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Factors Influencing Adoption and Use of Web 2.0 among Polytechnic Students in Nigeria.

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Abstract

The study examines the factors that influence adoption and use of Web 2.0 among the polytechnic students in Nigeria. Unified Theory of Acceptance and Use of Technology was used to underpin the study. The study is a survey research and questionnaire was the instrument for data collection. Purposive sampling was used to select the polytechnic, while convenience sampling was used to select four hundred students of the polytechnic. The study assessed the influence of UTAUT constructs on the acceptance and use of Web 2.0. The research established that effort expectancy and performance expectancy were the UTAUT constructs that influenced the use of Web 2.0 among the students of the polytechnic. Based on the findings of the study it is recommended that the manufacturers of these technologies should make it to be user friendly and the interface of the technology needs to be facilitating. There is also need for training on the benefits of Web 2.0 for the use of the students particularly for academic activities.

Keyword: adoption, use, WEB 2.0. polytechnic students, Nigeria

Introduction

The advent of the Web has brought about dynamic and collaborative environment. Web 2.0 platforms have in very short time integrated into people´s lives both socially and professionally. Various scholars have defined Web 2.0 from different viewpoints, Stevenson and Liu (2010) describe Web 2.0 as a collaborative environment in which users have the opportunity to contribute to a growing knowledge base, assist in the development of web-based tools, and participate in online communities. There are various types of Web 2.0 which include Social networking, Social bookmarking, Really Simple Syndication (RSS), blogs, wikis, mashups, tags, folksonomy, tag clouds and podcasts among others. They allow sharing of images, videos and documents, content

production, collaboration and opportunities to interact in new ways through immersive virtual worlds (Aghaei, Nematbakhsh & Farsani 2012; Conole & Alevizou 2010). These tools have brought about a revolution in effective teaching and learning. Adoption and use provide effective communication, collaboration and information sharing with peers in the classroom, faculty members in the lecture rooms (Aghaei et al 2012). In addition, the use of various social media tools is to improve students – lecturer interaction. the use of numerous social media tools is attractive in polytechnic education with the intention to improve student – lecturer interaction. Social media enables discussion and information diffusion amongst students and lecturers, thereby building a common understanding of the course material. This implies that using social media among students enable effective discussion and information diffusion amongst students which will allow them to have a better understanding of their course materials. Currently, social media and its various tools became an integral part in the daily lives of students. Normally, these tools were used for sharing knowledge and to socially communicate with others. Such tools can be also used for the purposes of sharing, promoting and creating online work. Therefore, the use of these tools is said to carry out a wide range of activities in supporting collaborative learning (Conole and Alevizou 2010). Extant literature indicates that many higher institutions are witnessing the use of web 2.o in learning because it permits students to share knowledge and communicate with one another. Conole & Alevizou (2010) maintains that Web 2.0 are being used by the students to have access to learning materials.

The establishment of polytechnic in Nigeria commenced with the enactment of Decree 33 of 1979 (Owolabi, Attama and Akinbode, 2010). Odey (2004) maintains that the polytechnic education was essentially established to engage in researches suitable for nation industries and to boost vocational and technical education that will enhance social economic and industrial development of the society. Essentially section2 (1) defined the functions of polytechnic education to include science, commerce and management as primary focus of educational activities of polytechnic in Nigeria. Therefore, polytechnics are charged with unique assignments of providing training for technological knowledge and skills which would provide the nation industrial, managerial, technological and scientific development. The polytechnics in these sense are the motor for the nation economic and scientific advancement (Owolabi, Attama and Akinbode, 2010). This implies that polytechnics students need to get familiar with various Information communication technologies to achieve the said objectives. These objectives were increased and amended in the

2019 Federal Polytechnic Act. Based on this, the study intends to investigate the factors that influence adoption and use of Web 2.0 among polytechnic students in Nigeria.

Statement of the Problem

Adoption and use of Web 2.0 is very important in promoting effective collaborations and knowledge sharing among undergraduate students particularly in developed countries. It can be said that the level of adoption of Web 2.0 needs to be examined particularly in developing countries such as Nigeria with reference to polytechnic students due to the fact that a serious reluctance to take up new technology still prevails (Kennelly, 2009). In addition, other researchers highlighted the bad influence of using such tools while the adoption of the Web 2.0 is very low compared with what was recorded in developed countries (Owolabi, Diyaolu, Aderigigbe and Yusuff , 2020).

According to Jucevičienė,,and Valinevičienė (2010), many educators are discovering how Web 2.0 tools, such as educational blogs, wikis, and podcasts could provide students with opportunities for greater learner control, active construction of knowledge, and access to collaborative learning environments. Based on the researcher's knowledge it seems there is paucity of literature on factors that determine behavior intention of polytechnic students to use Web 2.0 resources in the content of Nigeria. This study therefore seeks to fill the knowledge gap by identifying the factors influencing the use of these tools of Web 2.0 in a polytechnic in Nigeria.

Objectives of the Study

1. To identify the factor that is the most influential in the acceptance and use of Web 2.0 among polytechnic students.

Literature review

User acceptance of technology

Various theories have been developed to predict acceptance of technology. The theory of reasoned action (TRA) Ajzen and Fishbein (1975), which originated from social psychology, was the first theory to predict acceptance of technology. The TRA explains the relationships between beliefs, attitudes, norms, intentions, and behavior. This theory argues that individual behavior in acceptance or rejection of technology is determined by the person's intention to perform this

behavior and the intention is influenced jointly by the individual's attitude and subjective norm. However, the original TRA has a construct motivation which was silent in the theory, but may be useful in this research.

The TRA was later extended to theory of planned behaviour (TPB) (Ajzen 1980) to allow for behaviours not under complete volitional control and this also provides the reason why intensions do not always predict behaviours. Armitage and Connnor (2001) studied 185 researches that used TPB until 1997 and found that subjective norm was a weak variable in predicting behavioural intention. Their reports also showed that TPB accounted for 27% and 39% of variance in behavior and intention, respectively, but attitude and subjective norm accounted for a significant variance in individual desire than intention or self-prediction and these two were better predictors of behaviour.

Other theories of acceptance were extended from TRA e.g. technology acceptance model (TAM) (Davis et al. 1989) and unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003). TAM is one of the theories that have been used by a lot of researchers (e.g. Davis et al. 1989; Venkatesh et al. 2003; Teo, Su Luan & Sing, 2008; Usluel & Mazman, 2010; Straub, Keil & Brenne, 1997). However, TAM was found to be culture dependent as it was not valid in some cultures e.g. Japanese (Straub, Keil & Brenner, 1997), Malaysian and Singaporean (Teo, Su Luan and Sing, 2008). Some newer models have been developed extending from TAM with other constructs for different purposes in learning environments (Fetscherin & Lattermann 2008). Some of these constructs include technical support, class room dynamics and compatibility, social presence, perceived credibility and computer-efficacy, flow experience, intrinsic and extrinsic motivation.

Unified Theory of Acceptance and Use of Technology (UTAUT)

This study will be informed by the use of the Unified Theory of Acceptance and Use of Technology (UTAUT). These two are found suitable for providing a conceptual model for this study. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a user acceptance model that was introduced by Venkatesh et al. in 2003. The model is an acceptance and adoption model, stemming from the field of business and management at four universities - University of Maryland, University of Virginia, University of Minnesota and University of Arkansas.

The Unified Theory of Use and Acceptance of Technology UTAUT was developed using a combination of eight models namely: theory of reasoned action, theory of planned behaviour, motivational model, social cognitive theory, model of PC utilization, innovation diffusion theory (IDT), and technology acceptance model (TAM1 and TAM2). The UTAUT posits that performance expectancy, social factor, facilitating condition and self-efficacy influence behavioural intention and actual use and these factors are moderated by age, gender and voluntariness. UTAUT attempts to explain the relationships between behaviour intention on the one hand and acceptance and use of technology on the other. The UTAUT has been used and validated in business and some educational contexts (e.g. Venkatech et al., 2003; Oshiyanki, Cairns and Thimbleby, 2007) in different cultures (e.g. Czech Republic, Greece, India, Malaysia, New Zealand, Saudi Arabia, South Africa, United Kingdom, and United State), but has not been tested for acceptance of Web 2.0 tools for learning activities among polytechnic students in Nigeria.

Venkatesh, Sykes and Zhang (2011) conducted a study on how the UTAUT has been used by different scholars by employing Web of Science and Google scholar. Their findings reveal that UTAUT was cited nearly 1000 times in Web of Science and 3000 times in Google Scholar. MIS Quarterly also lists the paper as the 2nd most cited since the inception of the journal. This confirms that the theory has been widely applied in a variety of studies on technology acceptance.

According to Venkatesh et al. (2003), one of the reasons for creating a unified theory was to make it easier and simpler for researchers to select a theory without necessarily using references or contributing to other theories. The UTAUT condensed the thirty two variables found in the existing eight models into four main effects and four moderating factors (Ventakesh et al., 2003:467). The combination of the existing constructs has increased the UTAUT predictive efficiency to 70%, which is a major improvement over the previous TAM theory (Oye, Lahal and Rahim, 2012).

The justification for using the UTAUT in technological acceptance studies, particularly in the context of acceptance and use of Web 2.0 summarized thus:

- It has been widely used when conducting studies on organizational adoption of technology (Marchewka, Liu and Kostiwa, 2007).

- It has been observed that a level of synthesis can be achieved when the strength of some of the most widely used models in acceptance studies are combined, particularly in explaining individual behaviour (Kim, Hyuck, and 2016).
- Kim et al. (2016) notes that the UTAUT could be employed with the strength of the Web 2.0 to explain under graduate students' intention to use Web 2.0.

A critical examination of role of Web 2.0 in educational development, it is very importance to evaluate the use of technologies by students of polytechnics in order to ensure better academic performance and social interaction among them. Applying the theory, to a study on Web 2.0 acceptance and use in developing countries such as Nigeria will surely expand the better understanding of the theory and will also increase robustness of the theory in research.

The theory has four basic constructs which are Performance expectancy (PE) , Effort Expectancy (EE), Facilitating condition, and Social influence (SI).

Performance expectancy is about the perceived benefits a user believes will be gained from using the technology in his or her job, either to improve productivity or the quality of services (Cohen, Bancillion and Jones, 2013:45). Venkatesh et al. (2003) describe performance expectancy as the degree to which an individual believes that using ICT would assist him or her with achieving better results. performance expectancy is the strongest determinant of behavioural intention.

Effort expectancy is "the degree of ease associated with the use of a system" (Venkatesh et al., 2003). Effort expectancy can be described as the degree of ease of access and use of technology (Venkatesh et al., 2003). There are three constructs that capture the concept of effort expectancy. These are perceived ease of use (TAM/TAM2), complexity (MPCU) and ease of use (IDT) (Venkatesh et al., 2003:450). Effort expectancy shares a lot of similarities with the TAM's perceived ease of use.

Social influence can be described as the extent to which an individual places importance on others' belief that he or she should use (or not use) a new technology (Venkatesh and Davis, 2000). Venkatesh et al. (2003) describe social influence as the extent to which an individual allows the opinions of others to influence his/her decision to use a system. This construct is related to TRA, TAM, TPB and C-TAM-TPM, and it can also be traced to MPCU and DOI as social factors. Studies have shown that, an individual's intention to use a new technology can be influenced by

the views, opinions and perceptions of the people around him or her, particularly in his/ her immediate environment (Venkatesh and Davis, 2000).

A facilitating condition is an individual's belief regarding the existence of adequate technical infrastructure as well as management policies and other internal support mechanisms that will encourage the use of the technology (Venkatesh et al., 2003). Facilitating conditions refer to the degree to which users believe that organisational and technical infrastructure will support the use of Information and Communication Technology (Venkatesh et al., 2003). Facilitating conditions are related to the TAM's perceived ease of use, combined facilitating conditions (MPCU), and compatibility (DOI).

Research Methodology

The study is a positivist research which is based on a survey deign. Questionnaire was used to obtain data for the study. The sample for the students was drawn from Higher diploma students that registered in Federal Polytechnic Ilaro library. Purposive sampling was used to select the polytechnic library because the polytechnic has necessary infrastructure that promote effective use of Web 2.0 technologies among the students.

Convenience sampling was used to select the respondents for the study. The questionnaire was administered to 400 students that registered in the polytechnic library out of which 333 returned the questionnaire.

Instrument Administration

The 20 questionnaire items were adapted from the UTAUT study of Venkatesh et al. (2003). The items represent both independent and dependent variables used in the current study. The questionnaire items were designed to measure the behavioural intention of undergraduate students to use of Web 2.0. The words and the statement were modified to fit the technology under investigation and necessary changes were made to the user acceptance scale. All items were measured on a four-point Likert scale, where 1 = strongly agree, 2 = agree, 3 = strongly disagree, and 4 = disagree. A pre-test of questionnaire was done before the commencement of the survey study. The essence of this is to validate the research instrument and to check ambiguity in the questionnaire. A Cronbachs' alpha was calculated to determine the reliability of the items. The

results indicated that the reliability numbers are greater 0.63 which is accepted in research that related to technology acceptance see Table 1 (Zhang, Li, and Sun 2006).

Table 1 : Reliability of the instruments

Questionnaire items for the Cronbach's alpha	Number of items	Cronbach's alpha
Performance expectancy	5	0.734
Social influence	5	0.667
Effort Expectancy	5	0.695
Facilitating condition	5	0.888

Factors influencing behavioural intention of students to use Web 2.0 technologies

Table 2: Performance Expectancy as Factor Influencing Behavioural Intention of Students' Use of Web 2.0

S/N	Statement	SA (%)	A (%)	D (%)	SD (%)	X	SD
1.	Web 2.0 systems is very useful to me in retrieving information material in the library	00(0.0)	221(66.4)	112(33.6)	00(0.0)	2.34	0.473
2.	The use of Web 2.0 aids my quick access of information materials in the library	00(0.0)	159(47.7)	174(52.3)	00(0.0)	2.52	0.500
3.	The use of Web 2.0 enables me to complete my assignment effectively	00(0.0)	184(55.3)	74(22.2)	75(22.6)	2.67	0.820

S/N	Statement	SA (%)	A (%)	D (%)	SD (%)	X	SD
4.	The use of Web 2.0 increases my academic productivity	00(0.0)	183(55.0)	75(22.5)	75(22.5)	2.68	0.820
5.	The use of Web 2.0 makes my studies more interesting	00(0.0)	183(55.0)	75(22.5)	75(22.5)	2.68	0.820

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Table 3: Effort Expectancy as Factor Influencing Behavioural Intention of Students' Use of Web 2.0

S/N	Statement	SA (%)	A (%)	D (%)	SD (%)	X	SD
1.	My interaction with Web 2.0 would be clear and understandable	00(0.0)	200(60.1)	84(25.2)	49(14.7)	2.55	0.737
2.	It is easy for me to use the Web 2.0 to search for relevant information material that best answer my query	00(0.0)	133(39.9)	125(37.5)	75(22.5)	2.83	0.772
3.	I found the use of Web 2.0 easy	00(0.0)	233(70.0)	50(15.0)	50(15.0)	2.45	0.741
4.	Learning to operate the different link on Web 2.0 is easy for me	00(0.0)	174(52.3)	97(29.1)	62(18.6)	2.66	0.773
5.	It is easy doing my assignments through the	00(0.0)	261(78.4)	36(10.8)	36(10.8)	2.32	0.661

	use Web 2.0 in my polytechnic library.						

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Table 4: Social Influence as Factor Influencing Behavioural Intention of Students' Use of Web 2.0

S/N	Statement	SA (%)	A (%)	D (%)	SD (%)	X	SD
1.	People who influence my behavior encourage my use of Web 2.0 that is available in my polytechnic library.	225(67.6)	84(25.2)	12(3.6)	12(3.6)	1.43	0.732
2.	People who are important to me think that I should use Web 2.0	197(59.2)	97(29.1)	26(7.8)	13(3.9)	1.56	0.799
3.	My colleagues have been helpful in training me on the use of 2.0	186(55.9)	99(29.7)	24(7.2)	24(7.2)	1.66	0.897
4.	The staff in my institution library has been supportive to my use of 2.0	273(82.0)	36(10.8)	12(3.6)	12(3.6)	1.29	0.704
5.	My level mates have been supportive to my us of Web 2.0	199(59.8)	60(18.0)	37(11.1)	37(11.1)	1.74	1.042
6.	My lecturers influence my behaviour to use Web 2.0	184(55.3)	97(29.1)	13(3.9)	39(11.7)	1.72	0.992

S/N	Statement						
7.	In general, the library management supports my use of Web 2.0	161(48.3)	133(39.9)	13(3.9)	26(7.8)	1.71	0.868

Table 5: Facilitating Condition as Factor Influencing Behavioural Intention of Students' Use of Web 2.0

S/N	Statement	SA (%)	A (%)	D (%)	SD (%)	X	SD
1.	My institutional library have the necessary resources to support my use of Web 2.0	246(73.9)	48(14.4)	26(7.8)	13(3.9)	1.42	0.727
2.	My institutional library rendered services that encourage me to use the Web 2.0	193(58.0)	75(22.5)	26(7.8)	39(11.7)	1.59	0.807
3.	The e-library department in my institution helps to organise training on the use of Web 2.0	246(73.9)	48(14.4)	26(7.8)	13(3.9)	1.65	0.892
4.	The introduction of Web 2.0 to my asssit me in studies.	260(78.1)	48(14.4)	12(3.6)	13(3.9)	1.28	0.697
5.	The systems librarian is always available for	205(61.6)	77(23.1)	26(7.8)	25(7.5)	1.73	1.043

	assistance with difficulties in using Web 2.0						
6.	I have the knowledge required to use Web 2.0	194(58.3)	87(26.1)	13(3.9)	39(11.7)	1.73	1.002
7.	My polytechnic management ensure the provision adequate facilities require for effectiveness of Web 2.0	210(63.1)	51(15.3)	36(10.8)	36(10.8)	1.71	0.878

Table 6: Behavioural Intention of Students to Use of Web 2.0

S/N	Statement	SA (%)	A (%)	D (%)	SD (%)	X	SD
1.	I intend to use Web 2.0 in my work regularly	201(60.4)	108(32.4)	12(3.6)	12(3.6)	1.42	0.727
2.	I would use Web 2.0 any time to aid my studies	235(70.6)	61(18.3)	13(3.9)	24(7.2)	1.59	0.807
3.	I plan to use Web 2.0 any time I am in need of information	259(77.8)	49(14.7)	00(0.0)	25(7.5)	1.65	0.892
4.	Using the Web 2.0 is good idea	271(81.4)	36(10.8)	13(3.9)	13(3.9)	1.28	0.697
5.	The use of Web 2.0 make work more interesting	164(49.2)	156(46.8)	13(3.9)	00(0.0)	1.73	1.043

6.	I like searching for information materials using Web 2.0	108(32.4)	147(44.1)	65(19.5)	13(3.9)	1.73	1.002

Factors that most influence the behavioural intention of undergraduate students to use Web 2.0

Table 7:   Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.648ª	.420	.413	1.701

a. Predictors: (Constant), FC, PE, EE, SI

Table 8:   ANOVAª

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	686.654	4	171.663	59.361	.000ᵇ
	Residual	948.536	328	2.892		
	Total	1635.189	332			

a. Dependent

b. Variable: BI

b. Predictors: (Constant), FC, PE, EE, SI

Table 9:   Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.404	1.060		3.211	.001
	EE	.051	.039	.056	1.318	.188
	PE	-.112	.085	-.061	-1.322	.187
	FC	. 544	.044	.630	12.451	.000
	SI	.279	.056	.284	4.946	.000

a. Dependent Variable: BI

Table 7 shows the contribution of the independent variables (PE, EE, SI and FC) to the prediction of the dependent variable (Behavioural Intention). It shows a coefficient of multiple correlation (R=0. 648 and a multiple R^2 of 0.420). This means that 42.0% of the variance was accounted for by the predictor variable. The significance of the composite contribution was tested at $p<0.05$. Table 8 shows that the analysis of variance for regression yielded F-ratio of 59.361 (significant at 0.05). This implies that significance exists between the independent variables and dependent

variable, that the other variable not included in this model may have accounted for the remaining variance.

Table 9 shows the relative contribution of the four independent variable to the dependents variable expressed as beta weights, viz: PE (B=0. 051, p>0.05), EE (β=-0.112, p>0.05), SI (β=0.544, p<0.05) and FC (β=0.279, p<0.05). Hence, while SI and FC aware not significant, PE and EE were significant. This implies that PE and EE are the two UTAUT constructs that significantly influence the behavoural intention of the undergraduate students to use the Web 2.0

Discussion of the Findings

The study revealed that performance expectancy and effort expectancy are the constructs from UTAUT that positively influenced behavioural intention of undergraduate students to use Web 2.0 with acceptable p –values of 0.05 which is line with studies of (Carlsson et al. 2006; Deng 2010;Oye, Iahad, and Ab Rahim 2012;). In addition, performance expectancy and effort expectancy have a significant influence on the behavior intention of students to use ICT in the following studies (Jairak, Praneetpolgrang, and Mekhabunchakij 2009; Venkatesh et al. 2003). The findings of the study also affirmed the studies of (Chismar and Wiley-Patton 2003; Cohen, Bancilhon, and Jones 2013; Kijsanayotin, Pannarunothai, and Speedie 2009; Wang et al. 2009). This implies that undergraduate use of technologies is being influenced by PE and EE. Which means students that believe that using Web 2.0 will be of benefits to them will accept the use of Web 2.0

Furthermore, the study as presented in the study revealed that PE and EE influence the use of Web 2.0. This results corroborated the findings of Jayakananthan and Jeyaraj (2019) in Sri Lanka, where PE was found to be a significant factor that influenced the behavioural intentions of students to use technologies.

On the other hand, the findings of the study contradict the finding of Esmaeilzadeh et al. (2015) that examine the behavioural intention of professionals to use technologies in Malaysia. The study employed the use of extended UTAUT. it was revealed that performance expectancy, self-efficiency, and social networks were the factors that influenced the use of the technology. In addition, Mathieu and Sicotte (2015) discovered that facilitating conditions is the main construct that influence the use technology.

Conclusions and recommendations

The extent of the acceptance of Web 2.0 among polytechnic students is a function of positive relationships that influence their behavioural intentions to use and usage behavior of Web 2.0 Performance expectancy and effort expectancy are the two constructs from UTAUT that influence behavioural intention to use Web 2.0. This indicates that the students perceived belief that using the Web 2.0 will make them collaborate, study easily and at the same time improve their academic performance in their studies.

In addition, it is noticed that in user acceptance research that users' intention to use a computer is a function of their perception that such a technology would be advantageous and academic performances. Based on this, the study suggest that Web 2.0 manufacturers should make the technologies user –friendly and need to improve the tools functions and make the technology interface easier to operate.

The limitation of the study lies on the fact that it used only one polytechnic based on this, the finding of the study cannot be generalized on the other polytechnics in the country., in line with this the study recommended that there is a need for further study that will examine the factors influencing behavior intention of students in ND and HND classes and at the same time the study can be replicated in other polytechnics in the country.

References

Aghaei, S., Nematbakhsh, M. A., & Farsani, H. K. (2012). Evolution of the world wide web: From WEB 1.0 TO WEB 4.0. *International Journal of Web & Semantic Technology*, 3(1),.

Ajzen, I., & Fishbein, M. (1975). Belief, attitude, intention behavior: an introduction to theory and research, at: http://worldcat.org/isbn/0201020890

Carlsson, C., J. Carlsson, K. Hyvonen, J. Puhakainen, and Walden. P. (2006) . Adoption of mobile devices/ services: searching for answers with the UTAUT. Proceedings of the 39th Annual Hawaii International Conference on System Sciences (HICSS '06), 4–7 January.

Chismar, W. G., and Wiley-Patton. S (2003) Does the extended technology acceptance model apply to physicians? Proceedings of the 36th Hawaii International Conference on System Sciences, 6–9 January.

Cohen, J. F. Bancihon, J. and Jones. M. (2013). South African physicians of e-prescribing technology: an empirical test of a modified UTAUT model. *South Africa Computer Journal* 50 (1), 43-50.

Cohen, J., J. M. Bancilhon, and M. Jones. (2013). South African physicians' acceptance of e-prescribing technology: an empirical test of a modified UTAUT Model. *South African Computer Journal* 50: 43–54.

Conole, G., & Alevizou, P. (2010). A literature review of the use of Web 2.0 tools in Higher Education, *A report commissioned by the Higher Education Academy.*

Davis, F. Bagozzi, R., & Warshaw, P (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, 35, 982-1003.

Deng, H. (2010) . Emerging patterns and trends in utilizing electronic resources in a higher education environment: an empirical analysis. *New Library World* 111 (3/4): 87–103.

Esmaeilzadeh, P., M. Sambasivan, N. Kumar, and H. Nezakati. (2015). Adoption of clinical decision support systems in a developing country: antecedents and outcomes of physician's threat to perceived professional autonomy. *International Journal of Medical Informatics* 84 (8): 548–56

Fetscherin, M., & Lattemann, C. (2008). User acceptance of virtual worlds. *Journal of electronic Commerce Research,* 9, (3), 231-241.

Jairak, K., P. Praneetpolgrang, and Mekhabunchakij. K. (2009) . An acceptance of mobile learning for higher education students in Thailand. *Special Issue of the International Journal of the Computer the Internet and Management* 17 (3): 361–368.

Jayakananthan, M., and Jeyaraj. W.J (2019) . Behavioural aspects of postgraduate students in using electronic information resources at the library eastern university. *Sri Lanka. Journal of the University Librarians Association of Sri Lanka* 22 (1): 36–55.

Jucevičienė, P., Valinevičienė, G (2010). A conceptual model of social networking in higher education, *Electronics and Electrical Engineering – Kaunas: Technology,* 6(102), 55–58.

Kennelly, P. (2009). An online social networking approach to reinforce learning of rocks and Minerals. *Journal of Geoscience Education,* 57(1), 33-40.

Kijsanayotin, B., S. Pannarunothai, K & S. M. Speedie. 2009. Factors influencing health information technology adoption in thailand's community health centers: applying the UTAUT model. *International Journal of Medical Informatics* 78 (6): 404–416.

Kim, S. J. Hyuck, H. & Yoo, A. (2016). Analysis of the factors influencing healthcare professionals adoption of mobile electronic medical using the UTAUT in a tertiary hospital.*BMC Medical Informatics and Decision Making* 16 (12).11- 21

Maillet, É., L. Mathieu, U. and Sicotte. C. (2015) . Modeling factors explaining the acceptance, actual use and satisfaction of nurses using an electronic patient record in acute care settings: an extension 152 *International Journal of Medical Informatics*84 (1): 36–47.

Marchewka, J. T. Liu, C. and Kostiwa, K. (2007). An application of the UTAUT model for understanding student perceptions using course management software. Communications of the IIMA, 7(2), 93-104.

Oshlyansky, L. Cairns, P. and Thimbleby, H. (2007). Validating the unified theory of acceptance and use of technology (UTAUT) tool cross-culturally. *A Web* 403 7(11) 1- 12,

Owolabi K.A, Diyaolu, B,O . Aderigbe, N.O. & Yusufu, M (2020) Factors influencing the adoption of electronic information resources among postgraduate students in Nigerian universities. Mousaion: South African Journal of Information Studies 38 (2 | 1-22

Owolabi, K. A., Attama, R.O. & Akinbode, R. O. 2010. Revitalizing polytechnic education in Nigeria. *Owena Journal of Library and Information Science* 3 (2): 29-34.

Oye, N. D. A.Iahad, N. & Rahim, N. (2013). The history of UTAUT model and its impact on ICT acceptance and usage by academicians. *Education and Information Technologies.*19 (1), 251-270.

Stevenson, M., & Liu, M. (2010). Learning a language with Web 2.0: exploring the use of social networking features of foreign language learning websites, *CALICO journal*, 27(2), 233-259.

Straub, D., Keil, M., & Brenner, W. (1997). Testing the technology acceptance model across cultures: A three country study. *Information and Management*, 33(1), 1 - 11.

Teo, T., Su Luan, W., & Sing, C. (2008). A cross-cultural examination of the intention to use technology between Singaporean and Malaysian pre-service teachers: an application of the Technology Acceptance Model (TAM). *Educational Technology & Society*, 11(4), 265 - 280.

Usluel, Y., & Mazman, S. (2009). Adoption of web 2.0 tools in distance education. *Procedia Social and Behavioral Sciences*, Vol. 1, 818-823.

Venkatesh, V., Morris, V., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view, *MIS Quarterly,* 27(3), 425–478.

Venkatesh, V., Sykes, T.A., and Zhang, X. (2011).Just what the doctor ordered: A revised UTAUT for EMR system use by doctors. 44th Hawaii International Conference on System Sciences, January 4-7, Kauai, HA.

Wang, C. J., Patel, A. J. Schueth, M. Bradley, S. Wu, J. C. Crosson, P. A. Glassman, and D. S. Bell. (2009). Perceptions of standards-based electronic prescribing systems as implemented in outpatient primary care: a physician survey.*Journal of American Medical Informatics Association* 16 (4): 493–502.