

Intention to Adopt EBooks: A Study on Influence of Consumption Value, Personal Values, and Resistance to Change

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Abstract: *The adoption of technology has been a focus of many studies. Although many theories regarding the adoption of technology have been proposed, some technologies still face the problem of not being adopted effectively. EBook is one of the technologies that provide multiple benefits but the adoption is yet to be effectively. This study examines the factors that influence the adoption of eBooks by employing selected factors from Theory of Consumption Value, Personal Values, and Resistance to Change. A survey of 252 students in an international university in Thailand was conducted and Structural Equation Model (SEM) was used to examine the influence of these selected factors and their interrelationship. The result indicates that the selected factors of personal values such as power, achievement, hedonism and stimulation have significant influence on the functional value, social, and emotional value in consumption value. Functional value and emotional value also have significant influence on the adoption of eBooks. The selected factor from resistance to change does not provide significant influence on the adoption of eBooks. Further discussion of the findings will be discussed in this paper.*

Keywords: *EBooks, Consumption Values, Personal Values, Resistance to Change, Adoption of Technology*

1. Introduction

Throughout human history, major advancements in technology have transformed the life of human and reshaped human societies. The influences of technology can be seen in transportation, communication, health care, entertainment, and many different aspects of human life.

In recent research on the adoption of technology, many are concerned with the rationality in making the decision to adopt the technology [1; 2; 3]. Although these researches provided insights and further understanding on technology adoption, many are still faced with the problem of inefficiency in the adoption of technology and limitations even though these technologies are potentially beneficial for the users [4].

EBook is a technology that provides multiple benefits such as capability of enhancing reading experience and reducing paper usage. But despite all these benefits, there remains a problem in the adoption and the widespread of eBooks. In recent report, printed books still outsold eBooks in the U.S. with the sales of eBooks at 23% and printed books with 63% of total book sales. These prompts further investigation in the adoption of eBooks [5].

There are several prominent theories regarding intrinsic factors for adoption of technology. In this study, the adoption of eBooks is examined from the perspective of consumption value, personal values, and resistance to change. The major theories employed are the Theory of Consumption Value [6], personal values by Schwartz [7], and the factors of resistance to change by Oreg [8].

The objective of this study is to examine on the influence on adoption of eBooks by the selected factors from these three theories and also the interrelationship between these selected factors. This study aims to examine a new perspective on the relationship between these theories and the factors influencing the adoption of eBooks.

2. Literature Review

The study on adoption of technology has received much attentions and focus as new technologies are being constantly introduced. Among all the theory on technology adoption, some of the most well-known theories are the TAM, TAM 2, and UTAUT [1; 2; 3]. But due to some limitations, researchers are also looking into the intrinsic and perceived values held by people when they are making their decision [9; 10]. Amongst all these studies are the three theories selected for this study.

2.1. Theory of Consumption Value

Theory of Consumption Value (TCV) is a theory explaining how buying decisions are being made by consumers. The principle preposition of this theory is that consumer choice is a function of multiple consumption values and these values make differential contributions in any given choice situation [6]. There are five consumption values that are presented.

The first consumption value is functional value. Functional value is how the consumer identifies value through the features, function, performance, and other utilitarian features [11]. Consumers will have expectation on utilitarian features provided by the product and this shapes the perceived functional value. The second consumption value is social value. With social value, the consumers and users look into the social image that the product can provide. Instead of just the functional and utilitarian features, the consumers also looked into the image, impression, and social approval that can be given by others when they use the product.

The other three consumption values are emotional value, epistemic value, and conditional value. For emotional value, the consumers consider about the feeling that is associated with the usage of the product [11]. Epistemic value is related to the ability of the product to arouse curiosity, provide novelty, and/or satisfy a desire for knowledge [6]. Conditional value is perceived on some products that are associated with particular conditions such as season or emergency occasions

Although consumption values are originally used to study the preference and consumer choice, some researchers have extended the application to green products and technology as the consumer choice is similar to the decision making of adopting a new technology or green product [12; 13; 14; 15]. Because of these, this theory is chosen for the current study on eBook and the interrelationship between other theories.

2.2. Theory of Personal Values

Values are important in both sociology and psychology. Schwartz provided theory of personal values (TPV) in which ten personal values are identified. These values have been tested in multiple countries to examine whether these values can be used in diverse cultural situations [16]. The ten personal values in TPV are listed in TABLE I along with the associated terms [7; 17; 18].

TABLE I: Associated Terms of Personal Values

Personal Values	Associated Terms
Achievement	Ambitious, successful, capable, influential
Power	Authority, wealth, social power
Self Direction	Creativity, freedom, choosing own goal, curiosity independence
Stimulation	Excitement, novelty, challenging life
Hedonism	Pleasure, enjoying life, self-indulgent
Security	Safety, harmony, stability
Conformity	Politeness, obedience, self-disciplined
Tradition	Religion, customs, status quo
Benevolence	Honest, helpful, forgiving, responsible, loving, loyal
Universalism	Understanding, tolerance, protection of people/nature

With the ten values that are provided, some of these values are closely related with another while some being opposite of another value. The four major groupings of the personal values are openness to change, self-enhancement, self-transcendence, and conservation [7].

TPV has been applied to field of technology such as the study which identified that the personal values of IT managers influence their innovativeness in handling task related to information technology [19] Other study also suggested that personal values influences whether users' motivation on contributing to open source initiatives in the technological domain [20]. TPV is applied in this research to study the adoption of eBooks and interrelationship of personal value and consumption values.

2.3 Resistance to Change

Although many researchers are focused on developing the adoption model to understand the adoption of new technology, there are several studies that are starting to view on the factor of resistance to change [21; 22] One of the major theories of resistance to change is developed by [8]. The model of resistance to change can be separated into four dimensions. These dimensions are routine seeking, emotional reaction, short term focus, and cognitive rigidity. These dimensions have also been tested across 17 countries [23].

There have been some studies that are being done related to the field of technology. These include the study which showed that the perceived ease of use in the technology adoption model is negatively influenced by the resistance to change when they are studying the adoption of digital libraries [24]. Due of these, theory of resistance to change is employed in this study to examine its influence on adoption of eBooks and the relationship with other theories selected for this study.

2.4. eBooks

EBooks refer to the digital representation of printed materials delivered through medium such as eBook reader and other viewing devices [25; 26]. With eBooks, there are the benefits such as reducing storage sapce, costs of production, and also the incorporation digital media such as sound or video clips to enhance the reading experience [27; 28].

Although eBooks present these benefits, the market share of eBooks still can't match with the traditional printed books [29]. This requires studies to identify the reason underlying the problem in the adoption of eBooks. In this study, the eBook that will be considered includes the content that can be viewed with eBook reader, computer, tablets, and handheld devices. The types of eBooks include digital books, text books, and other content with the representation of a traditional book. The e-magazines and e-newspaper are excluded from the scope of this study.

3. Hypothesis

In this research, the major objectives are to examine the factors influencing the adoption of eBooks and also the interrelationship between these selected factors. In recent research regarding the adoption of technology, multiple researches employed the TCV to examine the factors influencing the adoption of technology [13; 14; 15]. In these studies, consumption values have shown significant influence on the adoption of technology. But as with other studies, in order to fit into the context of eBooks, only relevant consumption values are selected. The consumption values that are selected for this study are functional value, social value, and emotional value. From these factors, this study proposes that:

H1. Functional Value positively affects intention to adopt eBooks.

H2. Social Value positively affects intention to adopt eBooks.

H3. Emotional Value positively affects intention to adopt eBooks.

Apart from the influence of consumption values on intention to adopt eBooks, the influence between the three selected consumption values is also examined in this study. In previous research, some researchers have examined the relationship between the consumption values and suggest significant influence on each other [30]. Because of these, this study therefore proposes that

H4. Functional values positively affect (a) social values and (b) emotional values.

H5. Social values positively affect emotional values.

In the second part of this study, some factors are selected from TPV. Previous studies have shown that personal values have influences on the consumption values in the consumption decision of consumers [11]. The consumption values perceived by the consumer will influence by the values that they find importance. Accordingly, the relationship between the personal value and consumption value is studied in the context of adoption of eBooks. In this study, the selected factors from TPV are power, achievement, hedonism, stimulation, and self direction. This study proposes that:

H6. Power positively affects (a) functional value and (b) social value.

H7. Achievement positively affects (a) functional value and (b) emotional value.

H8. Hedonism positively affects (a) social value and (b) emotional value.

H9. Stimulation positively affects social value.

H10. Self direction positively affects emotional value.

With these proposed hypotheses, the influences on the consumption value by personal values are examined. But apart from these, the influence of the personal values on each other is an area that has not been examined by previous studies. This study is also determined to examine these relationships and therefore proposes that:

H11. Power positively affects (a) achievement and (b) stimulation

H12. Hedonism positively affects (a) achievement, (b) Stimulation, and (c) self direction.

H13. Stimulation positively affects self direction.

H14. Self direction positively affects achievement.

Other than the personal values, the theory of resistance to change is another major focus of this study. From previous studies, resistance to change has influenced on the way people perceived a new technology. When users have the characteristics of resistance to change, the perceived value will be decreased or be negatively influenced. With this, their intention to adopt will also be influenced [24; 31]. The selected factor from this theory is short term focus. From the result examined from previous studies, this study therefore proposes that:

H15. Short term focus negatively affects (a) functional value, (b) social value, and (c) intention to adopt eBooks.

4. Methodology

The data collection technique selected for this research is the use of surveys as this is a common and effective method for collection of data especially for the studies on adoption of technology [1; 13]. The questionnaire is separated into four sections in which the sections focus on personal values, resistance to change, consumption values, and the demographic information respectively. The design of the questionnaire is designed by employing the survey designed by the theory's author such as Schwartz Value Survey [7] and Resistance to Change Scale [8].

The questionnaires were distributed in an international university in Thailand through the assistance of lecturers. A total of 300 questionnaires were distributed in order to account for the sample size required [32]. After the collection of data, the analysis method selected for this research is Structural Equation Model (SEM). The two major items that is examined are measurement model and structural model. The program that is used for SEM is the Analysis of Moment Structure (AMOS) version 22.

5. Result

With 300 questionnaires distributed, a total sample number of 252 are received after filtering the incomplete questionnaire. This resulted in a response rate of 84 percent. From the 252 respondents, 36.7% are male respondents and 63.3% are female respondents. All of the respondents are students from the international university in Thailand.

With the measurement model, the three major items examined are the composite reliability, convergent validity, and discriminant validity. The results are summarized in TABLE II.

TABLE II: Results of Test for Construct Reliability, Convergent Validity and Discriminant Validity.

	CR	AVE	SV	ACH	HED	SDI	STM	POW	EV	INT	STF	FV
SV	0.827	0.546	0.739									
ACH	0.775	0.632	0.262	0.795								
HED	0.856	0.666	0.054	0.658	0.816							
SDI	0.781	0.543	0.103	0.674	0.686	0.737						
STM	0.843	0.642	0.307	0.471	0.406	0.561	0.801					
POW	0.853	0.665	0.266	0.448	0.331	0.310	0.265	0.815				
EV	0.837	0.562	0.707	0.354	0.179	0.181	0.280	0.237	0.750			
INT	0.833	0.714	0.497	0.393	0.234	0.242	0.284	0.240	0.738	0.845		
STF	0.671	0.506	0.392	0.024	0.034	-0.058	0.077	-0.103	0.141	0.088	0.711	
FV	0.829	0.551	0.462	0.276	0.125	0.180	0.079	0.297	0.502	0.590	0.048	0.742

Note: CR = Composite Reliability, AVE = Average variance extracted, POW = Power, ACH = Achievement, HED = Hedonism, STM = Stimulation, SDI = Self Direction, FV = Functional Value, SV = Social Value, EV = Emotional Value, STF = Short term focus, INT = Intention to Adopt EBook

For the composite reliability (CR), all the values are above the value of 0.70 which indicates good composite reliability [33] except short term focus (STF). But even though STF does not meet the 0.70, other study still indicate that a number greater than 0.60 can be used as a standard for composite reliability [34]. With the value of 0.671, STF is still considered to match the standard of composite reliability. For the convergent validity to be established, the average variance extracted (AVE) should be equal or exceeds 0.50. [33]. All the AVE in the proposed model exceeds the value of 0.50. This indicates suitable convergent validity.

The last item to be tested in the measurement model is the discriminant validity. To test the discriminant validity, the square root of the AVE is examined. From the proposed model, all the values of the construct are greater than its off-diagonal elements of the corresponding rows and columns which indicate adequate discriminant validity [33]. From these test, the measurement model has adequate composite reliability, convergent validity, and discriminant validity.

With the structural model, the absolute fit indices are used to examine the results of the data and model [35]. The results are summarized in TABLE III.

TABLE III: Goodness of Fit Indices and Results

	X^2/df	RMSEA	GFI	AGFI	IFI	NFI	CFI
Suggested Level	≤ 3.00	≤ 0.08	≥ 0.90	≥ 0.80	≥ 0.90	≥ 0.90	≥ 0.90
Result	1.789	0.056	0.852	0.819	0.918	0.832	0.917

Note: X^2/df = Chi-square Test; RMSEA= Root mean square error of approximation; GFI= Goodness of fit statistics; AGFI = Adjusted goodness of fit statistics; IFI = Incremental fit indices; NFI= Normed-fit index; CFI = Comparative fit index.

From TABLE III, the proposed model meets all of the goodness of fit indices except GFI and NFI. Although these two items have not reached the cut-off point, they are still at a level close to the cut-off point which indicates a close to adequate level. These results indicate goodness of fit of the data and the model used in this study.

After examining the measurement and structural model, the hypotheses are examined. In this study, 15 major hypotheses are proposed and they can be detailed into 24 items. From these 24 items, 18 paths are supported. With the tests of hypotheses, the results are summarized in the model shown in the Fig. 1.

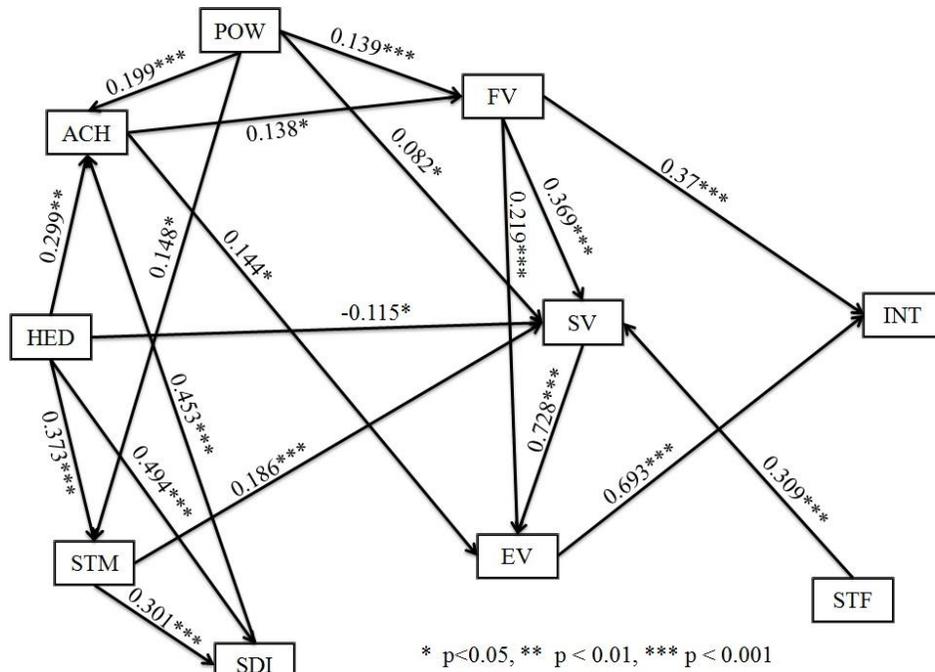


Fig. 1: Result of hypotheses testing and model

From the results regarding the influence of consumption values, FV and EV affect the intention to adopt eBook but SV show no significant effect. With the effects between the selected consumption values, FV has significant effect on SV and EV while SV has significant effect on EV. For the influence of consumption values by personal values, all the hypotheses were supported with significant effect except the effects on EV by HED and SDI. Apart from these, all the effects proposed between the selected personal values are supported with significant effect. Lastly, for the selected factor from theory of resistance to change, only SV is significantly affected by STF. This is an issue which is worth noting because STF results in positive effect instead of the negative effect proposed. But from the results, STF has no significant effect on intention to adopt eBooks.

6. Discussion

In this study, the objectives are to examine the factors influencing the adoption of eBooks and the interrelationship between these factors from the theory of consumption value, theory of personal value, and resistance to change. From the result on effects of consumption value on intention to adopt eBooks, functional value and emotional value have significant effect on the intention to adopt eBooks. This provides similar results with the previous studies on consumption value [14; 15]. One interesting fact to notice is the influence of social value on the intention to adopt eBooks. Although the hypothesis that social value positively affects intention to adopt eBooks is not supported, the result shows that social value still have significant influence on the intention but the effect is negative. This result might be due to the fact that the use of eBooks can be seen commonly and thus it does not provide the sense of social approval, image and impression from others when they use eBooks. Because of this, people who seek social impression from others are less likely to adopt eBooks. Apart from this, the selected consumption values also have significant influence on each other as indicated from the result.

For the influence of personal values on consumption values, the results indicates that power, achievement, and stimulation all have significant positive influence on consumption value. This provides a similar trend with the previous study [11]. This result helps further establish the influence of personal values on consumption values and suggests that the values that people find importance will have influence when they establish their consumption value regarding eBooks. Amongst the personal values, hedonism and self direction provide different result from the hypotheses. For hedonism, it negatively influences social value. This may be due to the

fact that the social value associated with using eBooks may not be able to provide the pleasure that people who value hedonism are seeking. The use of eBooks may not provide enough social impression from others that results in great pleasure. Apart from this, self direction does not influence emotional value as hypothesized. This may be due to the fact that eBooks are limited to the displaying device. This limits the independence and creativity that people who value self direction seek and thus results in no significant influence. For the interrelationship between the personal values, these selected factors show significant influence on each other as hypothesized. This is an area in which other studies have yet to examine. From this, a new perspective on the personal values can be studied apart from the sector grouping that what was originally proposed. The result suggests that the importance of one personal value can have significant influence on their perception of the importance of another personal value.

In the last part of this study, the factor of short term focus from the theory of resistance to change is examined for its influence on consumption value and intention to adopt eBooks. The result indicates that short term focus does not influence the intention to adopt eBooks, but results in negative influence on the social value. This might be due to the fact that people with short term focus are more likely to see the immediate benefits with more importance, but for eBooks, the social image that can develop and can be associated usually takes time to establish. As this is amongst the initial studies to examine the integration of factors from resistance to change into the adoption of technology, the result prompts further studies on the resistance to change on the adoption of other technology or products to further examine the influence.

7. Conclusion and Implications

In conclusion, this study examines the factors that influence the adoption of eBooks from the factors selected from the theory of consumption value, theory of personal value, and resistance to change. This study has identified the factors from these theories that have significance influence on the adoption of eBooks and also the influence amongst the factors.

With this result, eBook publishers can target sectors with specific personal values in order to obtain better perceived consumption values on eBooks and thus leads to the adoption of eBooks. The personal values can also be examined along with demographic information as different segments may have different personal values. Furthermore, studies can also be done to further examine the influence of the selected factors in other technological products in order to further improve the adoption of beneficial technologies.

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