Determinants of Educational Technology Acceptance: An Integration of TAM and UTAUT

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Abstract: Nowadays technologies have become in many parts of life more than ever before. One of the major challenges in dealing with various technologies is to implement them in a useful way to improve life quality. Since educational technologies can play a big role in developing both the teaching and learning process, this paper investigates the status of educational technology in selected universities in Malaysia to obtain their specific perception of this area of study. A survey using a questionnaire was conducted to get data on the implementation of educational technology in universities. Based on the result using Partial Least Square-Structural Equation Modelling SmartPLS 3 software, the findings demonstrated that effort expectancy, perceived playfulness, and social influence primarily influenced the students' acceptance of educational technology. The level of ease and effort to use the technology will encourage the development of education, enjoyment, and encouragement. On the other hand, performance expectancy and self-management learning was found insignificant.

Keywords: Educational Technology, Technology Acceptance, Use of Technology.

1. Introduction

Effective use of technology in class can create a conducive environment that allows both teachers and students to engage and collaborate (Bower, 2019). Thus, the success of online learning (technology-based education) is influenced by the user's intention as well as the usefulness of that technology (Yakubu & Dasuki, 2019). Furthermore, it was concluded by Tarhini et al. (2016) that the effectiveness of online learning depends greatly on the level of acceptance by the students. This statement is similar to the explanantion by Buasuwan (2018) stated that technology implemented in the teaching and learning process will provide a positive impact not only on lifestyles but also on education.

The rapid growth of technology and high usage of the Internet have made teaching and learning via the Internet or e-learning which refers to educational technology more viable in recent years. Educational technology relates to the activity of facilitating learning using and managing appropriate technological processes and resources. The application of digital as well as information and

communication technology methods in class is considered an effective way to accelerate students' education. Those technology-supported teaching and learning processes are the core concept of Education 4.0. Technology implemented in the teaching and learning process is inspired by Industry 4.0. Thus far, many initiatives have been implemented by higher education institutions to respond to the requirements needed by implementing e-learning, blended learning, Massive Open Online Courses (MOOC), and many more. Whilst several initiatives have been introduced by the Ministry of Higher Education (MOHE), the acceptance of these initiatives for learners in higher education institutions are still in its adaptation process. This statement is supported by Haron and Hafidzan (2021) who claimed that MOOC is still in its growth phase and very limited research has been focused on investigating the acceptance of online learning at universities in Malaysia. Furthermore, the previous research showed that many challenges faced by Malaysia higher institutions in implementing MOOC such as lack of management support, incompetent knowledge in designing online courses as well self-efficacy of learners (Ghazali & Nordin, 2016; Nordin et al., 2016). The most recent study by Alyoussef (2023) indicates that MOOC is a popular online learning programme in higher education institutions but the factors influencing the acceptance of MOOC is insufficient to comprehend learner behaviour. In addition, the recent findings by Othman et al. (2022) and Mohd Ghani et al. (2022) on online learning reported that many challenges in implementing digital e-learning platforms. Therefore, the relevant factors influencing the acceptance of educational technology in higher education need to be examined. The Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) are theories applied in order to model how users come to accept and use technology.

The emergence of technology in the Malaysian education system has grown as shown by the Microsoft Edu Tech Survey and it is believed that the application of technology-based learning has distinct advantages compared to conventional teaching and learning (Gnaneswaran, 2020). At the same, it can be seen that many universities have set up e-learning environments as additional teaching aids to support the traditional teaching method (Khalid et al., 2006). The research on shifting from traditional to digital teaching and learning methods to cater to the rapid changes in technology has also been done by Mohamed et al. (2014). Therefore, the findings on the adoption of educational technology in the education system are in tandem with the aspiration of the Ministry of Higher Education to create a better system that ranks among the world's leading education systems.

Whilst many studies have investigated the changes in the implementation of traditional methods to technology-based education, the acceptance of this initiative for learners in higher education institutions is not known (Alyoussef, 2023). Therefore, the relevant factors influencing the acceptance of educational technology in higher education need to be examined. It is supported by the research done by Teo (2008) that the critical factor in contributing to the success of the learning process is students' perception and readiness to accept the technology. Understanding those determinants can assist educators in designing a better approach to equip students with the knowledge, skills, versatility, and smartness to face challenges which is in line with Industry 4.0. This study supports the Malaysia Blueprint 2015-2025 (Higher Education) under the shift of globalized online learning (shift 9) in preparing educators for 21st-century learning by encouraging them to improve their knowledge of blended and e-learning. Hence, the purpose of this study is to identify the factors affecting the acceptance of educational technology among students using the Technology Acceptance Model and Unified Theory of Acceptance and Use of Technology. The results could be used to assist educators in designing a better approach to equip students with knowledge, skills, versatility, and smartness in facing challenges in line with Industry 4.0 that offers new technologies and methods.

2. Literature Review

The application of digital technology in the classroom is considered an effective way to accelerate students' education. As stated in the research of Khalid et al. (2006), many universities have set up e-learning environments as an additional teaching aid to support the traditional teaching method for long-distance learning or off-campus programmes. It shows that changes in technology continue to alter possibilities for learning and create new challenges for pedagogy. Therefore, education should be a system that continuously evolves to meet the challenges of the fast-challenging and unpredictable

globalized world (Serdyukov, 2017). This evolution must be systematic, consistent, and scalable in order to ensure the teachers and the students can adapt the process of teaching and learning by doing some innovations, especially in educational technology for a better quality environment in class. It is supported by the earlier statement of Wildavsky et al. (2012) that higher education needs more innovations and willingness to change in order to create a better future by taking the considerations of the current situation. Previously, education was associated with the physical presence of students in school, the need for classrooms and teachers as well as the textbooks and examinations (Eddy et al., 2014). Nonetheless, the rapid changes in technology have resulted in new methods of teaching and learning from traditional methods to the concept of digitally delivered learning or e-learning (Mohamed et al., 2014). Due to some challenges faced by e-learning, one of the innovative solutions to overcome those problems in e-learning, the introduction of blended learning as an innovative technology for education has been put in place. According to Allen and Saeman (2006), blended learning has emerged as a major global trend in the educational technology context since they offer benefits to both students and educators. Teachers have new opportunities for new modes of delivery for teaching materials including mobile learning and virtual classroom while students benefit from different learning channels and media formats. In addition, technology-enhanced education is more effective as proven by Sosin et al. (2004) who added that educational technology has a significant positive impact on students learning.

2.1 Technology Acceptance Model

Technology Acceptance Model (TAM) is a framework used to describe why an individual decides to adopt or not to adopt a specific technology in performing his job (Wallace & Sheetz, 2014). It was developed by Davis (1989) based on two variables that influence the adoption of technology, Perceived Usefulness (PU) and Perceived Ease of Use (PEU). PU refers to how people think that the technology is useful for everyday life while PEU relates to how much training is needed to complete the knowledge of the technology used. TAM is based largely on the Theory of Reasoned Action (TRA) and is specifically focused on examining users' willingness to accept and use new technology. Several studies have adopted TAM in predicting the acceptance of e-learning (Liu et al., 2009; Ngai et al., 2007). It has also been applied by Ramayah et al. (2002) on the technology acceptance of users and non-users of Internet banking. TAM is considered the most widely used for the prediction and explanation of user's behaviour toward acceptance and adoption of educational technology (Abdullah & Ward, 2016; Granic & Marangunic, 2019). The most recent empirical evidence on the validity of the framework in educational technology acceptance has been conducted by Ismail et al. (2023) on video conferencing technologies as online learning platforms. This study confirms that the model constructed was meaningful in demonstrating the students's acceptance of using technology for their learning process, however, a few factors should be taken into consideration to include the motivational and economic factors. Hence, this paper explores social influence as one of the motivational factors to influence the acceptance of educational technology.

2.2 Unified Theory of Acceptance and Use of Technology

The recent model in information technology acceptance is the Unified Theory of Acceptance and Use of Technology (UTAUT). This theory was proposed by Venkatesh et al. (2003) and attempts to integrate and empirically compare elements from different technology acceptance models in technology acceptance. The theoretical model states that the actual use of technology is determined by behavioural intention. Therefore, UTAUT was adopted in this study to examine the factors that influence the users' behavioural intentions to accept educational technology in the classroom. The theory has been extensively used to explain technology acceptance. This theory holds four key constructs which consist of performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). However, Wang et al. (2009) have extended the original theory by taking into consideration of performance expectancy, export expectancy, social influence with additional attribute perceived playfulness and self-management of learning. The results from the study showed that all factors were significant determinants in influencing students' acceptance of mobile learning. Thus, aiming to increase the predictive validity, TAM and UTAUT were employed to explore

the acceptance of educational technology among students in selected public and public universities in Malaysia. The UTAUT model is related to behavioral intention, while TAM represents predictors of the two core variables, perceived ease of use and perceived usefulness, with a small number predicting behavioral intention.

2.3 Motivation of Variables

Performance expectancy (PE) refers to students' belief that using educational technology in the classroom is adaptable and helpful. A considerable amount of literature has been published on performance expectancy on behavioral intention on using technology (Venkatesh et al., 2003; Tarhini et al., 2017). These studies revealed the positive effect of performance expectancy on the acceptance and use of e-learning. It is encouraging to compare the above results with that reported by Almaiah et al. (2021) who found that perceived usefulness significantly influenced behavioural intention to use mobile learning platforms as a new tool for students in Jordan universities. In addition, Suki and Suki (2011) mentioned that performance expectancy had a significant and positive relationship with behavioural intention. These findings indicate useful suggestions for the Ministry of Higher Education and decision-makers in intensifying the educational technology in the classroom to prepare students for future digital demands in tandem with industrial 4.0, largely governed by using internet technologies.

Effort expectancy (EE) refers to the degree of easiness and effort in using the technology in the classroom as defined by Venkatesh et al. (2003). This definition is similar to those mentioned by Casey and Elisabeth (2012) that effort expectancy was measured based on a consumer's personal evaluation of the ease of engaging with an information system. Meanwhile, the constructs used by Abdallah et al. (2021) to measure the effort expectancy were ease of use and complexity. In addition, Sarrab et al. (2016) as well as Ozdamli and Uzunboylu (2015) found that the technology used in the learning activity must be a simple and time-saving idea because students would prefer to complete a task in a shorter amount of time. Formulated on the UTAUT, students are expected to accept educational technology on the condition that it can be used easily by them. This is similar to those reported by Almaiah et al. (2021) that perceived ease of use significantly affected the students' acceptance of mobile learning.

The term social influence (SI) refers to others' belief that he or she should use a new technology system (Venkatesh et al., 2003). Social factors are influenced by someone else's attitudes and social pressure toward accepting educational technology. These factors will affect users' decision to use a certain technology. Taiwo and Downe (2013) stated that students were willing to accept and adopt new technology if they were supported by other people such as lecturers, classmates, and friends. A number of studies have shown that social factors were significant in influencing students' acceptance of educational technology (Mtebe & Raisamo, 2014; Abdallah et al., 2021). Therefore, it is hypothesized that social influence has a positive effect on educational technology acceptance.

In the literature, perceived playfulness (PP) is defined as the degree of enjoyment, joyfulness, and pleasure in using technological devices to acquire new knowledge (Wang et al., 2009). According to a definition provided by Venkatesh and Bala (2008), perceived playfulness represents the intrinsic motivation associated with using any new system. This definition is close to those of Moon and Kim (2001) that defines perceived playfulness or enjoyment as based on users' subjective evaluation of their interaction with technology. Based on their research, perceived playfulness had a significant positive relationship with attitudes toward users' acceptance of websites. Hence, this study contributed to existing research by validating the extended TAM and confirming the importance of perceived playfulness for information-searching purposes. In addition, there are several other studies that consider the role of playfulness in the intention to use a new system (Chung & Tan, 2004; Venkatesh, 2000). This finding is corroborated by a study conducted by Antonio et al. (2013) which found that playfulness had a direct impact on female students toward technology acceptance in the context of a blended learning setting.

The self-management of learning (SM) is an important factor in promoting successful learning because it relates to the individual's ability to manage their own performance. It has conclusively been shown that a student who is responsible and has the ability to manage her own time management would prefer to accept the new technology (Huan et al., 2015). There is a large volume of published studies describing the importance of self-management learning in accepting educational technology especially,

using innovative technological instruments such as mobile learning (Abdallah et al., 2021). In the same way, Abar and Loken (2010) hold the view that self-management learning demonstrates a critical role in facilitating more positive learning performances. Thus, self-management learning is regarded as one of the variables that can be investigated to influence the students' intention to adopt educational technology in the classroom. This finding is consistent with Rashid and Asghar (2016) who mentioned that self-management learning contributed to positive academic performance.

Meanwhile, behavioural intention (BI) has typically been defined as an individual's subjective probability that they will perform a specific behaviour (Venkatesh et al, 2003: Abu Al Aish & Love, 2013). The expectation of users' intention to perform plans and decisions regarding the use of technology (acceptance of technology). Therefore, the following hypotheses are developed based on the above independent variables (PE, EE, SI, PP, SM) toward the behavioural intention (dependent variable) to use or accept new technology.

Hypothesis 1: Performance expectancy positively affects educational technology acceptance.
Hypothesis 2: Effort expectancy positively affects educational technology acceptance.
Hypothesis 3: Social influence positively affects educational technology acceptance.
Hypothesis 4: Perceived playfulness has a positive effect on educational technology acceptance.
Hypothesis 5: Self-management learning has a positive effect on educational technology acceptance

In this study, TAM and UTAUT were employed to explore the acceptance of educational technology among students in selected public and private universities in Malaysia. Both theories aim at understanding why users accept or reject a given technology. Based on Fig. 1, there are five factors that will influence the acceptance of educational technology which are performance expectancy, effort expectancy, social influence, perceived playfulness as well as self-management of learning.

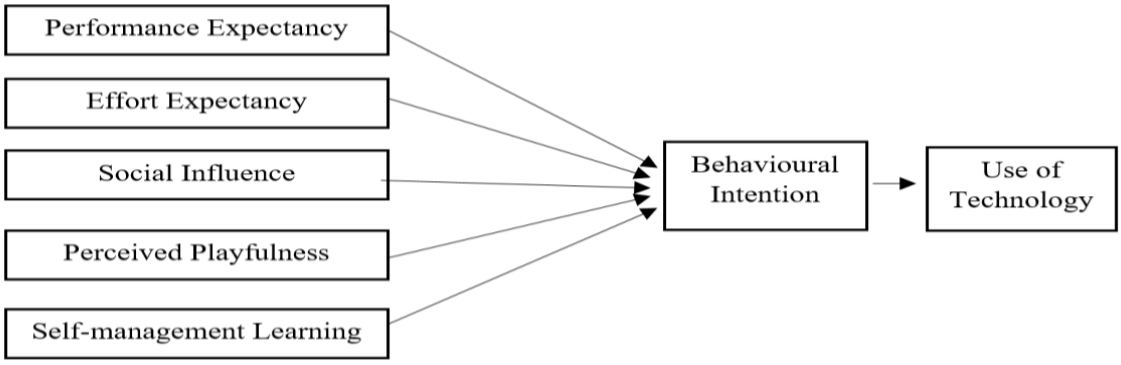

Fig. 1 Research Framework

3. Data Collection and Instrument Development

This study aims to identify the factors influencing the acceptance of educational technology. The online structured survey questionnaire was used in collecting the data from the students. A total of 400 questionnaires were distributed among the selected students from public and private universities in Malaysia. As a result, 237 questionnaires were returned with a response rate of 59.25 percent. The questionnaire consists of seven sections. Section A gathers information about demographic data. Section B to G attempts to obtain respondents' views on their feelings toward educational technology as well as soliciting their acceptance of technology. The five-point Likert Scale is used to get responses to the questionnaire. For that reason, the study applied PLS-SEM by using SmartPLS 3 software to analyze the data.

The items for the questionnaire were adapted and adopted from the previous literature. As a result, there are six constructs established as a framework for this study and were operationally defined in Table 1. The questionnaire consisted of six questions, namely, Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Perceived Playfulness (PP), Self-management Learning (SM),

Behavioural Intention Motivation (BI) as well as demographic information in Section A. The scale measurement was based on a five-point Likert scale ranging from 1 (strongly disagree – SD) to 5 (strongly agree – SA). The items in the measurement instrument were as follows: PE (four items), EE (five items), SI (five items), PP (four items), SM (four items), BI (five items).

Table 1. Operational Definition

Variable	Description	References
Performance Expectancy *Perceived Usefulness -TAM	The degree to which an individual believes that using the system will help him or her to attain gains in performance	Venkatesh et al. (2003)
Effort Expectancy *Perceived ease of use - TAM	The degree of ease associated with the use of the system or the level of easiness and effort required to use the technology	Venkatesh et al. (2003)
Social Influence *Subjective Norm - TAM/TPB	The degree to which an individual perceives that is important, others believe he or she should use the new system Social factors show how people, who are relevant to end-users influence them toward accepting technology applications	Venkatesh et al. (2003) Abu Al-Aish & Love (2013)
Perceived Playfulness	Users' subjective evaluation of their interaction with technology Perceived playfulness represents the intrinsic motivation associated with using any new system	Wang et al (2009) Moon & Kim (2001) Venkatesh & Bala (2008)
Self-management Learning	Self-management learning normally refers to an individual's capacity to self-direct their own learning or is called self-disciplined in the autonomous learning environment	Wang et al. (2009) Abdallah et al. (2021))
Behavioural Intention	Behavioral intention has typically been defined as an individual's subjective probability that they will perform a specified behavior The expectation of users' intention to perform plans and decisions regarding the use of technology	Venkatesh et al. (2003) Abu Al Aish & Love (2013)

4. Results

This research was conducted to obtain a more comprehensive understanding of educational technology acceptance among students. The demographic profile of the respondents is presented in Table 2. As demonstrated in Table 2, most of the respondents were female which was at 76.8 percent whereas 23.2 percent of them were male. As for the educational background, all the respondents were from bachelor's degree level and most of them were from public universities. The majority of the respondents were from the 22-25 years age group (45 percent), 18-21 years age group (43 percent), and 26-29 years age group (12 percent). In terms of online learning location, the students from the urban areas had the most contributors overall. It accounted for 73 percent of the total, while the rest were from rural areas. This factor was in line with the result of the highest number of students with good internet connection which accounted for 51 percent, whereas the average internet connection strength was at 26 percent followed by very good and poor connection at 22 percent and 1 percent respectively. A possible explanation for this might be explained by the associations of internet access with the location. In

conclusion, the data are immensely useful for the researcher to gain insight into respondents' characteristics which may provide a basis for the investigation.

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Table 2. Demographic Profile

Variable	Item	Frequency	Percentage
Gender	Female	182	76.8
	Male	55	23.2
Age	18-21	102	43
	22-25	107	45
	26-29	28	12
Education Level	Bachelor's Degree	237	100
Type of University	Public	186	78.48
	Private	51	21.52
Internet Connection	Very Good	52	22
	Good	120	51
	Average	62	26
	Poor	3	1
Online Location	Home in city/town areas	173	73
	Home in rural areas	57	24
	University Hostel	7	3

4.1 Measurement Model

According to Gefen and Starub (2005), as part of the measurement model evaluation, the items with low factor loadings with a value of less than 0.6 should be removed from the analysis. Based on the analysis, all the items for this study should be maintained since the value is more than 0.6. The study used Cronbach's alpha and composite reliability (CR) to test the constructs' reliability. All the CR were higher than the recommended value of 0.7 as stated by Wasco and Faraj (2005). The other important measurement of reliability showed that Cronbach's alpha of each construct exceeded the 0.7 threshold. Convergent validity was acceptable because the Average Variance Extracted (AVR) was over 0.5. The results for reliability and validity along with the factors loadings for the items are presented in Table 3.

Discriminant validity was assessed by the Fornell-Larcker's criterion (Fornell & Larcker, 1981), the table shows that the square-root of AVE for the construct was greater than the inter-construct correlation (see Table 4). Discriminant validity was also evaluated by the Heterotrait-Monotrait ratio of correlations (Henseler et al., 2015), with values below the threshold of 0.9. as indicated in Table 5.

Table 3. Loadings, Reliability and Validity

Variable	**Construct**	**Loadings**	**Cronbach's alpha**	**CR**	**AVE**
BI	BI1	0.911	0.941	0.955	0.810
	BI2	0.867			
	BI3	0.916			
	BI4	0.893			
	BI5	0.911			
PE	PE1	0.861	0.905	0.933	0.778
	PE2	0.899			
	PE3	0.877			
	PE4	0.891			
EE	EE1	0.865	0.902	0.927	0.718
	EE2	0.882			
	EE3	0.820			
	EE4	0.848			
	EE5	0.819			

Variable	Construct	Loadings	Cronbach's alpha	CR	AVE
SI	SI1	0.860	0.896	0.924	0.708
	SI2	0.885			
	SI3	0.828			
	SI4	0.838			
	SI5	0.792			
PP	PP1	0.861	0.944	0.959	0.856
	PP2	0.899			
	PP3	0.877			
	PP4	0.891			
SM	SM1	0.785	0.845	0.896	0.683
	SM2	0.857			
	SM3	0.849			
	SM4	0.813			

Table 4. Fornell Larcker's Criterion

	BI	PE	EE	SI	PP	SM
BI	*0.900*					
PE	0.682	*0.882*				
EE	0.781	0.737				
SI	0.811	0.611	*0.864*			
PP	0.807	0.668	0.755	*0.801*		
SM	0.694	0.637	0.806	0.768	*0.727*	

Note: Value in Italic represents the square-root of AVE

Table 5. Heterotrait-Monotrait Ratio (HTMT)

	BI	PE	EE	SI	PP	SM
BI						
PE	0.737					
EE	0.847	0.817				
SI	0.881	0.677	0.864			
PP	0.854	0.723	0.755	0.801		
SM	0.777	0.728	0.806	0.768	0.727	

4.2 Structural Model

The structural model presents the path coefficients among constructs as illustrated in Fig. 2. Meanwhile, Table 6 displays the results of path coefficients in evaluating the hypotheses constructed in the literature. The test on the significance of the path was conducted using SmartPLS's bootstrap re-sampling techniques. It is interesting to note that only Effort Expectancy (EE), Social Influence (SI), and Perceived Playfulness (PP) indicated a significant relationship to Behavioural Intention (BI). A positive correlation is found between BI and EE (0.191), BI and SI (0.308) as well as BI and PP (0.347) at the significance level of 0.05 and 0.01. Therefore, these results support H_2, H_3, and H_4. It shows that the students are motivated to accept the educational technology by the level of easiness to use, the influence from people around them as well as the intrinsic motivation associated with using new technology. Doubtlessly, these factors make the students display greater trust in their judgment to accept new educational technology to ease the learning process. Meanwhile, Performance Expectancy (PE) and Self-Management Learning (SM) are being reported as insignificant. Hence, the hypotheses of H_1 and H5 are not supported by this study.

Table 6. Path Coefficient

Dependent variable	Independent Variable	Path	Observed *t*-statistics	*p*-value
Behavioural Intention (BI) (R squared 0.784)	PE	0.066	1.167	0.244
	EE	0.191	2.577	0.010**
	SI	0.308	4.002	0.000***
	PP	0.347	4.650	0.000***
	SM	0.085	1.699	0.090

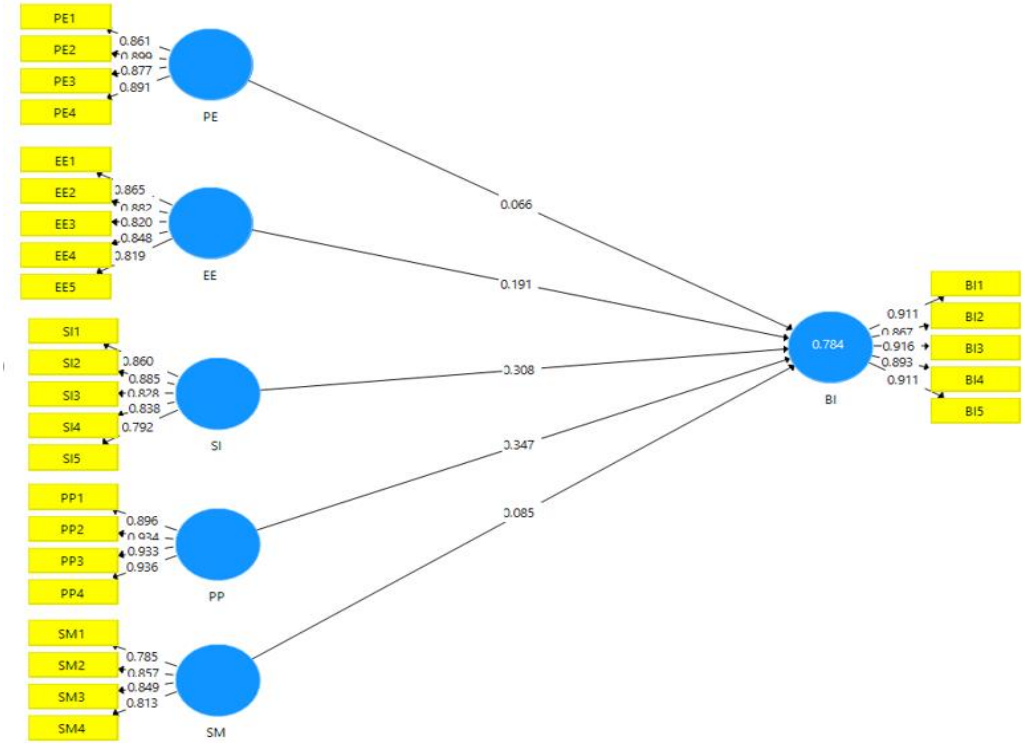

Fig. 2 Structural Model

5. Discussions and Conclusions

There are mixed findings on the relationship between educational technology and an effective learning environment. Based on the results, effort expectancy (EE), perceived playfulness (PP), and social influence (SI) primarily influence the student's acceptance of educational technology. The easiness of educational technology (effort expectancy) will encourage the development of education. This result is similar to those reported by Sarrab et al. (2016), Abu Al Aish and Love (20130 as well as Ozdamli and Uzunboylu (2015) who found out that the technology used in the learning activity must be simple and time-saving. It might be explained by the idea that the students would prefer to complete a task in a shorter amount of time. Another finding by Almiah et al. (2021) corroborates the result reported earlier indicating that perceived ease of use significantly affected the students' acceptance.

Meanwhile, the positive result of perceived playfulness contributes to the existing research by Moon and Kim (2001) in confirming the importance of perceived playfulness in the context of educational technology acceptance by students. The significance of perceived playfulness indicates that intrinsic motivation plays an important role in this setting as mentioned by Wang et al. (2009), Venkatesh and Bala (2008). It is important for the students to prevent the students from becoming overburdened and to demonstrate their capabilities while studying independently.

The positive result of social influence supports the research conducted by Abdallah et al. (2021). Similarly, Wang et al. (2009) who have extended the UTAUT with two additional constructs

indicated that effort expectancy, social influence, and perceived playfulness were all significant determinants of the behavioral intention of mobile learning acceptance. In addition, Abu-Al-Aish and Love (2013) showed the results that effort expectancy and the influence of lecturers (SI) were all significant factors that affect behavioural intention to use mobile learning in the classroom. The study has provided evidence of the robustness of Moon and Kim (2001) extended TAM which is UTAUT and indicated the generalisability of the model for technology acceptance for teaching and learning.

In order to implement the specific educational technology tools in class, educators and institutions should know the factors that undeniably influence the intention or acceptance of students to adapt to the technology introduced. This vital factor is useful for educators in ensuring that engagement in class is at the highest level possible. At this level, a student sees that the activity is personally meaningful. The educators should encourage communication by providing online discussion forums that can extend the learning activity beyond the classroom. In addition, gamification-based learning should be one of the approaches adopted by educators to encourage students' participation and proactiveness.

6. Limitation and Future Research Directions

Every research that has been carefully designed and conducted has its limitations thus opening new scope for future investigation. The common limitations that most of the studies declared are time constraints as well as the lack of participation from respondents in answering the questionnaires. In line with the presented limitations, future research perspectives should cover a broader sample of respondents, other constructs that can be tested for their settings as well as additional variables that will improve the acceptance and predictability of technology in education. System quality and system accessibility, along with facilitating conditions such as time and money needed as well as technology factors regarding compatibility issues that may constrain usage, are found to be essential factors that affect technology acceptance as well. Therefore, these factors can be used to identify the determinants of educational technology acceptance in future research. Lastly, the psychological influence factors can be examined to empirically validate predictive factors that normally influence the adoption and acceptance of technology in education since one's personality can limit or enhance the ways one learns and thinks.

7. Co-author Contribution

There is no conflict of interest in this article. Author 1 read and prepared the literature review, constructed the framework and related theories as well as analysed the data, and wrote the findings of the study. Author 2 wrote the discussion and conclusion. Author 3 carried out the fieldwork, methodology, and data entry. Author 4 did the statistical analysis and author 5 wrote the future directions and references.

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