

Received: May 2023 Accepted: June 2023 DOI:
<https://doi.org/10.58262/ks.v11i02.141>

Factors Influencing the Adoption of e-Books in Thailand

Thipsuda Sinchawarnwat¹, Sumaman Pankham*²

Abstract

The objective of this study was to find the factors influencing readers to adopt the use of e-books in Thailand. A conceptual model was developed based on perceived value, intrinsic motivation, extrinsic motivation, and technology acceptance model (TAM). This research used a mixed methods approach to create a structural equation model (SEM). The survey data were collected from 707 e-book readers in Thailand who participated voluntarily. The statistics used in the data analysis consisted of frequencies, percentages, and a structural equation model, which analysed the causal relationships of 10 constructs: perceived ease of use, functional value, social value, price value, habits, environmental concerns, individual innovation, attitudes, and behavioral intention to adopt the use of e-books. The results of the findings confirmed that the model fitted well with the empirical data. The results showed that attitude, social value, habits, perceived ease of use, price value, functional value are important predictors of e-book adoption.

Keywords: e-book, reading, structural equation model, mixed method, adoption of e-books, technology acceptance model

Introduction

Since the emergence of e-books in 1971, there have been concerns that e-books would replace printed books. However, nearly six decades have now passed, and the growth rate of reading e-books is still lower than that of printed books (Bergström & Höglund, 2020; Dimitriadis et al., 2020). When the global pandemic started in early 2020, everything was impacted, including reading habits, which has resulted in e-book readers increasing by leaps and bounds. Although many research studies around the world concluded that e-book usage grew slowly and some showed that users prefer paper-books to e-books (Watanabe & Fujimoto, 2020), the number of e-book readers in Thailand has been rising dramatically (Araújo et al., 2022).

The findings regarding the adoption of electronic books (e-books) in Thailand are of significant importance as they can have several implications for the future of digital reading and the publishing industry in the country. Here are some key points highlighting the importance of these findings and their potential impact: Market Growth Potential: Understanding the current state of e-book adoption provides insights into the market's growth potential. If the findings indicate that e-book adoption is on the rise, it suggests opportunities for publishers, authors, and digital content providers to invest in the Thai e-book market. Consumer Preferences: The findings can shed light on consumer preferences regarding e-books, including the types of content they prefer (e.g., fiction, non-fiction, educational), preferred e-reading devices, and reading habits. This information can help publishers tailor their offerings to better meet consumer demand. Barriers to Adoption: Identifying the barriers to e-book adoption in Thailand, such as limited access to technology, high costs, or a lack of awareness, is crucial.

¹ College of Digital Innovation Technology, Rangsit University, Pathum Thani, Thailand, Email: Thipsuda.r64@rsu.ac.th

² College of Digital Innovation Technology, Rangsit University, Pathum Thani, Thailand, *Corresponding author: sumaman.p@rsu.ac.th

Addressing these barriers can help accelerate the adoption of e-books and expand the digital reading audience.

Educational Impact: E-books play a significant role in education. If the findings reveal that e-books are being adopted in educational settings, it highlights the importance of digital resources in modern education. This can lead to further investment in digital educational materials and technology infrastructure in schools and universities (Smith, J., & Johnson, A, 2023)

Publishing Industry Strategies: Publishers and content creators can use the findings to develop strategies for the Thai market. For example, if the findings show a growing interest in specific genres or topics, publishers can focus on producing more content in those areas.

Digital Infrastructure: The adoption of e-books relies heavily on digital infrastructure, including internet access and e-reader availability. If the findings indicate a need for improved digital infrastructure, it may prompt government and private sector investments in expanding internet access and e-reader affordability. **Promotion and Awareness:** Findings can guide promotional efforts to raise awareness about e-books and their benefits. Libraries, schools, and cultural institutions can use this information to create campaigns encouraging e-book usage (Saha, 2022). **Content Localization:** If consumers prefer content in the Thai language, there may be opportunities to translate and localize more foreign-language e-books, making them accessible to a wider audience. **Economic Impact:** The growth of the e-book market can have economic implications, including job creation in content production, technology development, and distribution. A thriving e-book market can contribute to the digital economy's growth.

In summary, the findings on e-book adoption in Thailand are essential for various stakeholders, including publishers, educators, policymakers, and content providers. They can help shape strategies, investments, and initiatives aimed at promoting digital reading and expanding access to e-books in the country. Moreover, understanding the dynamics of e-book adoption can contribute to Thailand's broader efforts in embracing digital technology and knowledge dissemination. A survey conducted at the National Bookfair in Thailand in 2022, showed that 42% of 2,977 respondents read e-books (Association, 2023). Compared to other developing countries, Thailand has a surprisingly high rate of e-book reading. As a result, the purpose of this research was to investigate the factors influencing readers to adopt the use of e-books in Thailand.

Literature Review and Hypotheses Development

The basis of this research is the integration of 4 theories including TAM (Technology Acceptance Model) (Abdul Aziz et al., 2020; F. Davis et al., 1989), UTAUT2 (Unified Theory of Acceptance and Use of Technology) (Tamilmani et al., 2021; Venkatesh et al., 2003), Perceived value (Doyle, 2000), and experts' opinions from the Delphi method to examine the factors influencing Thai reader's intentions toward the use of e-books (Turek, 2022).

Technology Acceptance Model (TAM)

The technology acceptance model is a commonly referenced idea used by many academics to explain how individuals accept new technologies such as reading e-books (Taherdoost, 2018).

According to this theory, Davis et al. (Abdul Aziz et al., 2020; F. D. Davis et al., 1989) have shown that perceived ease of use (PEAU) is the most important determinant of perceived usefulness (PU). However, in this research, it is functional value. PEAU and PU have a direct effect on users' attitudes (ATT), so attitudes also have a direct effect on users' intentions.

In other words, if the system is easy to use, it will be recognised by users as the most useful. There are many research studies confirming that perceived ease of use has a direct effect on usefulness or functional value (Smeda et al., 2018).

H₁: *Perceived Ease of Use has a direct effect on positive Functional Value.*

H₂: *Perceived Ease of Use has a direct effect on positive Attitudes.*

H₉: *Functional Value has a direct effect on positive Behavioral Intention.*

H₁₀: *Attitude has a direct effect on positive Behavioral Intention.*

Perceived Value (PV)

Perceived value is a theory which has been discussed in many previous studies in relation to the adoption of e-books (Watjatrakul, 2017), mobile services (Marliana & Nurhayati, 2020), and e-learning (Liao et al., 2022).

Venkatesh (Venkatesh et al., 2003) define Social Influence (SV) as the degree to which a person perceives that it is important because others believe in the use of a new IT system. In this research, social value is a part of Perceived Value theory. Many previous researches show that social influence plays an important role in making people decide to use e-books (Xi et al., 2019).

H₃: *Functional Value has a direct positive effect on Attitude.*

H₄: *Price Value has a direct positive effect on Behavioral Intention.*

H₅: *Social Value has a direct positive effect on Behavioral Intention.*

Habit (HAB)

Habit is one of the variables in the UTUAT2 model which was extended from the original UTUAT model. UTUAT and UTUAT2 are used to forecast the adoption of technology (Gunawan et al., 2019; Lawson-Body et al., 2020). Prior research has shown that habits directly influence the behavioral intention to use e-books (Martins et al., 2018).

H₆: *Habit has a direct positive effect on Behavioral Intention.*

Environmental Concerns (ENV)

Previous research studies from many countries found that environmental concerns had an impact on readers who decide to use e-books (Hsiao & Chen, 2017; Kang et al., 2021). In particular, Hsu (Hsu et al., 2017) found that environmental concerns had the most influence on the use of e-books (Shaier, Raissi & Seshaiyer 2021)..

Similarly, Thai people also had significant concerns about how the environment might affect their purchase intentions (Maichum et al., 2017). But few experts from the qualitative survey mentioned the environmental concerns should be one of the factors influencing the use of e-books the new Thai generation.

H₇: *Environmental concerns have a direct effect on positive Behavioral Intention.*

Individual Innovation (INN)

The definition of individual innovation in this research is “the degree of interest in trying out new technology or a new concept”. Many studies of innovation found that individual innovation had a significant direct effect on behavioral intention (Saprikis et al., 2018).

Also e-book users showed that individual innovation had a direct effect on intention (Chen, 2019).

H₈: *Individual innovation has a direct effect on positive Behavioral Intention.*

Research Methodology

This research used a mixed-method approach, a qualitative approach and the Fuzzy e-Delphi technique which these two methods led to the constructs in the proposed model. Twenty-three participants took part in the e-Delphi method. These participants, 33.33% (n = 7) reported working an e-book application or a website business company, 33.33% (n = 8) working in a publishing company which sold e-books and the remaining participants (33.3%; n = 8) reported working in the government sector that is responsible for the promotion of reading.

In round 1, researchers analysed 80 statements from 23 experts by content analysis methods. In round 2, 2 participants dropped out of the study so 21 participants were left in this round. The remaining 49 statements in round 2 were measured by an expert panel which used fuzzy logic theory. The threshold criteria for the cut-off point was 0.7. Then, the Delphi list of key elements was finalized.

Following a qualitative method, the questionnaires were sent out to readers. The questions ranged from "Strongly agree" to "Strongly disagree" on a 7-point Likert scale. The number of samples is based on Kline (Kline, 2016), who suggested that there should be more than 200 samples when using the SEM technique. Accordingly, the sample size in this study was 707. The empirical data was collected online. There were two sections in the questionnaire. The first section was related to the demographic behavior of the participants in the use of e-books. The second section was related to latent variables which each of the factors comprised at least three items which were adapted from previous research and the Delphi method.

The research method of maximum likelihood was used to test both the measurement and structural models. Figure 1 shows our proposed research model.

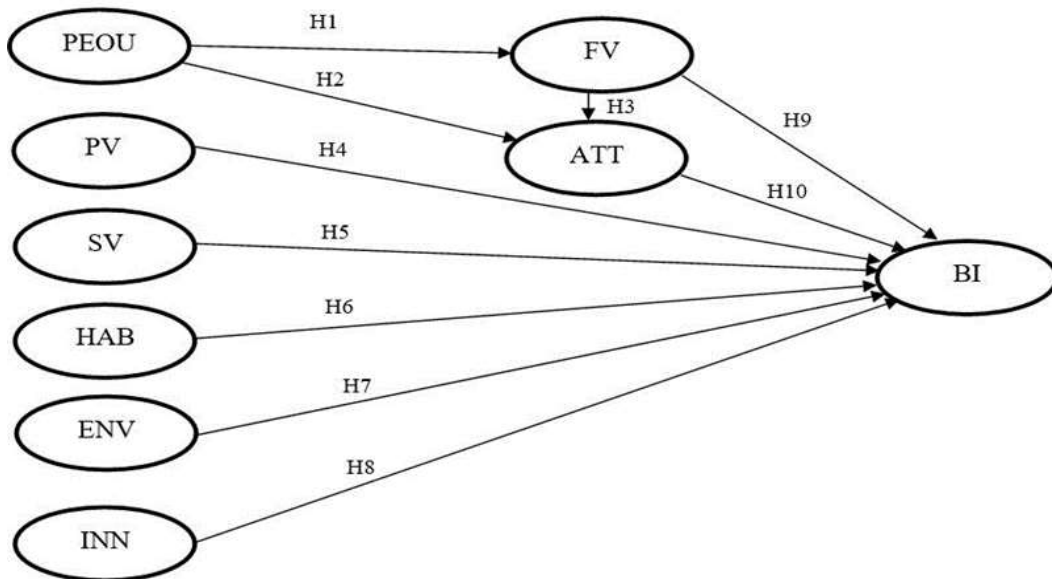


Figure 1. Proposed Research Model

Table 1. Shows the Study's Hypotheses.

Hypotheses	
H1	Perceived Ease of Use has a direct effect on positive Functional Value.
H2	Perceived Ease of Use has a direct effect on positive Attitude.
H3	Functional Value has a direct effect on positive Attitude.
H4	Price Value has a direct effect on positive Behavioral Intention.
H5	Social Value has a direct effect on positive Behavioral Intention.
H6	Habit has a direct effect on positive Behavioral Intention.
H7	Environmental Concerns has a direct effect on positive Behavioral Intention.
H8	Individual Innovation has a direct effect on positive Behavioral Intention.
H9	Functional Value has a direct effect on positive Behavioral Intention.
H10	Attitude has a direct effect on positive Behavioral Intention.

Results

Demographics

Table 2 summarizes the general demographic information about the readers who participated in this research including gender, age, education level, income, and use of reading devices. There were 707 questionnaires, 233 of which were submitted by males whereas 432 were submitted by females and there were 42 others (33%, 61.1% and 5.9% respectively). Age profiling shows that the respondents who were aged 18-30 years were more likely to be familiar with reading e-books than other age groups. A smart phone was the main device (90.5%) that respondents used to read e-books, which was the same result as that of Faloye who found that most respondents used smartphones as the most common device to read e-books (Faloye et al., 2020).

Table 2. Shows the Demographics of the Respondents.

Topic		Frequency	Percentage
Gender	Male	233	33
	Female	432	61.1
	Others	42	5.9
Age	Under 18	105	14.9
	18-30	249	35.2
	31-40	177	25
	41-50	125	17.7
Education	More than 50	51	7.2
	Undergraduate	128	18.1
	Bachelor degree	415	58.7
	Master degree	126	17.8
Income	Doctoral degree	38	5.4
	< 15000 Baht	205	29
	15001-34999 Baht	270	38.2
	35000-69999 Baht	157	22.2
Device to read e-books	> 70000 Baht	75	10.6
	Smart phone	640	90.52
	Tablet	435	61.53
	E-reader	83	11.74
	Computer	281	39.75

Measurement model

To analyse the data in this study, the researchers employed SEM in conjunction with the Maximum Likelihood Estimation approach. The data showed normal distribution with skewness and kurtosis as expected. All the elements satisfied the skewness and kurtosis criteria, which had absolute values of less than 2 and 3, respectively. EFA was used by the researcher to assess the validity of the variables proposed. CFA was used to assess the goodness of fit and concept validity. The researcher chose 0.30 as the cut-off threshold for significant factor loading. The items with factor loading lower than 0.3 were removed. A total of 20 items were removed accordingly. The 29 variable items were calculated. Hair (Hair et al., 2019; Sarjono, H., & Yulainita, 2019) suggested that AVE should be more than 0.5, CR should be more than 0.7 and Cronbach's alpha should be more than 0.7 for a good reliability. The results are reported in Table 3. Cronbach's alpha values for all constructions exceeded Keith's suggested levels (Taber, 2018), which should be more than 0.7. Similarly, the CR of all constructions exceeded Hair's proposed criterion of 0.7 (Hair et al., 2019). As a result, all structures demonstrated high dependability. AVE which is used to assess the convergent validity of constructs should be more than 0.5 as recommended by Fornell and Larcker (Ab Hamid et al., 2017). Most constructs easily exceeded the threshold except for the construct Individual Innovation (AVE =0.48). This means that there was good convergent validity.

Table 3. Evaluation of the Measurement Model.

Items	Latent	Cronbach's alpha	R	R ²	CR	AVE	
PEOU1	<---	PEOU	0.89	0.844	0.7123	0.91	0.66
PEOU2	<---	PEOU		0.813	0.6610		
PEOU3	<---	PEOU		0.774	0.5991		
PEOU4	<---	PEOU		0.786	0.6178		
PEOU5	<---	PEOU		0.831	0.6906		
FV1	<---	FV	0.84	0.885	0.7832	0.90	0.74
FV2	<---	FV		0.873	0.7621		
FV3	<---	FV		0.827	0.6839		
Items	Latent	Cronbach's alpha	R	R ²	CR	AVE	
SV1	<---	SV	0.90	0.795	0.6320	0.82	0.54
SV2	<---	SV		0.769	0.5914		
SV3	<---	SV		0.687	0.4720		
SV4	<---	SV		0.683	0.4665		
PV1	<---	PV	0.87	0.685	0.4692	0.74	0.50
PV2	<---	PV		0.729	0.5314		
PV3	<---	PV		0.683	0.4665		
HAB1	<---	HAB	0.88	0.727	0.5285	0.75	0.50
HAB2	<---	HAB		0.685	0.4692		
HAB3	<---	HAB		0.708	0.5013		
ENV1	<---	ENV	0.94	0.666	0.4436	0.77	0.53
ENV2	<---	ENV		0.768	0.5898		
ENV3	<---	ENV		0.749	0.5610		
INN1	<---	INN	0.87	0.696	0.4844	0.73	0.48
INN2	<---	INN		0.67	0.4489		
INN3	<---	INN		0.711	0.5055		
ATT1	<---	ATT	0.96	0.707	0.4998	0.80	0.50
ATT2	<---	ATT		0.726	0.5271		
ATT3	<---	ATT		0.695	0.4830		
ATT4	<---	ATT		0.694	0.4816		
INN1	<---	INN	0.91	0.808	0.6529	0.78	0.55
INN2	<---	INN		0.717	0.5141		
INN3	<---	INN		0.719	0.5170		

The discriminant validity was assessed by the HTMT ratio and the Fornell Larcker criterion. The suggested HTMT ratio is less than 0.9. As shown in Tables 4 and 5, all constructs were within the 0.90 criteria (Ab Hamid et al., 2017). Also, the Fornell-Larcker criterion was analysed for each pair of constructs. It was discovered that the square root of the AVE of each construct was greater than its connection with the other constructs. As a result, discriminant validity was established.

Table 4. External Variable Discriminant Validity Test: HTMT

Construct	FV	SV	PV	HAB	ENV	INN	ATT
SV	-0.223						
PV	0.095	0.668					
HAB	0.274	0.424	0.563				
ENV	0.284	0.454	0.623	0.503			
INN	0.448	0.295	0.461	0.615	0.603		
ATT	0.390	0.324	0.585	0.805	0.547	0.696	
INN	-0.036	0.618	0.62	0.656	0.425	0.420	0.655

Table 5. Discriminant Validity test: Fornell and Larker

Construct	AVE	PEOU	SV	PV	HAB	ENV	INN
PEOU	0.66	0.812					
SV	0.54	0.207***	0.735				
PV	0.50	0.141***	0.671***	0.707			
HAB	0.50	0.391***	0.411***	0.556***	0.707		
ENV	0.53	0.311***	0.438***	0.627***	0.495***	0.728	
INN	0.48	0.503***	0.271***	0.458***	0.608***	0.601***	0.693

Structural model

According to the results from Table 6, the order of the factors influencing behavior al intention was: Attitude (0.549) > Social Value (0.413) > Habit (0.394) > Perceived Ease of Use (0.196) > Price Value (0.105) > Functional Value (0.056) > Environmental concerns (-0.083) > Individual Innovation (-0.060)

Table 6. Direct and Indirect Effects of the Model.

Construct	FV			ATT			BI		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
PEOU	0.927	-	0.927	0.183	0.294	0.477	-	0.056	0.196
FV	-	-	-	0.317	-	0.317	-0.222	0.174	0.056
SV	-	-	-	-	-	-	0.413	-	0.413
PV	-	-	-	-	-	-	0.105	-	0.105
HAB	-	-	-	-	-	-	0.394	-	0.394
ENV	-	-	-	-	-	-	-0.083	-	-0.083
INN	-	-	-	-	-	-	-0.060	-	-0.060
ATT	-	-	-	-	-	-	0.549	-	0.549
R ²	0.860			0.242			0.706		

To investigate the goodness of fit of the structural model, the researcher applied the Chi-Square test, GFI, AGFI, CFI, TLI, and RMSEA (Hair et al., 2019). Table 7 demonstrates the overall fit of the model with the chi-square value ($\chi^2 = 959.487$ with 349 degrees of freedom) and the

p-value (p-value = 0.000).

Table 7. Goodness of Fit.

Index	X ²	df	p-value	x ² /df	GFI	AGFI	CFI	TLI	RMSEA
Criteria	-	-	-	≤ 3	≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.90	≤ 0.08
Final model	959.487	349	0.000	2.749	0.920	0.901	0.939	0.929	0.050

Table 8 above shows that 7 out of 10 of the hypotheses were found to be significant. All the factors do not influence behavioral intention in the same way. Some are only influenced by three variables including Attitude (ATT), Social value (SV), and Habit (HAB) whereas Price Value (PV), Environmental concerns (ENV), and Individual Innovation (INN) were rejected.

Table 8. Research test Results. (at p*** <0.001, p**<0.01, p*<0.05)

Hypothesis	Relationship	T-value	P value	Direction	Decision
H1	PEOU → FV	26.961	***	Positive	Acceptable
H2	PEOU → ATT	4.223	***	Positive	Acceptable
H3	FV → ATT		***	Positive	Acceptable
H4	PV → BI	1.154	0.249	Positive	Unacceptable
H5	SV → BI	5.178	***	Positive	Acceptable
H6	HAB → BI	5.088	***	Positive	Acceptable
H7	ENV → BI	-1.113	0.266	Positive	Unacceptable
H8	INNO → BI	-0.761	0.447	Negative	Unacceptable
H9	FV → BI	-0.222	***	Negative	Acceptable
H10	ATT → BI	9.437	***	Positive	Acceptable

* FV → ATT is a fixed parameter.

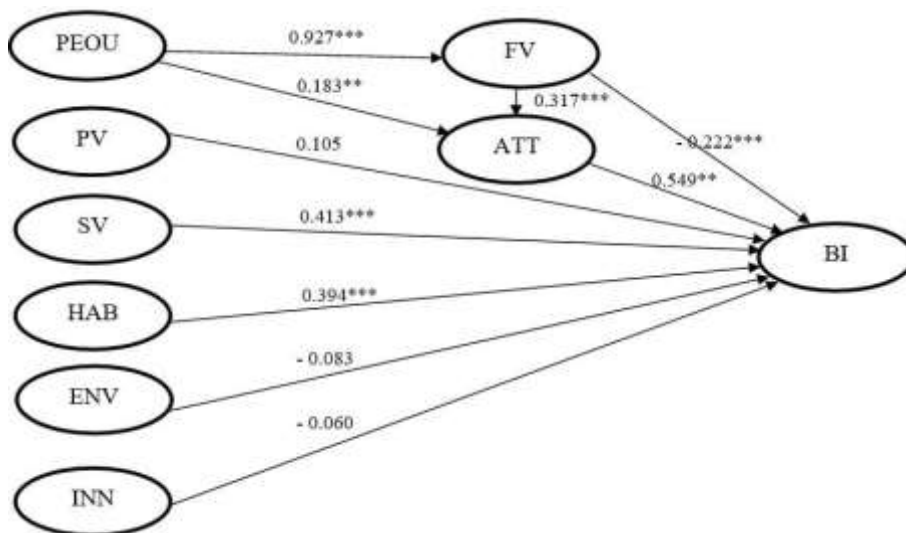


Figure 2. Results of study’s model

The structural model closely matched the facts. The dependent factors showed 71% of the variance of the factor “Behavioral Intention to read e-books”. The dependent factors showed explain 24% of the variance of the factor “Attitude”. Figure 2 shows that the results supported

seven ten of the research hypotheses, while three of the hypotheses were not supported by the empirical data (H₄, H₇, H₈).

Conclusion

The purpose of this research was to identify the elements that influence the users of e-books. Figure 2 shows the structural model which was developed by an analysis of the structural paths, t-test, and variances. Of the ten hypotheses, seven hypotheses were supported. The findings show that Attitude, Social Value, Habit, Perceived Ease of Use, and Functional Value caused an increase in the behavioral intention to adopt the use of e-books which supported the proposed hypotheses.

There are few studies which show that Environmental concerns, Individual Innovation, and Price value positively affect the use of e-books. However, there was no mention of a significant influence on the behavioral intentions of Thai readers or that Thai readers value environmental concerns. Apart from attitude, all agencies which relate to the promotion of the reading of e-books should also focus on social value. To encourage families and friends to use e-books for reading would significantly influence e-book promotion. In addition, Functional Value is one of the most important factors, especially the availability of e-books which are easy to read and buy at all times as these are the main concerns of most readers. We strongly recommend that all related agencies should promote positive attitudes to e-books to substantially increase the number of e-book readers.

The limitation of this study is that the researcher used convenience sampling, which results in different numbers of samples, whereas sampling according to region and age could possibly bring some interesting results to this research.

A future study could focus on why some readers do not read e-books. It is interesting that Thai readers use their mobile phones as the main device to read e-books although they have a small screen size. Another possible further study could focus on the many aspects of functional value or usefulness mentioned by the experts. This study might be beneficial to research on the use of e-books in developing countries which have high internet penetration rate like Thailand.

Appendix: Operationalization variables of the study

Ease of Use (PEOU)

1. Downloading E-books is easy.
2. Payment to buy E-books is easy.
3. I am accustomed to use E-books quickly.

Functional Value (FV)

1. E-books can be read everywhere and at any time.
2. E-books can be bought everywhere and at any time.
3. Functions of e-books are useful such as increasing font size, adjust brightness of screen.

Perceived Value (PV)

1. Buying e-books allows me to save money.
2. E-books provide good value.
3. E-book prices are acceptable

Social Value (SV)

1. Family plays an important role in making me read e-books.
2. Friends play an important role in making me read e-books.
3. Social media play an important role in making me read e-books.
4. Reading e-books makes me look smart.

Habit (HAB)

1. I love to read e-books from electronics devices.
2. I read e-books in everyday life.
3. I read e-books all the time. Eg. when travelling, in the toilet.

Environmental Concerns (ENV)

1. Reading e-books will help save the environment.
2. Reading e-books will help save the world for future generations.
3. Reading e-books helps reduce global warming.

Individual Innovation (INN)

1. I like exploring and trying new technologies.
2. I am open to new technologies.
3. Keeping up with new technologies is important for me.

Attitudes (ATT)

1. I like using e-books.
2. I am positive towards using e-books.
3. I am satisfied using e-books.
4. Using e-books is fun.

Behavioral Intention (BI)

1. I intend to read e-books more often.
2. I would like to read e-books instead of paperbacks.
3. When I would like to read a book, I prefer e-books to printed books.

Discussion of results

Reading habits and the use of e-books can vary significantly between countries in Asia due to differences in technology access, government policies, reading culture, promotion of reading through platforms and apps, language, and content availability. Here is a comparison of e-book reading in Thailand with other Asian countries:

Technology Readiness and Internet Access: Countries with better internet infrastructure and technology access tend to support the growth of e-book reading. Some Asian countries may have limited internet access or less advanced technology infrastructure, affecting the availability and usage of e-books.

Government Policies and Support: Government support and policies for e-book reading and education technology can influence the growth of e-book reading. Some countries may prioritize these areas, while others may not have extensive government support.

Reading Culture: The reading culture in each country can significantly impact e-book

Adoption. In countries with a strong reading culture, people may be more inclined to embrace e-books as an extension of their reading habits.

Promotion through Platforms and Apps: The availability and promotion of e-book platforms and apps can vary by country. Some countries may have a robust ecosystem of e-book platforms and apps, making it easier for readers to access digital books. Language and Content: Accessibility to e-books in the local language and the availability of content that appeals to readers can also affect e-book adoption. Countries with a wide selection of e-books in their native language may see higher usage. It's important to note that the e-book landscape is dynamic and can change rapidly. While these factors can provide insights into e-book adoption, individual preferences, socioeconomic factors, and cultural nuances also play a role in how people in different countries engage with e-books. Additionally, government policies and technological advancements can evolve over time, influencing the e-book landscape. Overall, e-book adoption in Asia is influenced by a complex interplay of technological, cultural, and economic factors, making it important to consider the unique context of each country when analyzing e-book reading habits.

References

- Ab Hamid, M. R., Sami, W., & Mohmad Sidek, M. H. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. *Journal of Physics: Conference Series*, 890(1). <https://doi.org/10.1088/1742-6596/890/1/012163>
- and ease of use. *Library Hi Tech News*, 30(7), 10–16. <https://doi.org/10.1108/LHTN-05-2013-0028>
- and practice of structural equation modeling, 4th ed.* Guilford Press.
- Araújo, M. A. d. S., Rodrigues, J. S., Lobo, T. d. L. G. F., & Maranhão, F. C. d. A. (2022). Healthcare-associated Infections by *Pseudomonas aeruginosa* and Antimicrobial Resistance in a Public Hospital from Alagoas (Brazil). *Jornal Brasileiro de Patologia e Medicina Laboratorial*, 58. doi:10.1900/JBPML.2022.58.447
- Association, P. and B. (2023). *Book Expo Thailand 2022 Survey*. <https://pubat.or.th/statistics2565/>
- Aziz, M. N. A., Harun, S., Baharom, M., & Kamaruddin, N. (2020). THE EVOLUTION OF THE TECHNOLOGY ACCEPTANCE MODEL (TAM). *The Interdisciplinary of Management, Economic and Social Research*, 242-247.
- Bergström, A., & Höglund, L. (2020). E-books: In the shadow of print. *Convergence*, 26(4), 895– 911. <https://doi.org/10.1177/1354856518808936>
- Chen, L. (2019). *Applying the UTAUT Model to understand Factors Affecting the Use of E-books in Fujian, China*.
- Clemons, N. (2012). The environmental impact of digital technology use. In *Computer Information and Ethics Handbook* (Pages 159-176) Wiley.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>
- Davis, F., Bagozzi, R., & Warshaw, P. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35, 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>
- determinants of e-book adoption. *Program*, 51(1), 2–16. <https://doi.org/10.1108/PROG-04-2014-0022>

- Dimitriadis, E., Chatzoudes, D., Jordadn, M., Cudel, F., & Bourdouni, E. (2020). Factors affecting the Acceptance of Electronic Books by the Readers. *International Journal of Business and Economic Sciences Applied Research*, 12(1), 7–19. <https://doi.org/10.25103/ijbesar.121.01>
- Doyle, P. (2000). Value-based marketing. *Journal of Strategic Marketing*, 8(4), 299–311. <https://doi.org/10.1080/096525400446203>
- Faloye, S. T., Ajayi, N. A., Raghavjee, R., & Faniran, V. (2020). Managing the Challenges Facing the Adoption of E-books: A case of ukzn. In *2020 International Conference on Artificial Intelligence, Big Data, Computing and Data Communication Systems, icABCD 2020 - Proceedings*. <https://doi.org/10.1109/icABCD49160.2020.9183868>
- Gao, T., & Deng, Y. (2012). A study on users' acceptance behavior to mobile e-books application based on UTAUT model. *ICSESS 2012 - Proceedings of 2012 IEEE 3rd International Conference on Software Engineering and Service Science*, 376–379. <https://doi.org/10.1109/ICSESS.2012.6269483>
- Gunawan, A., Muchardie, B. G., & Liawinardi, K. (2019). Millennial Behavioral Intention To Adopt E-Book Using Utaut2 Model. *International Conference on Information Management and Technology (ICIMTech)*, Jakarta/Bali, Indonesia, 98-102.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis*. In *TA - TT - (Eighth edi)*. Cengage Andover, Hampshire, United Kingdom. <https://doi.org/LK-https://worldcat.org/title/1082318713>
- Hargittai, E. (2010) Digital Na(t)ives? Changes in Internet Skills and Use of Members of the "Net Generation" *Sociological Inquiries*, 80(1), 92-113.
- Hsiao, K.-L., & Chen, C.-C. (2017). Value-based adoption of e-book subscription services.
- Hsu, C. L., Lin, Y. H., Chen, M. C., Chang, K. C., & Hsieh, A. Y. (2017). Investigating the <https://doi.org/10.1016/j.chb.2014.09.056>
<https://doi.org/10.1109/ICIMTech.2019.8843826>.
- Jin, C.-H. (2014). Adoption of e-book among College Students: The perspective of integrated TAM. *Computers in Human Behavior*, 41, 471-477.
- Kang, Q., Lu, J., & Xu, J. (2021). Is e-reading environmentally more sustainable than conventional reading? Evidence from a systematic literature review. *Library & Information Science Research*, 43(3), 101105. <https://doi.org/https://doi.org/10.1016/j.lisr.2021.101105>
- Kline, R. B. (2016). Principles and practice of structural equation modeling, 4th ed. In *Principles*
- Lawson-Body, A., Willoughby, L., Lawson-Body, L., & Tamandja, E. M. (2020). Students' acceptance of E-books: An application of UTAUT. *Journal of Computer Information Systems*, 60, 256–267. <https://doi.org/10.1080/08874417.2018.1463577>
- Lee, S. (2013). An integrated adoption model for e-books in a mobile environment.pdf.
- Liao, Y. K., Wu, W. Y., Le, T. Q., & Phung, T. T. T. (2022). The Integration of the Technology Acceptance Model and Value-Based Adoption Model to Study the Adoption of E-Learning: The Moderating Role of e-WOM. *Sustainability*, 14(2), 815. <https://doi.org/10.3390/su14020815>
- Maichum, K., Parichatnon, S., & Peng, K.-C. (2017). The Influence of Environmental Concern and Environmental Attitude on Purchase Intention towards Green Products: A Case Study of Young Consumers in Thailand. *Www.ijbmm. Com International Journal of Business Marketing and Management*, 2, 2456–4559. www.ijbmm.com
- Marliana, R. R., & Nurhayati, L. (2020). Covariance Based-Sem on Relationship Between Digital Literacy, Use of E-Resources, and Reading Culture of Students. *Indonesian Journal of Statistics and Its Applications*, 4(1), 55–67. <https://doi.org/10.29244/ijsa.v4i1.552>
Telematics and Informatics, 30, 165–176. <https://doi.org/10.1016/j.tele.2012.01.006>
- Letchumanan, M., & Muniandy, B. (2013). Migrating to e-book: a study on perceived usefulness

- Martins, M., Farias, J. S., Albuquerque, P. H. M., & Pereira, D. S. (2018). Adoption of technology for reading purposes: A study article of e-books acceptance. *Brazilian Business Review*, 15(6), 568–588. <https://doi.org/10.15728/bbr.2018.15.6.4>
- Park, E., Sung, J., & Cho, K. (2015). Reading experiences influencing the acceptance of e-book devices. *The Electronic Library*, 33(1), 120–135. <https://doi.org/10.1108/EL-05-2012-0045>
- Saprikis, V., Markos, A., Zarpou, T., & Vlachopoulou, M. (2018). Mobile Shopping Consumers' Behavior: An Exploratory Study and Review. *Journal of Theoretical and Applied Electronic Commerce Research*, 13, 71–90. <https://doi.org/10.4067/S0718-18762018000100105>
- Sarjono, H., & Yulainita, W. (2019). *Structural equation modeling (SEM): An introduction, application for business research*. Salemba Empat Publishing.
- Smeda, A., Shiratuddin, M. F., & Wong, K. W. (2018). A structural equation modelling approach for adoption of e-book amongst mathematics and statistics (MAS) students at higher education institutions in Libya. *International Journal of Information and Learning Technology*, 35(4), 240–254. <https://doi.org/10.1108/IJILT-05-2017-0043>
- Smith, J., & Johnson, A. (2023). "E-book Adoption Trends in Thailand: Implications for Education and Publishing." *Journal of Digital Learning and Technology*, 42(3), 217-234.
- Saha, S., Pal, P., Halder, S., Dhara, K., & Saha, N. C. (2022). Shark diversity in the Indian Sundarban biosphere. *FishTaxa*, 23, 53-56.
- Shaier, S., Raissi, M., & Seshaiyer, P. (2021). Data-driven approaches for predicting spread of infectious diseases through DINNs: Disease Informed Neural Networks. *Letters in Biomathematics*.
- Taber, K. S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, 48(6), 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>
- Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, 22, 960–967. <https://doi.org/10.1016/j.promfg.2018.03.137>
- Tamilmani, Turek, P. (2022). Evaluation of the auto surfacing methods to create a surface body of the mandible model. *Reports in Mechanical Engineering*, 3(1), 46-54.
- K., Rana, N. P., Wamba, S. F., & Dwivedi, R. (2021). The extended Unified Theory of Acceptance and Use of Technology (UTAUT2): A systematic literature review and theory evaluation. *International Journal of Information Management*, 57. <https://doi.org/10.1016/j.ijinfomgt.2020.102269>
- 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. <https://doi.org/10.2307/30036540>
- Watanabe, Y., & Fujimoto, T. (2020). Touch a Paper System Design for Reading Utilizing Physical Touch. *2020 International Conference on Computational Science and Computational Intelligence (CSCI)*, 1130–1132. <https://doi.org/10.1109/CSCI51800.2020.00210>
- Watjatrakul, B. (2017). Effects of personal values and perceived values on e-book adoption. *IEEE ICIS*, 429–434. <https://doi.org/10.1109/ICIS.2017.7960031>
- Xi, W., Wuyu, W., & Yibo, C. (2019). E-book adoption behaviors through an online sharing platform. *Information Technology & People*, 33(3), 1011–1035. <https://doi.org/10.1108/ITP-10-2018-0482>
- Zhou, Y., Wei, J., Meng, F., & Jiang, F. (2015). Influential Factors and User Behavior of Mobile Reading. *Journal of Intelligent Systems*, 24(2), 223–234. <https://doi.org/10.1515/jisys-2014-0120>