

An Empirical Study on E-book Usage Intention – Perspective of International Students Studying in Thailand

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ABSTRACT

This paper aims to understand the intention of using e-book among the international students studying in Thailand. The paper adopts Technology Acceptance Model to comprehend the association between perceived ease of use, perceived usefulness, attitudes, and intention to use e-book for their studies. The study further considers trust as a moderating effect on the attitude of adopting e-book. The data was collected from international students studying in a private university in Thailand. A structural equation model (SEM) was done to understand the association between the constructs. The SEM results reveal that all the relationships are positively associated except that trust's moderating effect is negatively associated with perceived ease of use and attitudes. The results are helpful for the policymakers and administrators in the university in adopting e-book platforms for their students.

Keywords: *E-book, International Students, Perceived ease of use, Perceived Usefulness, Attitudes, Intention to use*

1 INTRODUCTION

New technologies and increasing competition with the growing demands of customers provide a new platform for electronic books (e-book) since its inception in 1970 (Mustafa et al, 2014). The e-book is well-defined as the electronic form of the conventional book that users can access and read via electronic devices like PCs, iPad, Kindle, or other portable gadgets (Shin, 2011; Lam et al., 2009). Though the demand for an e-book is growing in many countries, the acceptance by the target users has not reached a respectable level (Letchumanan & Tarmizi, 2011; Anuradha & Usha, 2006; Levine-Clark, 2006). Besides that, Falk (2003) reveals that educational institutions must embrace e-books for the e-learning platform. For quality learning, academicians

and learners must adopt innovative ways and take advantage of the e-book platform to access a wide range of information. Moreover, Armstrong et al. (2006) state that the e-book platform is considered a valuable resource material for learning and teaching.

The popularity of digital devices has increased tremendously and simultaneously changed the user's insight. Nevertheless, despite the benefit of the e-book as environmentally friendly, the demand for printed books is still higher among the consumers. Numerous scholars argue that, due to poor on-screen quality and scanned copies of printed books, the demand for e-book has not increased among the consumers yet (Levine-Clark, 2006). The companies need to design attractive devices so that the purpose of transforming learning among the learners is increased (McFall,

2005). Therefore, the study uses Technology Acceptance Model (TAM) to understand the student's acceptance of the e-book during their study in the university. The study also considers trust as a moderating variable to understand better the student's mindset of using an e-book.

2 LITERATURE REVIEW

2.1 Technology Acceptance Model

Davis (1989) formulates the Technology Acceptance Model (TAM) theory originated from the Theory of Reasoned Action (TRA). The theory explains the users' behavior and intention regarding the use of technology in their daily life. TAM is one of the most powerful models to explain end-users' adoption regarding technology for various purposes. Numerous scholars argue that TAM assists in understanding the user's attitude about embracing the technology determined by perceiving the ease of use and the product or service's perceived usefulness (Monsuwe et al. 2004; Venkatesh & Bala 2008).

2.1.1 Perceived ease of use (PEOU)

According to Davis (1989), perceived ease of use (PEOU) is defined as "the degree to which a person considers that using the system or device is free from effort". Perceived ease of use helps users to assume that they need less effort to use the technology. Moreover, Nelson and Webb (2007) stipulate that PEOU has a strong association among student's attitudes and intention to use e-book. Hence, PEOU supports in creating an encouraging attitude for e-book usage among the students.

2.1.2 Perceived Usefulness (PU)

Davis (1989) describes perceived usefulness (PU) as "the degree to which a person considers that using a device or system would increase their performance". Many studies reveal a significant association between PU and the behavioral intention of e-book users (Letchumanan & Tarmizi,

2011; Ngafeeson & Sun, 2015; Hyman, Moser & Segala, 2014). In another study, Tao (2008) exclaims that PU is a significant factor in determining student's attitudes to use e-resources. According to Nelson and Webb (2007), PU is an eminent predictor for student's future usages of the e-book. From the above discussion, the following hypothesis is proposed:

H1: Perceived ease of use will positively affect perceived usefulness towards e-book usage among university students.

2.1.3 Attitudes towards using e-book

According to Grandon and Mykytyn (2004), attitude is "the degree to which a person acts positively or negatively towards a request". Fishbien and Ajzen (1975) outline attitude as the explanation of certain things by individuals. To recognize students' attitudes, their mindset regarding e-book usages is mandatory to understand. However, studies stipulate that perceived ease of use and perceived usefulness are essential factors to influence users' attitudes to embrace e-book (Legris et al., 2003). From the above discussion, the following hypotheses are proposed:

H2: Perceived ease of use will positively influence student's attitudes towards using an e-book.

H3: Perceived usefulness will positively influence student's attitudes towards using an e-book.

2.1.4 Behavioral Intention to use e-books

Behavioral intention is related to the users' momentary response to use a particular product or service. When users' intention to use e-books is positive, they will surf the internet for more information and at the same time compare before deciding to purchase. Numerous studies provide empirical support of PEOU and PU's influence on increased intention to adopt or actual use among the users for e-learning materials (Chiu & Wang, 2008; Lee, 2006; Roca & Gagneb, 2008). From the above

discussion, the following hypothesis is proposed.

H4: Attitudes towards using e-books will positively influence student's intention to use.

2.2 Trust in e-books

In the world that is full of uncertainty, trust plays an essential role in creating the users' attitude to adopt certain technology. As mentioned by North (1990), individuals measure trust by the benefit level of the activities. Palmer et al. (2000) identify trust as an important predictor for online activity. Individuals trust the platform when they view it as reliable and honest, and their attitudes and intention to use it grow. Therefore, when students increase trust in the platform, their attitudes towards using e-books are positive. From the above discussion, the following hypothesis is proposed:

H5(a): Trust is moderated by perceived ease of use and intention towards the student's e-book usage.

H5(b): Trust is moderated by perceived usefulness and intention towards the student's e-book usage.

3 RESEARCH METHODS

3.1 Data Collection and sampling

Survey data were collected from a private university in Thailand. Students who participated in the survey were from bachelor's and master's degree programs. A Google Form was created to distribute the survey among the students. The survey questionnaire link was shared through Facebook, email, and Line Apps. Students who are studying English programs and used e-book for their studies were considered eligible for the survey. The Snowball sampling technique was used to get maximum participation. A total number of 189 students participated in the survey from November 2019 to March 2020.

3.2 Measurement scale

A 3-item scale was adopted to measure PEOU, and a 4-item scale was considered for measuring PU, which was adopted by Fortes and Rita (2016). The attitude was measured with a 4-item scale adopted by Alyami and Spiteri (2015) and a 3-item scale was considered for measuring behavioral intention adopted by Dodds et al. (1991). The moderating variable trust was measured with a 3-item scale which Han et al. (2018) used in their studies.

4 RESULTS AND DISCUSSIONS

4.1 Demographic Information

The respondents (n=189) who joined the survey were students from Bangladesh, China, French, Germany, India, Myanmar, and Nepal. Respondents were 132 (69.80%) females and 57 (30.20%) males. The mean of the students' age group is 22.25, with a standard deviation (SD or s) of 2.224. The majority of students, 147 (77.80%), were from bachelor's programs, followed by 21 (11.10%) from both below bachelor's and master's programs. From the responses, 150 (79.40%) students mentioned shifting from printed book to e-book, whereas 39 (20.60%) students did not have any preference to shift. Of the respondents, 39 (20.60%) used e-book readers, whereas the rest 150 (79.40%) stated that they use other devices to read e-books.

4.2.1 Reliability and Validity

The variable's reliability was tested using Cronbach's alpha and Composite Reliability. Initially, the factor loadings of each item are checked whether the loading is smaller than 0.7 or not. The results of reliability and validity are presented in Table 1. The data reveal that all the alpha values and composite reliability are above 0.700. The majority of the alpha values and composite reliability are greater than 0.90, which means that the constructs have excellent reliability in the model.

Furthermore, the Average Variance Extracted (AVE) was checked and show that all AVE is higher than 0.500, supporting the convergent validity. Discriminant validity is measured through the Fornell-Larcker Criterion and cross-loading of the variable. The data reveal that discriminant validity is well-established. Table 2 represents the complete data.

Table 1 Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ATT	0.788	0.797	0.862	0.609
INT	0.958	0.967	0.973	0.922
PEOU	0.988	0.988	0.991	0.966
PU	0.947	0.947	0.966	0.903

Table 2 Fornell-Larcker Criterion

	ATT	INT	PEOU	PU
Attitude	0.780			
Intention	0.561	0.960		
PEOU	0.399	0.402	0.983	
PU	0.530	0.353	0.496	0.950

4.2.2 Structural equation model

The structural equation model for each variable is collected after computing PEOU and PU with attitudes towards e-book followed by intention towards e-book among the students in the university. From the analysis, it is revealed that attitudes towards e-book have the strongest effect on intention towards e-book ($\beta = 0.561, p\text{-value} < .000$), followed by PEOU ($\beta = 0.496, p\text{-value} < .000$) and PU ($\beta = 0.440, p\text{-value} < .000$ and $\beta = 0.399, p\text{-value} < .000$) respectively towards attitudes of using e-books. The model shows that PEOU explains 24.6% ($R^2 = 0.246$) towards PU and both PU and PEOU explain 30.5% ($R^2 = 0.305$). The analysis further shows that attitudes towards e-books explain 31.5% ($R^2 = 0.315$) in the structural equation model. After computing the bootstrapping confidence intervals, the beta relation

between PEOU and attitudes decreased, but overall, the model reveals that H1, H2, H3, and H4 are supported significantly, which means the null hypotheses are rejected. Table 3 exhibits the details of mean, standard deviation, t-values, and p-values for hypothesis testing.

Table 3: Path coefficient

	Original Sample (O)	Sample Mean (M)	Std Dev (STDEV)	T Stat ((O/STDEV))	P Values
ATT > INT	0.561	0.562	0.047	11.844	0.000
PEOU > ATT	0.178	0.178	0.081	2.190	0.029
PEOU > PU	0.496	0.494	0.054	9.225	0.000
PU > ATT	0.440	0.439	0.079	5.582	0.000

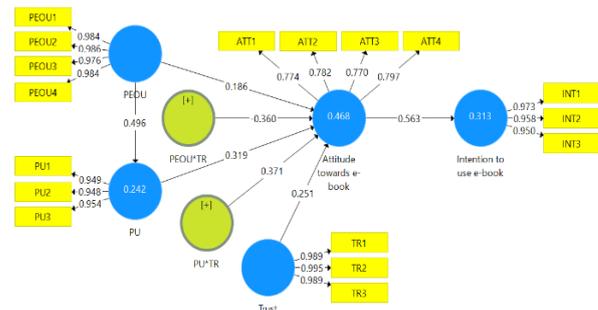


Figure 1 Moderation effect on the structural equation model

Next, the moderating effect of trust is computed with the model. Trust is moderated between PEOU and attitude, and PU and attitudes towards e-books use among the international students during their study in university. After doing the SEM, the data reveal that the path coefficient of attitudes towards intention to use e-book increases slightly ($0.563, p\text{-value} < .000$) with the strongest path, and the adjusted R^2 is 0.313. On contrary, PEOU and PU both decrease ($\beta = 0.186, p\text{-value} < 0.007$ and $\beta = 0.319, p\text{-value} < .000$) towards attitudes to use e-book. However, the adjusted R^2 also increases significantly to 0.468. With the moderation effect, it is noticed that PEOU and Trust has a negative value ($\beta = -0.360, p\text{-value} < 0.000$) but PU and Trust

have a positive impact ($\beta = 0.371, p\text{-value} < .000$) towards attitudes to use e-book. The details are shown in Table 4. The results after bootstrapping, all the p-values are statistically significant. The multicollinearity is checked and noticed that all the values are within the range.

Table 4 Path coefficient of Moderation Effect

	Original Sample (O)	Sample Mean (M)	Std Dev (STDEV)	T Stat	P Values
ATT -> INT	0.562	0.560	0.050	11.25	0.000
PEOU - > ATT	0.183	0.178	0.067	2.72	0.007
PEOU - > PU	0.496	0.491	0.053	9.31	0.000
PEOU* TR -> ATT	-0.363	-0.357	0.061	5.90	0.000
PU -> ATT	0.318	0.315	0.085	3.73	0.000
PU*TR - > ATT	0.376	0.369	0.061	6.18	0.000
TR -> ATT	0.255	0.256	0.067	3.80	0.000

4.3 Discussion

The empirical analysis is conducted to comprehend the intention of using e-books by international students during their study in the university in the context of the TAM model. The study also considers trust as a moderating variable to understand whether trust plays any role in increasing the effect on student's attitudes or not. From the analysis, PEOU is found positively and statistically significant with PU for using e-books by the students, which is consistent with previous studies (Jin, 2014; Kim, 2012; Lee 2013, Chang & Tung, 2008; Davis 1989). This suggests that e-books that are easy to use are considered helpful by international students. When consumers have a positive feeling towards e-book usage, their intention to adopt increases gradually. Therefore, PEOU is an essential

determinant to increase PU for learning and effective use.

PEOU and PU are statistically significant toward this study's attitudes, which is also consistent with previous studies (Delafrooz et al., 2011; Chang et al., 2012; Stoel & Lee, 2003). Consumers' attitudes generally increase when they find the products are easy to use and helpful in solving their problems. Numerous scholars agree that PEOU and PU are both efficacious influencers and crucial factors for the consumers to adopt ICT-based products (Venkatesh & Davis, 2000, Liao & Tsou, 2009). In this study, PU has a higher impact than PEOU over attitudes towards e-books usage by international students.

Further, attitudes and intention towards e-books are also statistically significant, consistent with previous studies (Tsai, 2012; Masrom, 2007; Teo et al., 2009; Chang et al., 2012; Stoel & Lee, 2003). The study also notices that most students prefer e-books over printed books, and they have a higher intention to shift from printed books to e-books. Universities are obliged to implement an e-book platform in their library system and ensure that students have access to e-books conveniently for their studies.

The study also considers trust as moderating factor to understand the relationship between PEOU, PU, and increased attitudes. The results for both moderations are statistically significant; however, PEOU and trust are negatively associated. It signifies that when students find e-books useful, they trust the platform for their studies which later creates the positive intention to use e-books. On the other hand, when students feel the e-books are easy to use, they lack trust in the platform, which ultimately creates negative attitudes and intentions to use e-books for their studies. The possible reason is that when things are easy to use, sometimes the trust is compromised, and concerns about the platform's authenticity arise.

5 CONCLUSION

With broader coverage of internet access, worldwide web usage increases, and remarkable contribution towards the digital and sustainable world also increases with modern technologies. This study aims to identify the factors for accepting e-books by international students for their studies in Thailand.

5.1 Conclusions

1. Attitudes towards the usage of e-books grow higher when PU is moderated by trust.
2. On the contrary, PEOU and trust have a negative impact on attitudes and intentions to use e-books among international students.
3. PU is an important predictor for e-book usage among international students studying in Thailand.
4. PEOU has a greater impact on PU on the students.

As an overall result from this research, it can be concluded that international students have a higher intention to use e-books during their university time. This is actually can be considered as proof that Thai universities are achieving SDG goals as well.

5.2. Recommendations

Future publishers and library facilities in the universities are needed to organize some seminars, workshops for the students and faculties, introduce the benefits of using e-books for teaching and learning, and how modern technology can boost digital platforms as a catalyzer for accessing e-books. They need to work collaboratively to promote e-book usage and help to promote a green campus. The study needs to include some exogenous factors like perceived self-efficacy, convenience, subjective norms, and anxiety to have an in-depth understanding regarding e-book usage for studies.

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