by grouping the moderating variables (Gender, Age, Experience, and discipline) into two groups for easy analysis. Gender was grouped into male and female, Age was grouped into two as younger users aged 32 years or less and older users aged 33 years and above; computer experience was grouped into two, very low experience and very high experience while discipline was grouped into applied sciences including natural sciences and social sciences including humanities. The chi-square of the unconstrained model was deducted from the chi-square of the single-degree-of-freedom constrained model. As shown in Table 9, age, gender differences, experience with computers, and discipline moderate the relationship between PE and BI, therefore, H1a was partially established. Also, age, gender, computer experience, and discipline moderate the relationship between EE and BI, therefore, H2a was partially established. Also, age, gender differences, computer experience, and discipline moderate the relationship between SI and BI, therefore, H3a was partially established. Lastly, age, gender, experience, and discipline moderate the relationship between FC and BI therefore, H4a was partially established.

Table 7: Moderating effects results

Moderating path

Gender	Male	Female	
	β	β	Chi-square difference
PE→ BI	.310	.502*	-.192***
EE→ BI	.448***	.632***	-.184
SI→ BI	-.214*	-.366	.151***
FC→ BI	.218*	-.070	.288

Age (Year)	18 – 32	Above 32	
PE→ BI	.352***	2.745***	2.393*
EE→ BI	.518***	.135	-.184***

SI→ BI	-.224*	-2.529**	2.305*
FC→ BI	.137*	.441	-.304***

Experience	**Very Low**	**Very High**	
PE→ BI	.854***	.361***	.493
EE→ BI	-.109	.564***	-.673*
SI→ BI	-.890**	-.216*	-.674*
FC→ BI	.546**	.076	.470*

Discipline	**Applied Sciences**	**Social Sciences**	
EE→ BI	.390***	.672***	-.283
SI→ BI	-.460***	-.096	-.364
FC→ BI	.141	.122	.020***

Significance Indicators:
*p<.05
*** p < .001

Discussion

This study was conducted to test the UTAUT construct in explaining student's intention to use electronic information resources.

The statistical findings of the study showed that the PE construct was significant among the students. The students believe that while using e-resources, several tasks ahead of them such as conducting research, reading, and learning processes, are feasible with the use of e-resources. The findings on PE is in agreement with that of Venkatesh, Morris, Davis and Davis (2003), Foluke (2019)' Attuquayefio and Addo (2010)' Awwad and Almajali, (2015)' Liebenberg, Benadé and Ellis (2018). The moderating effects variables on the PE to BI, is stronger for females, younger adults, and those from natural and applied sciences discipline.

The construct of effort expectancy was found to be the strongest predictor of intention to adopt and use e-resources among the students. The result of this construct is consistent with previous studies. The statistical analysis indicates that the path coefficient in the structural model results of the hypothesis testing between EE and BI indicates the strongest relationship with (β = .488, p < .01). This implies that the students perceived e-

resources carriers like computers, CD-ROMS, databases, the Internet, etc. as easy to use since the majority of the respondents indicate that they are good at using computers. The moderating effect on EE, show that the effect is more salient for females, younger adults, those with computer experience, and in particular those from humanities and social sciences discipline. This clearly shows that females tend to exert more effort on the intention to use e-resources. The finding is consistent with Venkatesh, Morris, Davis and Davis, (2003) in which they report that the effort expectancy is more salient on women than for men.

The social influence construct in this study was found to be insignificant in influencing behavioral intention to use. This means that the level of social influence does not have an effect on behavioral intention to use e-resources among the students. Though previous studies have reported the social influence as a predictor of intention to use. The finding of this study is consistent with the study of Attuquayefio and Addo (2010) and Alajmi (2019) who reported that the construct of social influence slightly influences intention to use. The moderating effect of social influence, indicate that the effect is more

pronounced in females, and from both age groups, and those with lower computer experience, and those from natural and applied sciences discipline. Consistence with the study of Venkatesh, Morris, Davis and Davis (2003), results of this study show that females tend to be influenced by social factors such as friends, colleagues, or family members. Based on the statistical result, there is a low level of commitment by the key actors such as the libraries and academic staff in influencing students to use e-resources. A well-planned library instruction program will serve as a motivating factor for students to use e-resources. This kind of training will invariably have a positive effect on the students to adopt and utilize the resources. Student needs to be aware of the program and the existence of the resources and services in the library or accessible online in a form of e-books, e-journals, CD-ROM databases, online and offline databases. Therefore, the result of social influence in this study does not support the formulated hypothesis.

The construct of FC was also found to be insignificant in this study. The result of the original UTAUT shows a significant relationship between FC and BI and it was confirmed by previous studies such as Oye, Iahad and Ab-Rahim(2012) Liebenberg, Benadé and Ellis (2018). The finding in this study is in agreement with that of Pinigas, Cleopas and Phiri (2017) in which they established an insignificant relationship between FC and BI to adopt e-resources. The result of FC in this study indicates that the students did not show more concern about the FC. This may be the reason why Venkatesh, Morris, Davis and Davis (2003) stated that, when both PE and EE constructs are present, FC become insignificant. This assertion was consistent with the study findings in which PE and EE have a positive and statistically significant relationship on behavioral intention. The result of the moderating effect on FC shows that the effect is noticeable on male, aged adults, those with lower computer experience, while the effect was not significant in both disciplines.

However, in contrast with other studies that investigate intention, this study account for 46% variation on the BI as compared to the studies of Venkatesh, Morris, Davis and Davis(2003) with 56%, Awwad and Al-Majali (2015) 35%, and Pinigas, Cleopas and Phiri(2017) with 52% variation on intention.

Research implication and contribution

Based on the study findings, the performance expectancy and effort expectancy variables should be invigorated to have a well-established e-library with all the necessary technical infrastructure. The libraries have to provide more ICT facilities to increase e-resources visibility amongst the students and the need for relevant and accurate electronic information resources infrastructure and services. This will improve student's effort in using e-resources. There is a need for further ICT skills acquisition among the students since they have a positive perception towards e-resources and have demonstrated the capability of using the resources, However, for proper access and use of e-resources, the libraries are expected to market the resources through awareness programs. They should also understand student's information requirements before acquiring or subscribing to e-resources. The user analysis project will aid in understanding factors that will contribute or motivate students to adopt e-resources. Nowadays, there is high exposure to different forms of technologies among peoples. The present society is regarded as an ICT based environment in which several ICTs tools are used by people to search and share information across a wide geographical area. The continued adoption and use of the Internet and the proliferation of social networking sites and their use, have made people aware of different technology gadgets. Therefore, social influence construct may not be

significant in the environment having a significant number of computer-literate.

The technological infrastructure available in the study libraries was inadequate to influence the student's intention to use e-resources. This calls for the need to improve ICTs infrastructure in the libraries such as dedicated Internet connection, subscription to online resources, stable power supply, and more computer terminals.

This study contributes to the literature on students' intention to use e-resources in the Nigerian context. Although, very few studies were found to have applied UTAUT in understanding student's acceptance of e-resources. Therefore, this study will increase researchers understanding of factors responsible for student's intention to use e-resources in the academic environment.

Conclusion

This research examined the four constructs of the intention to adopt e-resources. The PE and EE construct were found to be the greatest antecedent of student intention to use e-resources. The study established that SI and FC were not significant in the student's intention to use e-resources. It also identified the moderating effect of gender, age, experience with computer, and discipline on BI. It was revealed that the moderating effect was found to have little or no significant influence on intention.

The result of the study has produced vital conclusions in which the institution management and the libraries will take drastic measures to improve student's use of the electronic library. Formal presentation of the study findings to the affected institutions will assist the library management in understanding what makes students accept and use e-resources. Based on the findings of the study, the institution management should collaborate with the library and teaching faculty members to encourage students to use e-resources. They should also introduce the "use of e-library" as a mandatory course to be taught in the first year of students'

enrolments' into the institutions. This will increase students' perception of e-resources benefit, and learned how to properly navigate through the resources.

Limitations and future research

This research is not without limitations. The study was conducted among students in only one polytechnic in Nigeria. This posed a limitation for the study as the result cannot be generalized among students in all Nigeria Polytechnics. The sample size used in the study is also a limiting factor since the study conveniently selected students who are found in the e-library. Future studies shpuld include a large sample of the students.

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