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Acceptance of E-Book Usage During COVID-19 Pandemic Using Technology Acceptance Model

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ABSTRACT: It has been observed that there has been an increase in the use of e-books, mainly because people prefer to store all their reading materials in the digital environment and carry these materials with them. The benefits of e-books are endless. In a device smaller than a book, hundreds of thousands of books can be stored, notes can be taken, countless bookmarks can be placed. However, there has been resistance to this important and very helpful technology, just like every other technology. In this study, we aim to determine the perceptions and attitudes of book readers towards this new technology using technology acceptance model. The data is collected with the help of an online survey and a 5-point likert scale is used to measure factors. The determined sample is Istanbul Technical University students. Structural Equation Model is used to understand the effect of factors on behavioral intention. We conclude that 9 out of 11 hypotheses are supported.

KEYWORDS: Technology Acceptance Model, E-Book Usage, Structural Equation Model.

1. INTRODUCTION

An e-book, also called an eBook or electronic book, is the digital version of traditional, printed books, consisting of text and/or pictures, displayed on a flat panels of electronics such as computers, tablets and various other devices (Gardiner, 2010). As the technology progresses, it has affected all aspects of our lives, even reading. Ever since the invention of writing in 3200 BC, the human kind has been reading handwritten materials, mostly written on cloth, paper, stone or any other medium. The next scientific breakthrough wasn't until 1440 when Johannes Gutenberg invented the printing press. Not only did his invention made copying materials easier, but it also made reading materials easier to access to the general public. The invention of personal computers served a similar purposes with granting people better access to reading materials and distributing them. However, while computers make reading more accessible, they are not portable like a traditional book. For this purposes, e-readers were invented.

An e-reader, also stylised as an E-reader or e-book reader, is any device that's capable of displaying texts in broad term, however, it usually refers to the mobile electronic devices specialized for reading e-books. Devices such as smart phones and tablets can act as e-readers, but in this paper, e-reader will strictly be referring to devices designed specially for reading purposes. An e-reader doesn't necessarily share the same display technologies with the previously mentioned devices. Usually, they feature a technology called electronic paper to make it easier to read even under the sunlight and reduce the eyestrain (Falcone, 2012).

However, the technological advancements and development of new devices would not be as useful as it currently is if it hadn't been for the Internet. Internet is what enables so much information to be transferred between users. As it became more integrated with our daily lives, services such as e-commerce became more common, too. This allowed traditional, printed books to be sold in an alternative form.

While the fact that thousands of books can be stored in a device in the size of a single book is an enticing development for some readers, there's also resistance. This resistance is known as technology resistance and is known to be a reason for the failure of systems (Kim & Kankanhalli, 2009). Various reasons might affect the technology resistance and the usage of e-books or any other technology. In order to figure out these reasons so they can be solved, researches have been made. Davis's Technology Acceptance Model is one of the methods of understanding the mentality behind usage of e-books and the factors affecting it. Ever since it was developed, Davis's Technology Acceptance Model has been tested and used numerous times to explain the factors affecting technology usage and acceptance ever since it was developed (Bagozzi, 2007). It is also what this paper used in order to investigate the usage of e-books. Figuring out the reasons behind technology usage is extremely important, because only then it is possible to eliminate negative causes and enhance positive ones. Otherwise, the failure of the system is inevitable.

Under the light of the events occurred in most of 2020, mainly the COVID19 pandemic, there has been many lockdowns. People have been hesitant with shopping for physical goods even if they were daily necessities. Most of the stores, including bookstores have been shut down for long durations during the pandemic, therefore the only way of obtaining new books were online shopping. Yet the reluctance was prominent, especially because there has been news of COVID19 virus spreadinldg faster on paper (money). In an environment where people have been growing apprehensive about the usage of traditional books, it is expected to see an increase in e-book usage.

2. LITERATURE REVIEW

With the increasing usage of electronic devices in daily life, especially the younger generations that adapt to technologies faster started to use e-books and e-readers even more in the last decade. The fact that e-commerce has become more common and of the norm plays a big part in this. As the population started to trust payments over internet more, it has become more common for the readers to buy e-books for their e-readers or e-reader substitutes.

There's disagreement upon the true inventor of e-books. Some cite Brown, due to his claims that it was time to get rid of printed books, and ascend into a new reading machine, one where you can read thousands of books in minutes, if you desire to (1930). This machine he talked about, however, was only the concept of e-books, it was a mere idea Brown failed to put into motion, but it triggered a change.

The first digitized text, in the form of an index of Thomas Aquinas' works was Index Thomisticus, it was started on 1946 and was completed only in the 1970s (Bryson, 2014). This text is accepted as the first examples of an e-book. However, the first device similar to today's ereader, Enciclopedia Mecánica, was patented by Ángela Ruiz Robles, his prototype aimed to reduce the amount of books his students carried and was a mechanical device (Guillermo, 2013). It had several rolls stacked vertically with each roll containing a book. As the rolls on the left side turned and pulled the piece of paper in the middle, more of the book would be revealed, and one could have several of these books in a single device.

Most accept Micheal Hart's Project Gutenberg as the origin of e-book technology as we know today. Project Gutenberg aimed to digitize publications with expired copyrights in 1972, free of charge (Jin C. H., 2013). Project Gutenberg is still accessible today, and holds 60,000 e-books that has expired copyrights in the U.S. They are accessible for downloading or online reading. It also has a sister website, where independent authors or poets can publish their own books for the readers to access freely.

Technology Acceptance Model

E-books combine the familiar feeling of a reading instrument with today's technological developments. In this aspect, one can argue that traditional books and e-books share the common goal of communicating written works to the recipient (Lam, Lam, Lam, & McNaught, 2009; Elyazgi, Nilashi, Ibrahim, Rayhan, & Elyazgi, 2016). The difference begins in the methodology. Due to e-books being a newer technology than traditional books, Technology Acceptance Model (TAM) has been chosen as the evaluation method due to its robustness in predicting behavioral intention or behavior (Limayem, Hirt, & Chin, 2001).

The basis of TAM is the Theory of Reasoned Action (TRA). TRA was developed by Martin Fishbein and Icek Ajzen in 1967 and explores the relationship within attitude an action. In TRA, actual behaviour is conditioned in behavioral intention, which can be defined as a function of person's attitude and person's subjective norms with varying weights (Ajzen, 1985). TRA is a model that aims to figure out a person's voluntary behaviour by undersanding what causes said person to perform an action (Doswell, Braxter, Cha, & Kim, 2011). In addition, social norms also affect a person's ultimate decision to perform an action of their intention to perform the action; and TRA reasons that action is not performed when there's lack of behavioural intention (Ajzen & Madden, 1986).

22 years later, Davis specialized TRA model for the information systems and replaces some of the attitude measures as provided in Figure 1. In TAM, the preceding factor of behavioural intention, which is attitude, is formulated as a combination of perceived usefulness (PU) and perceived ease of use (PEOU) as well as outer factors. Both are influenced by external variables, and claims that behavioral intention to use is determined jointly by perceived usefulness and attitude towards using. Attitude, combined with perceived usefulness not only affect behavioural intention (BI), but they are also important to reduce user resistance in adoption (Lee, Hsieh, & Hsu, 2011). To paint a brief picture, external variables have affects on PU and PEOU. TAM also assumes that PEOU has an effect on PU, however, vice versa doesn't hold true necessarily (Jin C. H., 2013). PU's and PEOU's increase will increase attitude toward using, which in turn, increases BI, and increased BI results in increased actual system usage (Soto-Acosta, Ramayah, & Popa, 2013).

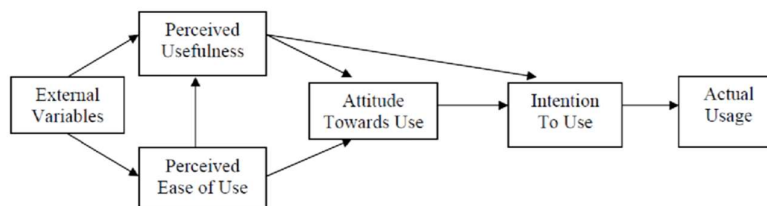


Figure 1. Technology acceptance model (Davis, 1989)

In the further extension of TAM, TAM2, the model includes social influence and cognitive instrumental processed in addition to the simple model; such as subjective norm, voluntariness, image, job relevance, output quality and result demonstrability. (Venkatesh & Davis, 2000). However, this model has been deemed to over-highlight user decisions by some (Agarwal & Karahanna, 2000; Bruner & Kumar, 2005; Gefen & Straub, 2000; Liao & Tsou, 2009).

Conceptual Model and Hypotheses

The external variables vary by the context of the information system that's being observed; different technologies ought to have different variables that affect the outcome. Some variables may affect only PU or PEOU, too. This paper focuses on relative advantage and self efficacy's relation towards PU and PEOU, and assumes e-book anxiety and brand and service trust to be closely related to attitude.

Relative advantage

Relative advantage is defined as “the degree to which an innovation is perceived to be better than the ideas it supersedes” (Rogers, 2003). Compared to the alternatives of e-books, such as traditional books or audiobooks, e-books are assumed to have relative advantage over them. Relative advantage is hypothesised to affect both perceived usefulness and perceived ease of use.

H1: “Relative advantage has a significant positive effect on perceived usefulness.”

H2: “Relative advantage has a significant positive effect on perceived ease of use.”

Self efficacy

There are multiple studies that suggest self-efficacy can affect PEOU (Compeau & Higgins, 1995; Compeau, Higgins, & S.Huff, 1999). Self efficacy is defined as the person’s ability to follow through a pattern of behavior (Bandura, 1997), and has been part of various acceptance models (Davis, 1989). Self efficacy is hypothesised to affect both perceived usefulness and perceived ease of use.

H3: “Self efficacy has a significant positive effect on perceived usefulness.”

H4: “Self efficacy has a significant positive effect on perceived ease of use.”

Perceived usefulness

Davis defines PU as “the degree to which a person believes that using a particular system would enhance his or her job performance.” (Davis, 1989). Perceived usefulness is hypothesised to affect both attitude and behavioural intention.

H6: “Perceived usefulness has a significant positive effect on attitude.”

H10: “Perceived usefulness has a significant positive effect on behavioral intention.”

Perceived ease of use

Davis defines PEOU as “the degree to which a person believes that using a particular system would be free from effort” (Davis, 1989). Perceived ease of use is hypothesised to affect both perceived usefulness and attitude.

H5: “Perceived ease of use has a significant positive effect on perceived usefulness.”

H7: “Perceived ease of use has a significant positive effect on attitude.”

E-book anxiety

This study defines e-book anxiety as hesistance of using e-books or feeling nervous while doing so. Brand and service trust as a cognitive factor is defined as “the degree of influence that company reputation, website quality, and system security have on the behavioral intention of consumers to use e-books” (Tsai, 2012). E-book anxiety can also be consider part of resistance. It is hypothesised to affect attitude.

H8: “E-book anxiety has a has a significant negative effect on attitude.”

Brand service and trust

Brand service an trust in this study measures whether or not consumers are more likely to trust the e-books if they obtain them from reliable sources. Brand service and trust is hypothesised to affect attitude.

H9: “Brand service and trust has a significant positive effect on attitude.”

Attitude

Attitude is widely accepted as one of the major constructs that affect behavioural intention. The original technology acceptance model says that attitude combined perceived usefulness affect behavioural intention.

H11: “Attitude has a significant positive effect on behavioral intention.”

Behavioural Intention

Behavioural intention to use is the step before actual use. This study does not measure actual use, and ends the calculations on behavioural intention. TAM model that’s structured according to the hypotheses is provided in Figure 2.

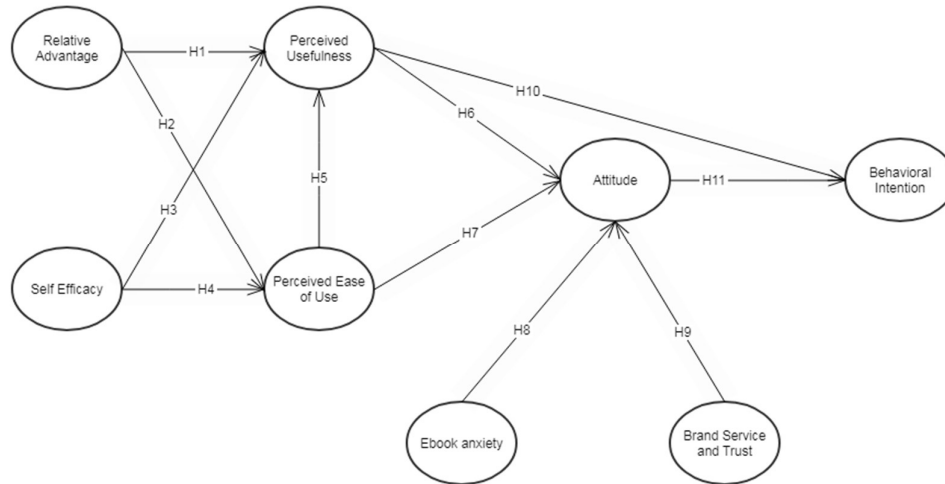


Figure 2. Conceptual model and hypotheses

3. MATERIALS AND METHODS

3.1. Design

This study uses undergraduate students from Istanbul Technical University to test the conceptual model’s hypothesis. Survey was distributed by online channels. The goal is to confirm relative advantage and self efficacy have positive effects on perceived usefulness and perceived ease of use as well as proving e-book anxiety has a negative effect on attitude and brand service and trust has positive effect on attitude. The rest of the hypotheses are proven in the literature and are the basis of the TAM.

Survey is made of three parts. The first part includes a declaration that the given information will not be used for any purposes other than this research and a brief definition of e-book. The second part includes demographic characteristics; such as gender, age, education level, how long the participants have been reading e-books, and a question about the medium used for reading e-books. The third part is made of items of the constructions.

3.2. Data Collection

168 responses in total were received throughout the survey duration. 49.4% of the participants were female and 46.2% of the participants were male. The youngest participant was 16 years old and the oldest was 69, with the average age of 27. 19.6% of the participants had high school diploma, 12.7% had associate degree, 39.2% was undergraduate and 28.5% was post graduate. Of all the participants, 9.5% had less than a year of experience with e-books, 15.8% had between one and three years of experience, 23.4% had between three and five years of experience, and 51.3% had more than five years experience. Approximately 41.1% of the participants prefer tablet as a medium for e-books, 43% prefer e-readers, 68.4% prefer smartphone and 37.4% prefer computer.

3.3. Measurement Development

The items that create the constructs were taken from literature studies. Likert scale was used to rate the items: 1: strongly disagree, 2: disagree, 3: undecided, 4: agree, 5: strongly agree. The 4 items for relative advantage (RA1, RA2, RA3, RA4) and 4 items for self efficacy (SE1, SE2, SE3, SE4) were taken from Jin (2014). 5 items of perceived usefulness (PU1, PU2, PU3, PU4, PU5) were developed by Davis (1985). Perceived ease of use had 4 items (PEOU1, PEOU2, PEOU3, PEOU4) and they were taken from Davis (1985), Davis et. al (1992) and Venkatesh and Davis (2000). E-book anxiety’s 3 items (ANX1, ANX2, ANX3) were adapted from Venkatesh and Bala (2008) and Lee et al (2009). Brand service and trust has 4 items (TR1, TR2, TR3, TR4) and they were taken from Tsai (2012). Attitude has 4 items (AT1, AT2, AT3, AT4) and they were adapted from Venkatesh (2003). And lastly, 4 items of behavioural intention (BI1, BI2, BI3, BI4) were taken from Jin (2014) and Davis (1985). Construct and items are provided in Table 1.

Table 1. Constructs and items

CONSTRUCT	CODES	SOURCE	ITEMS
Relative Advantage	RA1	Jin (2013)	<i>I prefer e-books over paper books.</i>
	RA2		<i>E-books are more efficient than paper books.</i>
	RA3		<i>E-books are more helpful than paper books when doing something or studying.</i>
	RA4		<i>I believe using e-books has a more positive influence on me than using paper books.</i>
Self efficacy	SE1	Jin (2013)	<i>I will get used to obtaining the relevant technology for using e-books.</i>
	SE2		<i>I am able to understand the technical terms involved in e-book usage.</i>
	SE3		<i>I am able to explain the relevant functions of e-books.</i>
	SE4		<i>I am capable of explaining e-book usage to others.</i>
E-book anxiety	ANX1	Venkatesh and Bala (2008), Lee et al (2009)	<i>I have trouble using e-books.</i>
	ANX2		<i>I feel hesitation to use ebooks because I might make mistakes that I might not be able to correct.</i>
	ANX3		<i>I feel apprehensive about using e-books.</i>
Brand and service trust	TR1	Tsai (2012)	<i>I am comfortable with using well-known e-reader brands.</i>
	TR2		<i>I believe the transaction system of e-books is secure.</i>
	TR3		<i>I have confidence in e-books provided by enterprises.</i>
	TR4		<i>I prefer reading e-books purchased from well-known sellers.</i>
Perceived Usefulness	PU1	Davis (1985)	<i>I believe using e-books make my reading behavior more efficient.</i>
	PU2		<i>Using e-books is a convenient reading behavior.</i>
	PU3		<i>Overall, I believe ebooks are useful for me.</i>
	PU4		<i>Using e-books can make my academic and reading behavior more efficient.</i>
	PU5		<i>I expect that using e-books will improve my reading performance.</i>
Perceived Ease of Use	PEOU1	Davis (1985), Davis et. al (1992), Venkatesh and Davis (2000)	<i>Using an ebook is easy.</i>
	PEOU2		<i>I will become skillful at using e-books.</i>
	PEOU3		<i>I think it is easy to learn e-books without spending too much time.</i>
	PEOU4		<i>I find reading to be easy when using an e-book.</i>
Attitude	AT1	Venkatesh (2003)	<i>Using e-books is a good idea.</i>
	AT2		<i>I think it is very convenient to look up information using e-books anytime and anywhere.</i>
	AT3		<i>I like using e-books.</i>
	AT4		<i>I own a device that is an e-reader or can substitute one (Phone, tablet, etc..)</i>
Behavioural Intention	BI1	Jin (2014), Davis (1985)	<i>I want to use the services provided by e-books.</i>
	BI2		<i>I intend to buy or use e-books as much as possible.</i>
	BI3		<i>I have a strong tendency to continue using e-books.</i>
	BI4		<i>I intend to buy or use e-books in the future.</i>

3.4. Data Analysis

Partial least squares structural equation modeling (PLS-SEM) statistical methodology is used to analyse the data. PLS-SEM is a multivariate analysis technique and it has many advantages, and some of these are “it makes no assumptions about the data; it requires no specific distributions for measured variables; it assumes the errors are uncorrelated; it works well with small samples; and it is better suited for analyzing complex relationships and models” (Sternad, Gradisar, & Bobek, 2011). SmartPLS 3.3.3 was used to conduct these calculations.

3.5. Measurement Model

In order to check the reliability and validity, convergent and discriminant validity were used. In order to analyse the data, Cronbach's alpha values, the values of factor loadings, composite reliability and the average variance extracted (AVE) were used. For factor loadings, 0.6 was taken as threshold value. When analysed, 7 of the 32 items (AT4, PEOU4, PU1, PU3, RA1, SE1, TR2) failed to pass the threshold, therefore the model was reconstructed after removing these items. Initial factor loadings are provided in Table 2.

Table 2. Initial factor loadings

ITEMS	AT	BI	TR	ANX	PEOU	PU	RA	SE
ANX1				0.792				
ANX2				0.782				
ANX3				0.615				
AT1	0.81							
AT2	0.891							
AT3	0.858							
AT4	0.502							
BI1		0.81						
BI2		0.84						
BI3		0.883						
BI4		0.829						
PEOU1					0.852			
PEOU2					0.856			
PEOU3					0.564			
PEOU4					0.816			
PU1						0.527		
PU2						0.815		
PU3						0.539		
PU4						0.863		
PU5						0.824		
RA1							-0.212	
RA2							0.791	
RA3							0.804	
RA4							0.85	
SE1								0.586
SE2								0.802
SE3								0.853
SE4								0.758
TR1			0.807					
TR2			0.534					
TR3			0.813					
TR4			0.779					

When analysed again, 2 items (ANX3, PEOU4) failed to pass the threshold again, so they were also eliminated. The model was finalised with 23 remaining items. Model's factor loadings are provided in Table 3.

Table 3. Model's factor loadings

ITEMS	AT	BI	TR	ANX	PEOU	PU	RA	SE
ANX1				0.861				
ANX2				0.897				
AT1	0.828							
AT2	0.916							
AT3	0.861							
BI1		0.81						
BI2		0.844						
BI3		0.883						
BI4		0.825						
PEOU1					0.929			
PEOU2					0.92			
PU2						0.835		
PU4						0.865		
PU5						0.87		
RA2							0.782	
RA3							0.804	
RA4							0.872	
SE2								0.801
SE3								0.873
SE4								0.801
TR1			0.786					
TR3			0.839					
TR4			0.825					

Cronbach's alpha values indicate the degree of consistency, while composite reliability (CR) Cronbach's alpha and composite reliability values, show if the items are valid for measurement of a construct; both of them are required to be above 0.7 (Nunnally, 1978). AVE, which shows the convergence of items, has the threshold of 0.5 (Fornell & Larcker, 1981). Cronbach's alpha, composite reliability and AVE values are provided in Table 4.

Table 4. Cronbach's alpha, composite reliability and AVE values.

ITEMS	CRONBACH'S ALPHA	RHO_A	COMPOSITE RELIABILITY	AVERAGE VARIANCE EXTRACTED (AVE)
Attitude	0.837	0.841	0.902	0.755
Behavioural Intention	0.862	0.866	0.906	0.707
Brand Service and Trust	0.752	0.757	0.858	0.668
E-book Anxiety	0.707	0.716	0.872	0.773
Perceived Ease of Use	0.831	0.833	0.922	0.855
Perceived Usefulness	0.819	0.821	0.892	0.734
Relative Advantage	0.759	0.778	0.86	0.673
Self Efficacy	0.765	0.767	0.865	0.682

After these steps, discriminant validity is evaluated. In order for this to be valid, squareroot of AVE, which stand on the diagonal of the table needs to be the largest in respective rows and columns (Chang, Chou, Yin, & Lin, 2011). Discriminant analysis is provided in Table 5.

Table 5. Discriminant analysis

ITEMS	AT	BI	TR	ANX	PEOU	PU	RA	SE
<i>Attitude</i>	0.869							
<i>Behavioural Intention</i>	0.979	0.841						
<i>Brand Service and Trust</i>	0.733	0.765	0.817					
<i>E-book Anxiety</i>	0.527	0.568	0.431	0.879				
<i>Perceived Ease of Use</i>	0.961	0.925	0.705	0.444	0.925			
<i>Perceived Usefulness</i>	0.862	0.926	0.775	0.583	0.752	0.857		
<i>Relative Advantage</i>	0.529	0.542	0.591	0.217	0.495	0.504	0.82	
<i>Self Efficacy</i>	0.757	0.775	0.708	0.602	0.736	0.759	0.501	0.826

3.6. Hypotheses testing

SmartPLS software was used to conduct the following results and test the validity of hypotheses. According to the results, relative advantage does not have a significant positive effect on perceived usefulness ($p > 0.05$, H1 not supported) but it does have a significant positive effect on perceived ease of use ($p < 0.05$, H2 supported). Self efficacy has a significant positive effect on perceived usefulness ($p < 0.05$, H3 supported), and it has a significant positive effect on perceived ease of use ($p < 0.05$, H4 supported). Perceived ease of use has a significant positive effect on perceived usefulness ($p < 0.05$, H5 supported). Perceived usefulness has a significant positive effect on attitude ($p < 0.05$, H6 supported). Perceived ease of use has a significant positive effect on attitude ($p < 0.05$, H7 supported). E-book anxiety does not have a significant positive effect on attitude ($p > 0.05$, H8 not supported). Brand service and trust has a significant positive effect on attitude ($p < 0.05$, H9 supported). Perceived usefulness has a significant positive effect on behavioral intention ($p < 0.05$, H10 supported). Attitude has a significant positive effect on behavioral intention ($p < 0.05$, H11 supported). Supported and non-supported hypotheses are provided in Table 6.

Table 6. Hypotheses

CODE	HYPOTHESES	SUPPORTED?
H1	<i>Relative advantage has a significant positive effect on perceived usefulness.</i>	No
H2	<i>Relative advantage has a significant positive effect on perceived ease of use.</i>	Yes
H3	<i>Self efficacy has a significant positive effect on perceived usefulness.</i>	Yes
H4	<i>Self efficacy has a significant positive effect on perceived ease of use.</i>	Yes
H5	<i>Perceived ease of use has a significant positive effect on perceived usefulness.</i>	Yes
H6	<i>Perceived usefulness has a significant positive effect on attitude.</i>	Yes
H7	<i>Perceived ease of use has a significant positive effect on attitude.</i>	Yes
H8	<i>E-book anxiety has a significant negative effect on attitude.</i>	No
H9	<i>Brand service and trust has a significant positive effect on attitude.</i>	Yes
H10	<i>Perceived usefulness has a significant positive effect on behavioral intention.</i>	Yes
H11	<i>Attitude has a significant positive effect on behavioral intention.</i>	Yes

4. RESULT AND DISCUSSION

With the recent developments in technology, information and communications technologies became a part of our daily life. While there aren't scientific breakthroughs in e-book technology everyday, it's a stable technology that more people start using every day. With e-books, people can enjoy hundreds of thousands books just on their fingertips. However, as it is with every technology, there's a resistance, too. This paper investigated the possible factors that affect the e-book adaptation in order to prevent implementation failure.

By utilizing TAM, this paper investigates the determinants of attention and behavioral intention. The model presented in this paper includes self efficacy, relative advantage, e-book anxiety and brand and service trust. At the end of the analysis, 9 hypotheses out of 11 of them were supported. Relative advantage is proven to have a significance positive effect on perceived ease of use, while it doesn't have any on perceived usefulness. This means that while being an advantageous choice, e-books still don't ensure usefulness. A possible reason for this is the fact that our sample was mostly consistent of students, and some students gave such a feedback that they prefer traditional books while they study if it's a viable option, especially because it's more troublesome to flip several pages in an e-reader. Self efficacy has a significant positive effect on both perceived usefulness and perceived ease of use; it means people that people find it easier and more useful when they can handle the system on their own. Perceived ease of use has a significant positive effect on both usefulness and attitude. Both perceived usefulness and brand service and trust have a significant positive effect on attitude, but e-book anxiety's negative significant effect on attitude is not proven. And lastly, both attitude and perceived usefulness have a significant positive effect on behavioral intention. It's important to note that this study was conducted in a single country; Turkey. Doing the same study with similar constructs might yield different results, especially if there's significant cultural difference or the sample is chosen differently. It's advised for the upcoming studies to conduct researches with more diverse audiences with various background in order to develop the model further. Further studies will undoubtedly manage to explain the factors affecting e-book usage better.

The effects of self efficacy, relative advantage, e-book anxiety, brand and service trust, PU and PEOU on attitude and behavioral intention to use e-books in Turkey is studied in this paper. The number of questionnaires collected was 168. The proposed model is analyzed with structural equation modeling using partial least squares. The data is analyzed with SmartPLS 3.3.3 software, which is a popular choice in this kind of analyses. As mentioned before, 9 out of 11 hypotheses were supported. Aside from providing theoretical grounds, this study also supplies practical implications for e-books, which is becoming more and more common. This paper is the first study which brings together aforementioned constructs in understanding factors of attitude and behavioral intention of using e-books in Turkey.

REFERENCES

- Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *MIS Quarterly*, 24(4), 665-694.
- Ajzen, I. (1985). From intentions to actions: A theory of planned behaviour. Springer.
- Azjen, I., & Madden, T. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology*, 22(5), 453-474.
- Bagozzi, R. P. (2007). The Legacy of the technology acceptance model and a. *Journal of the Association for Information*, 8(3).
- Bandura, A. (1997). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Reports*, 84(2), 191-215.
- Brown, B. (1930). *The Readies*. Rice University Press.
- Bruner, G. C., & Kumar, A. (2005). Explaining consumer acceptance of handheld internet devices. *Journal of Business Research*, 58(5), 553-558.
- Bryson, A. (2014). *Medieval Studies and the Computer*. Elsevier Science.
- Chang, M. Y., Chou, W. H., Yin, C. P., & Lin, C. I. (2011). ERP post-implementation learning, ERP usage and. *The PACIS 2011 proceedings*. Brisbane, Queensland.
- Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19(2), 189-211.
- Compeau, D., Higgins, C. A., & S.Huff. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly*, 23(2), 145-158.
- Davis, B. W. (1989, August). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, s. 982-1003.
- Doswell, W., Braxter, B., Cha, E., & Kim, K. (2011). Testing the Theory of Reasoned Action in Explaining Sexual Behavior Among African American Young Teen Girls. *Journal of Pediatric Nursing*, 26(6), 45-54.
- Elyazgi, M. G., Nilashi, M., Ibrahim, O., Rayhan, A., & Elyazgi, S. (2016, January 10). Evaluating the Factors Influencing E-book Technology Acceptance. *Journal of Soft Computing and Decision*, s. 11-25.
- Falcone, J. (2012, December 17). Kindle vs. Nook vs. iPad: Which e-book reader should you buy? CNet: <https://www.cnet.com/news/kindle-vs-nook-vs-ipad-which-e-book-reader-should-you-buy/>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Gardiner, E. a. (2010). *The Oxford Companion to the Book*. Newyork: Oxford University Press.
- Gefen, D., & Straub, D. (2000). The relative importance of perceived ease-of-use in IS adoption: A study of e-commerce adoption. *Journal of AIS*, 1(8), 1-28.

- Guillermo, G. (2013, January 25). Doña Angelita, la inventora gallega del libro electrónico. Fundación Española para la Ciencia y la Tecnología.
- Jin, C. H. (2013). The perspective of a revised TRAM on social capital building: The case of Facebook usage. *Information Management*, 50(3), 162-168.
- Jin, C.-H. (2014, November 20). Adoption of e-book among college students: The perspective. *Computers in Human Behavior*, s. 471-477.
- Jin, C.-H. (2014). Adoption of e-book among college students: The perspective of an integrated TAM. *Computers in Human Behavior*, 471-477.
- Kim, H., & Kankanhalli, A. (2009). Investigating User Resistance to Information Systems. *MIS Quarterly*, 33(3).
- Lam, P., Lam, S. L., Lam, J., & McNaught, C. (2009). Usability and usefulness of e-books on PPCs. *Australasian Journal of Educational Technology*, 30-44.
- Lee, H. Y., Hsieh, Y. C., & Hsu, C. N. (2011). Adding innovation diffusion theory to the technology acceptance model: Supporting employees' intentions to use e-learning systems. *Journal of Educational Technology & Society*, 14(4), 124-137.
- Liao, C. H., & Tsou, C. W. (2009). User acceptance of computer-mediated communication: The SkypeOut case. *Expert Systems with Applications: An International Journal Archive*, 36(3), 4595-4603.
- Limayem, M., Hirt, S. G., & Chin, W. W. (2001). Intention does not always matter: the contingency role of habit on IT usage behavior. *The 9th European Conference on Information Systems* (s. 274-286). Bled: Global Co-Operation in the New Millennium.
- Nunnally, J. (1978). *Psychometric theory*. McGraw-Hill.
- Rogers, E. M. (2003). *Diffusion of innovations* (5. ed.). New York: NY: Free Pass.
- Soto-Acosta, P., Ramayah, T., & Popa, S. (2013). Explaining intention to use an enterprise resource planning system: a replication and extension. *Tehnički vjesnik*, 20(3), 397-405.
- Sternad, S., Gradisar, M., & Bobek, S. (2011). The influence of external factors on ERP acceptance. *Industrial Management & Data Systems*, 111(9), 1511-1530.
- Tsai, W.-C. (2012). A study of consumer behavioral intention to use e-books: the Technology Acceptance Model Perspective. *Innovative Marketing*, 8(4), 55-66.
- Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 186-204.