Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

Theoretical Models of Technology Acceptance: A Critical Analysis & Design for Future Research

Dr. Dinesh kumar[1*], Abdulhamid Sanusi Ahmad[2]

[1*]*Associate Professor, School of Education, LPU, India.*
[2]*Research Scholar, LPU, India.*

Received: 02 October 2021 **Accepted:** 19 December 2021 **Published:** 08 January 2022

Abstract: ***This study reviews literature on various technology acceptance models critically focusing on their findings, suggestions and recommendations for future research. The primary purpose of reviewing technology acceptance models was to establish that with the passage of time, many new models emerged by dwelling on the strengths and weaknesses of previous models. So, critical analysis was presented to understand the framework and constructs of different technology acceptance models. Content and reviews on technology acceptance models were identified using authentic database searches like Springer, JSTOR, WebQuest, ProQuest, ResearchGate, Shodhganga etc. In the end, the study highlights the research gaps in technology acceptance in different parts of the world and designs the theoretical framework for new technology acceptance models, particularly for the acceptance of blended learning systems. A comprehensive understanding of this new framework can assist decision makers to identify the reasons for the acceptance or resistance of blended learning among teachers in the future and support them to enhance the acceptance and usage.***

Keywords: Technology Acceptance Model, Blended Learning, Theoretical Framework.

1. INTRODUCTION

A number of studies found that teachers are reluctant to use ICT and some do not use it effectively during the implementation of a new system where one of the common issues is resistance to change (Dashtestani, 2014; Nawi et al., 2012; Salim et al., 2018, Nagpal & Kumar, 2020). The adoption levels of each teacher to change are closely related to the failure or success of the implementation introduced. There is still unclear indication how the teachers handle all the changes even though the teacher had discovered an educational context that has substantial alteration and impacts the teachers' role (Smits & Voogt, 2017). Various theoretical models have been devised to predict adoption and use of technology, like Theory of Reasoned Action (Fishbein & Ajzen, 1975), Technology Acceptance Model (Davis, 1989), Motivational Model (Davis, et al. 1992), Theory of Planned Behavior (Ajzen, 1991), Combined TAM and TPB (Taylor & Todd, 1995), Model of PC Utilization (MPCU)

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

(Thompson, et al., 1991), Innovation Diffusion Theory (Moore & Benbasat, 2001), and Social Cognitive Theory (Compeau et al., 1999).

The Theory of Reasoned Action (TRA)

It was first proposed in 1975 by Fishben and Azjen and it targeted explanations of the relationship between human attitudes and human behaviors within human actions. It predicts how one behaves based on his previous behavioral dispensation. They assume that individual behavior is determined by their innate intentions to perform such behavior and that this intention is, in turn, the function of their attitude towards the behavior and subjective norms. The theory also focuses on developing a system of observation of two groups of variables which include; attitude which was defined as a positive or negative feeling in relation to achieving a particular objective of interest, and subjective norms which are often the representations of individuals' perception in relation to achieving certain goals with the product. The proponents of this theory have given more concern on the importance of intention of use more than the reality of usage of the product. In a real sense people do things because that is what they feel like doing, not because of the actual need related to the model they seem to belong to (Sheppard, et al., 1998). This model of human behaviour can be depicted through three major human cognitive constituents which includes; attitudes, social norms and intentions. Attitudinal aspect entails how individuals feel for a particular behaviour, social norms encompasses social influence, cultural values and societal norms, and intention deals with one's own perception, decision and resolve to embark on certain action or behaviour (Taherdoost, 2017).

Technology Acceptance Model (Davis, 1989)

The technology acceptance model (TAM) is an extension of Theory of Reasoned Action proposed by Fishbein & Ajzen in 1975. It was developed by Davis, 1989; Davis, Bagozzi, & Warshaw, 1989 and is the most applied model of users' acceptance and usage of technology (Venkatesh, 2000). This model emphasized on the two components that determine the users' acceptance of technology i.e. perceived usefulness and the perceived ease of use of the system. In this sense, TAM replaces many of TRA's attitude measures with the two technology acceptance measures—ease of use, and usefulness. In schools, the main purpose to integrate TAM in education is to change the ways through which teachers and students analyze, determine and organize information (Lubis et al., 2019). Louissaint et al. (2020) proclaimed that TAM has increased the capabilities of learners with special needs. So, this model is helping both teachers and students to customize and plan teaching-learning for the benefits of students with disabilities. Despite its frequent uses, TAM has been widely criticized as follows;

- TAM usually falls in the area of assistive technologies, for helping persons with disabilities. As per Tan & Hsu (2018) the critical aspect of increasing integration through TAM has increased complexity in an educational setting.
- Chuttur (2009) asserted that TAM lacks practical value and has limited explanatory and predictive power.
- Benbasat & Barki (2007) suggested that TAM has diverted attention of researchers away from some crucial issues. The later expansions of TAM led to change in IT environments

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

resulting in a state of theoretical chaos and confusion.

Motivational Model (Davis, et al. 1992)

The Motivational Model was developed by Devis et al.(1992) to check how extrinsic and intrinsic motivation facilitates the use of computers in the workplace . Davis, Bagozzi and Warshaw (1992) assert that perceived usefulness and perceived enjoyment enhance majorly behavioral intentions to use computers in the workplace. Extrinsic motivation is seen as that motivation which makes users want to perform an activity because of the perceived value it has in achieving a predetermined goal while intrinsic motivation is one on which the user performs an activity without a predetermined reinforcement or use. Generally, the quality of the output and perceived ease of use impact on both perceived usefulness and perceived enjoyment. The quality of output and perceived ease of use generally influence behavior intentions.

Theory of Planned Behavior (Ajzen, 1991)

This theory was proposed by (Ajzen, 1991). in order to extend the TRA model. In this model perceived behavioral control was added as a new variable to the TRA. PBC is determined by opportunities available, resources and skills to achieve targeted goals. Both TPB and TRA assumed a person's behavioral intentions therefore affecting an individual's behavior. Unlike the TRA, TPB is using the PBC for individual action which is not his control. By adding PBC, limitations were composed as well as self-efficacy type factors achieved (19,20). The TPB has three main factors affecting behavioral intentions and these include; subjective norm, perceived behavioral control and behavioral attitude. TPB has two main problems which are; one's attitude towards information technology is not if the individual has no access to computer systems and the revised TPB is viewed as more suitable for influencing individual's degree of voluntariness to choose or otherwise the use of information technology in schools or workplace.

Technology Acceptance Model 2 (TAM2) Venkatesh and Devis (2000)

It is also known as Extension of TAM (ETAM) and was proposed by Venkatesh in (2000). Certain additions were made on TAM in order to enhance adaptability, explanatory strength and peculiarities of TAM. It came to existence as a result of two different studies; the first one has two constructs of social influence which involves image, norms and voluntariness and cognitive influence which involves output quality, usability and job relevance all in order to improve the predictive power of perceived usefulness of the technology. The second study has identified constructs that have influence on perceived ease of use. The perceived ease of use is related to two major groups namely, adjustment and anchors. Objective usability and enjoyment were the general beliefs of use of computer systems and are called the anchors whereas adjustments has to do with general beliefs formed on the basis of direct experience of a given system. And this includes computer self-efficacy, computer anxiety and playfulness. The enhancement in further categorization and classification of TAM to improve acceptance and adaptability led to TAM2 or ETAM.

Innovation Diffusion Theory (Moore & Benbasat, 2001)

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

This model identified four as factors to examine diversity of innovation which include; channels, time, communication and social system. These factors help in the spread of new ideas. The theory explains why innovation is accepted and at what stage. It classified acceptance of innovation into four categories; early adopters, innovators, late majority, laggards and early minorities.

Social Cognitive Theory (Compeau, et al., 1999)

Social cognitive theory (SCT) was formerly social learning theory. It was proposed and renamed by Albert Bandura in 1986. It was proposed based on three main factors; personal, environment and behavior. These factors studied concurrently give the behavior of an individual or a group of individuals, and such can identify methods that can lead to change of behavior. In the SCT model, behavior factor is majorly concerned with usage and adoption issues. The personal factor involves personality, cognitive and gender aspects of an individual and the environment factor which is external to the individual as they involve the physical environment and social interaction. The model is integrated to evaluate technology usage, adoption and performance using constructs like self-efficacy, outcome expectations, anxiety etc

Unified Theory of Acceptance and Use of Technology or UTAUT and UTAUT2

Eight different models were studied to establish differences and similarities among them and from them the unified theory of acceptance and use of technology was developed UTAUT (Venkatesh et.al., 2003). It has four major constructs as antecedents for acceptance of information systems which include; social influence, effort expectancy, facilitating conditions and performance expectancy. Yet UTAUT identified four major moderating variables as gender, experience voluntariness and age. Despites the wide acceptance of UTAUT, Venkatesh et.al. (2012) incorporated three other constructs into UTAUT: hedonic motivation, price value, and habit, extending UTAUT into UTAUT 2. Compared to UTAUT, the extensions proposed in UTAUT2 produced a substantial improvement in the variance explained in behavioral intention and technology use.

Purpose

The primary purpose of reviewing technology acceptance models was to establish that with the passage of time; many new models emerged by dwelling on the strengths and weaknesses of previous models. So, critical analysis was presented to understand the framework and constructs of different technology acceptance models. The other purpose was to find out the research gaps in technology acceptance in different parts of the world and to trace out the theoretical framework for designing new technology acceptance models, particularly for blended learning systems.

Method and Procedure

A systematic review on conceptual development and literature on ID models developed during the time period of 1974 to 2021 was conducted. Around 10 models and theories which influenced technology acceptance were identified. A reflexive analysis was conducted on identified models to explore the patterns and themes of their development. The critical review analysis was organized in a chronological manner. The procedure involved following steps:

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

- Content and reviews on various technology acceptance models were identified using authentic database searches like Springer, JSTOR, WebQuest, ProQuest, ResearchGate, Shodhganga etc.
- Developmental features, constructs and structure of various models were examined.
- Theoretical framework for new technology acceptance models, particularly for blended learning systems, was designed.

2. REVIEWS AND ANALYSIS

Quite a number of models have been developed by different researchers of educational technology and beyond but for the purpose of this paper the aforementioned will be reviewed and analyzed. User acceptance of an information system entails the decision of the user to buy or implement a particular technology for a long term willingly not as a toleration of the system.

According to Devis (1989) one of the prominent theories/models of technology adoption is the Technology Acceptance Model (TAM). TAM identified two basic constructs that show technology acceptance as; Perceived Ease of Use and Perceived Usefulness. Perceived ease of use is defined as the amount of effort needed to effectively use a technology while perceived usefulness is the extent to which a technology improves the performance of an individual.

Schopfel et al. (2019) asserts that in TAM, the interaction of the two constructs of Perceived usefulness and perceived ease of work results in making the individual employ the use of technology.

Kumar (2019) conducted a study on changing paradigms of mobile technology acceptance in Jalandhar India to identify and validate factors that determine the perception of Indian youths towards mobile technology acceptance. The researcher posits that technology made the world a global village with diverse creativities and innovations which make the world a better place to live. The researcher used 199 respondents through purposive/convenience sampling, the researcher used factor analysis and structure equation modelling to validate the factor structure. The findings from the study reveal that usefulness, reliability, habit and features are the perceived forces in mobile technology marketing in India. The study therefore recommends that subsequent researchers in the area of technology acceptance should apply this model with other economic and social sector activities engaged by government and business organizations.

Similarly, George & Kira (2006) conducted a study with the title of the emotional state of technology acceptance in Quebec, Canada. The study centered on the issues of computer-phobia by undergraduate students, despite the fact that a survey shows that computer anxiety among students is gradually decreasing by the day, but the rate of computer-phobia by students who are undergoing online courses is significantly increasing as well. Hence, anxiety is one of the critical factors that determine the student's perception of online courses.

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

Therefore, researchers refocus their attention on the course and effects of anxiety in relation to the Technology Acceptance Model (TAM). Therefore, George & Kira (2006) investigated the influence of anxiety and computer-phobia on technological acceptance among students, the effects of affect and anxiety were put together to measure the perceived ease of use and perceived usefulness. The findings from the study reveal that there is a significant relationship between affect and anxiety and their controlling functions on perceived ease of use and perceived usefulness. Hence, affect and anxiety may exist concurrently as they both weigh on each side of the Technology Acceptance Model Scale.

June, Chung-Sheng, Chang and James (2003) worked on technology acceptance of wireless internet asserts that communication and services through wireless telecommunications networks that connect mobile devices are becoming a norm on a global scale. The availability of information through wireless internet via mobile devices (WIMD) has created a parallel world. Therefore to benefit from the full potential of wireless internet services depends on the user acceptability. Hence, these researchers came up with a technology acceptance model for wireless internet through mobile devices. The findings from the study reveal that complexity of technology, triggering conditions, social-cultural considerations, and wireless trust environment are responsible for user-perceived short-term and long-term usefulness and ease of using wireless internet via mobile devices. The above factors also determine user intention and readiness to implement Wireless Internet via Mobile Devices in the process of teaching and learning Taherdoost (2017) conducted a study toreview of Technology Acceptance and Adoption Models and Theories. The researcher attempts to find out the user-needs and user-acceptance of technologies. The researcher adopted a model that elucidated the factors that influence the user acceptance or rejection of technological devices in the process of learning. The findings from the study show that user acceptance, trust and confidence in technologies are significant for further usage of any new technology. Hence, acceptance is a function of user involvement and engagement in the process of technological innovation, improvements and development. Nurkholis and Rosalina (2020) conducted research on the topic Determinant of E- Government Implementation Based on Technology Acceptance Model. They examined the Technology Acceptance Model (TAM) on E-government in Malang city of East Java,Indonesia. Questionnaire survey was employed on the people of the city who have used e- government service. The data collected was analyzed using smart PLS. The findings showthat intention is the main factor for the use and acceptance of e-governance, and thedetermining factor of intention is attitude towards e-government. Quality of the system orinformation does not affect peoples' intentions to use e-government. The application developed for the e-government is not advanced and so doesn't cover quite a lot of features tosuit the needs of the e-government. It is recommended that the application is improved withcertain technological advancements.

Warintorn & Sakorn (2021) conducted a study on the Cooperative Education Management System using Technology Acceptance Model at Phayao, Thailand. The researchers posit that the information management system for cooperative education is an integral part of cooperative education for entrepreneurs, higher institutions of learning, and students in order to augment students' experience in the process of their studies. Similarly, a cooperative education management agenda would enhance the creation of keys that will satisfy the needs

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

of organizations. The researchers designed and developed an information management system based on the SDLC process and Laravel development framework. Representational state transfer (API) software architecture was also used alongside the management information system which supports and enhances all forms of user system operations. 700 students were used and descriptive statistics was used to analyze the data. The findings from the study reveal that there is a high level of website design and layout, and high level of user satisfaction, and high level of website utilization by the students.

Puspita and Kusumawati (2019) conducted research on the topic Consumer Acceptance of Digital Bank in Indonesia. Continuous development in technology gives birth to digital banking in many countries of the world. The research aims at examining the acceptance of digital banking in Indonesia. Digital banking is the type of banking which operates on the same principles as the traditional bank but purely online without a single physical branch anywhere in the world. The success of digital banking depends strictly on customers' acceptance to use it. The study also aimed at measuring factors affecting customers' acceptability of digital banks with the name 'Jenius' in Indonesia. 128 respondents were employed as subjects to test the model using survey design with 'Jenius' users. The questions were tested using validity and reliability tests. Regression analysis and correlation were used to analyze the results data collected using the questionnaire. The results show that perceived usefulness and perceived enjoyment were the major factors influencing user acceptance of Jenius bank in Indonesia.

Bakry and Tarig (2020) in their research titled' Developing Technology Acceptance Model for e-service Purposes' observed that universities have tend to give more seriousness to the use of technology for efficiency and such they decided to work in the non-academic staff in order to measure factors influencing their use of e-service. The study aims at developing a technology acceptance model to find out factors motivating non-academic to engage in e-service continuously. The proposed model is based on TAM and it's extension. The model has numerous constructs that contain the opinion of non-academic staff in e-service. A questionnaire was used to implement the model and 308 employees from Prince Sattam bin Abdulaziz University gave their opinions on e-service. The feedback was analyzed using correlation analysis. The findings revealed that technology fit was positively related to user's satisfaction by using e-service at 1% level of significance. Performance expectancy was also related to the user's perceived satisfaction. It is recommended that the University ICT department use the findings to enhance quality of e-service and a study to further ascertain the model accuracy and add variables related to the job environment as the environment as it is related to employee performance.

Khrais and Alghamdi (2021) carried out a study on Investigating Mobile Learning Technology Acceptance in Companies. They observed that the world is witnessing a technological boom, for example the Internet of Things (IoT) which is being adopted and integrated as people's everyday way of life. They assert that mobile learning is one of the modern ways of learning that affect employees in the corporate sector. Facilities like Coursemillr have an important role in enhancing learning such as sharing of information,

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

promoting and cooperation and collaboration and bridging digital divide among others. Adoption of technology is however tagged with numerous limitations such as instability in broadband wireless connection, high cost of implementation and usage and shortcomings in some mobile devices and variation from one device to another. The study employed both UTAUT and TAM to come up with a model for use in the study. Multivariate Factor Analysis was used to identify four major barriers that affect m-learning adoption. They are; Perceived Usefulness (PU), Perceived Ease of Use (PEU), Social Influence (SI) and Facilitating Condition (FI). These factors have a significant positive effect on the adoption, usage and acceptance of m-learning technologies. The study recommends that further studies be carried out on departmental perspective as this particular one was carried out on employee perspective of technology acceptance,

Recently, Maryam, Al-Nuaimi and Mostafa (2021) conducted an extensive systematic review on the Learning management systems and technology acceptance Models. It was observed that technology acceptance has become one of the dominant research trends in the domain of learning management systems (LMSs). While a plethora of several research studies have been conducted in this area, there is still a scarcity of knowledge concerning a holistic review and taxonomy of studies in this field. The review was steered toward understanding the most prevalent theoretical models and the most prominent external factors affecting the LMS adoption in higher educational institutions. Out of 732 collected studies between 2005 and 2020, a total of 68 studies were critically reviewed and analyzed. The main results indicated that the TAM, DeLone and McLean IS success model, UTAUT, TRA, DOI, and UTAUT2 have been dominating the theoretical landscape in LMS research. The results also elucidated that external factors linked to LMS acceptance models fall primarily into three macro-categories, including individual variables, contextual variables, and psychological/behavioral constructs driven from other theories. The study recommended that upcoming researchers should seek to scrutinize the factors affecting LMS acceptance and adoption among workers in various sectors Marija et at. (2019) have also explored the Technology Acceptance Model for the Internet Banking Acceptance in Split city, Croatia. The aim of this research is to determine whether the motivation for using the Internet banking in the city of Split, Croatia, can be explained by perceived ease of use and perceived usefulness as the main elements of the technology acceptance model. A survey analysis was applied in which a sample of 282 working residents of Split was collected. The gender and age structure of the sample was harmonized with the population to make the results more credible. Logistic regression models were used In order to test the research hypothesis. The results confirmed that both elements of the technology acceptance model significantly influence the acceptance of Internet banking in the city of Split. Specifically, it was found that mostly younger respondents with higher level of education, greater experience of using the Internet, higher level of income, and higher level of agreement with statements of Internet banking ease of use and its usefulness, are more likely to adopt Internet banking. Finally, the study concluded that demographic and economic characteristics and perception of individuals affect the acceptance and use of Internet banking in the city of Split. The results also showed that both elements of the technology acceptance model influence the acceptance of Internet banking in the study area. The study suggested that, since internet banking users are mostly younger and higher educated residents, with greater experience of Internet usage and higher income, the

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

banks should consider various marketing campaigns to attract more residents to use their Internet banking service. They can also consider educational programs in order to encourage older residents to adopt Internet banking and offer more favourable conditions for their clients who use this service.

Nyoro, Kamau, Wanyembi and Titus (2015) conducted an extensive Review on Technology Acceptance Model usage in predicting e-commerce adoption. The researchers were able to access and review 25 e-commerce adoption publications for the purpose of this study. The authors found that TAM is the most frequently used model in predicting e-commerce adoption with most studies being carried out in developing countries. They also found TAM to be suitable in providing the most statistically correct outcome in e-commerce adoption. It was concluded that TAM has demonstrated to be a key theoretical model in helping to understand and explain the use, behavior and attitude in e-commerce adoption. Additionally, it has been evaluated in numerous empirical studies that TAM was reasonably verified to be of quality and to yield statistically dependable results used against other research tools. The authors recommend further study of TAM within other adoption areas such as green computing and cloud computing systems, as this will offer comparative studies from diverse fields.

Hoong, Thi and Lin (2017) conducted a study on the role Affect into Technology Acceptance Model by Extending Technology Acceptance Model with Positive and Negative Affect. The study considers the role of a knowledge worker that works in Multimedia Super Corridor (MSC)-status organizations in Malaysia on their behavioural intention to use knowledge sharing tools (KS tools) in their day-to-day tasks. Hence, the Affective Technology Acceptance (A.T.A) model has been proposed. The behavioural intention on the acceptance of KS tools was hypothesized in the Affective Technology Acceptance (A.T.A) model. Positive (PA) and Negative (NA) effects as the role of affect construct were introduced in this model to investigate its influence on KS tools usefulness and ease of use among employees in Multimedia Super Corridor organizations. The population where the sample was drawn in this research consists of knowledge workers who work in MSC-status organizations in Malaysia. The samples were individuals who deal with information, require developing, or using knowledge to solve problems in their jobs. About 2500 MSC-status organizations from the MSC directory were invited to participate in the research. Two thousands and five invitations were sent out to these organizations and 300 forms were received and Two hundred ninety-five forms were usable. The findings of this study highlighted that NA has no impact on perceived usefulness. The findings also showed that PA has a very significant positive influence on PU, PEOU and BI with impact on PEOU being the greatest. The study concluded that if individuals have a strong negative influence on their behavioral intention, they will show less interest in the use of knowledge- sharing tools. Therefore, the negative effect has the strongest influence on perceived ease of use and perceived usefulness of the tools. On the other hand, positive affect shows significant impact on perceived ease of use, perceived usefulness and behavioral intention. Finally, the study recommended that top management should pay attention while formulating their knowledge-sharing tools implementation strategies in their organizations, because the affective aspects of knowledge workers induced by the tools are found to be significant in this research.

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

Majority of the reviewed studies indicated that Technology Acceptance Model (TAM) identified two basic constructs that show technology acceptance as; Perceived Ease of Use and Perceived Usefulness (Devis, 1989 and Schopfel et al. 2019;). User acceptance, trust and confidence in technologies are significant for further usage of any new technology (Taherdoost, 2017). Similarly, there is a significant relationship between affect and anxiety and their controlling functions on perceived ease of use and perceived usefulness (George & Kira, 2006). The study of June, Chung-Sheng, Chang and James (2003) indicated that complexity of technology, triggering conditions, social-cultural considerations, and wireless trust environment are responsible for user-perceived short-term and long-term usefulness and ease of using wireless internet via mobile devices.

However, if the application of Technology Acceptance Model is improved with certain technological advancements to cover quite a lot of features it will suit the needs of the e-government (Nurkholis and Rosalina, 2020).

3. RESULT AND DISCUSSION

Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh etal. (2003) was an attempt to create one single model which integrates the quintessence of eight previous innovation acceptance theories. It was aimed at providing a holistic insight into all factors, which have an influence on the behavioural intention towards the use of a new technology. Venkatesh et.al. (2012) incorporated three other constructs into UTAUT: hedonic motivation, price value, and habit, extending UTAUT into UTAUT 2. Compared to UTAUT, the extensions proposed in UTAUT2 produced a substantial improvement in the variance explained in behavioral intention and technology use.

UTAUT2 is still new and has not been examined enough in an educational context (Sharifi fard et al., 2016; Raman & Don, 2013). Moreover, none of the previous studies that employed UTAUT2 considered the level of knowledge factors related to teachers even though it has been used to evaluate teachers' technology acceptance level. Without any additional construct to differentiate technology acceptance between consumers and teachers, the accurate factors that influence technology acceptance cannot be achieved. Therefore, regardless of having fewstudies using UTAUT2 as their research model in educational contexts, the UTAUT2 model may still be less appropriate and other variables should be counted to include in this model (Raman & Don, 2013).

There is no construct that is specifically intended to address a teacher's knowledge in technology, content and pedagogy as they are the experts in those areas. These components are important in the educational sector especially for teachers, in order to construct students' understanding and optimization on what technology has to offer in education. Based on empirical research, the integration of other factors in technology acceptance models for better understanding of technology acceptance among teachers is crucial.

4. CONCLUSIONS

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

As most of the studies resonate within students, it will be a great challenge to expand the scope of research attempting suggestions for educators to be employed in the UTAUT2 model. It is important to study the demographics of the users or potential users. This may assist the policy makers to identify specific needs of various segments before applying new execution. These three demographics variables; age, gender, and experience are identified as an important moderator that need to be included. Therefore, the UTAUT2 model with additional factors adapted by TPaCK and three moderators can be used to identify the driving factors that affect the adoption of blended learning among teachers.

Hence, this research is trying to strengthen the UTAUT2 model by integrating it with TPaCK model. These might be the critical success factors in the educational context in HEIs. Understanding which factors have the strongest significant influence on the behavioral intentions to use technology and blended learning will help curriculum developers and professional training developers in designing better and useful teaching and training strategies.

5. REFERENCE

1. Ajzen, I.(1991). The theory of planned behavior: Organizational Behavior and Human Decision Process. 50(2), pp.179-211
2. Apandi, A. M., & Raman, A. (2020). Factors Affecting Successful Implementation of Blended Learning at Higher Education. International Journal of Instruction,
3. Technology, and Social Sciences (IJITSS), 1(1), 13-23
4. Bandura, A.(1986) Social Foundations of Thought and Action: A Social Cognitive Theory. Englewood Cliffs, United States of America: Prentice Hall, Inc. 544.
5. Chuttur, M. Y. (2009), "Overview of the Technology Acceptance Model: Origins, Developments and Future Directions", Sprouts: Working Papers on Information Systems, Vol. 9(37), Indiana University, USA.
6. Compeau D., Higgins CA,& Huff S.(199). Social cognitive theory and individual reactions to computing technology: A longitudinal study. MIS Quarterly. 23(2): pp.145-158
7. Devis, F.D., Bagozzi, R.P & Warshaw, R.P (1989). User acceptance of computer technology: A comparison of two theoretical models. Management Science, 35(8), 982-1003.
8. Fishbein, M, & Ajzen I,(1975). Belief, attitude, intention and behavior: An introduction to theory and research, MA: Addison-Wesley,
9. Louissaint J., Anna, S.L., Fortune B.E and Elliot B.T(2020). Acceptance and use of smartphones application in cirrhosis: Liver International 40(7), 1556-1563.
10. Moore, G.C. and I. Benbasat,(2007). "Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation," Information Systems Research, 2(13) pp.192-222.
11. Nagpal, S. & Kumar, D. (2020). Development and standardization of constructivist blended instructional paradigm for teacher preparation. Journal of Critical Reviews, 7 (18), 1651-1659. doi:10.31838/jcr.07.18.210
12. Raman, A., & Don, Y. (2013). Preservice teachers' acceptance of learning management

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)

Journal of Image Processing and Intelligent Remote Sensing
ISSN 2815-0953
Vol: 02, No. 01, Dec 2021-Jan 2022
http://journal.hmjournals.com/index.php/JIPIRS
DOI: https://doi.org/10.55529/jipirs.21.6.17

software: An application of the UTAUT2 model. International Education Studies, 6(7), 157–164. https://doi.org/10.5539/ies.v6n7p157

13. Sharifi fard, S., Tamam, E., Hj Hassan, M. S., Waheed, M., & Zaremohzzabieh, Z. (2016). Factors affecting Malaysian university students' purchase intention in social networking sites. Cogent Business and Management, 3(1), 1–12. https://doi.org/10.1080/23311975.2016.1182612
14. Taylor S., & Todd, P. (1995b). Understanding Infor- mation Technology Usage: a Test of Com- peting Models. Information Systems Research, 6(2), 144-176.
15. Thompson, R.L, Higgins, H.A, and Howell, J.M,(1991) Personal computing: Towarda conceptual model of utilization. MIS Quarterly. 15(1),124-143.
16. Venkatesh, V. & Devis, F.D (2000). A theoretical extension of technology acceptance model: Four longitudinal field studies. Management Science 46(2), 186-204.
17. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. MIS Quarterly, 27(3), 425-478.
18. Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information: extending the unified theory of acceptance and use of technology. MIS Quarterly 36(1), 157-178.
19. Yen-Ting Helena Chiu, Shih-Chieh Fang, Chuan-Chuan Tseng. (2010). Early versus potential adopters: Exploring the antecedents of use intention in the context of retail service innovations. International Journal of Retail & Distribution Management, 38(6), 443-459. Doi: 10.1108/09590551011045357

Copyright The Author(s) 2022.This is an Open Access Article distributed under the CC BY license. (http://creativecommons.org/licenses/by/4.0/)