USER ACCEPTANCE OF E-BOOKS: THE EFFECT OF PERCEIVED BARRIERS, READING HABIT AND ENVIRONMENTAL CONSCIOUSNESS

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Abstract

Reading habits and reading material access have changed dramatically in a digital world. The intention to use e-book has been widely explored. This study proposes a casual model that explores how perceived barriers and reading habit influence users' intention to use e-books. This study extends previous theories: The Technology Acceptance Model and Theory of Planned Behavior by adding environmental consciousness, reading habit and perceived barriers to helps one to better understand what factors affect usage of e-books. The expected findings will outline and describe how dominant factors affect attitudes towards e-book usage, and in turn, affecting intention to use e-books. By considering factors such as perceived ease of use, perceived usefulness, reading habit, etc. practitioners can enhance e-book experience to attract customers. To the best knowledge of the author, this study adds value to the existing literature as it is the first study which examines how perceived barriers affect users' acceptance. It also extends limited literature of e-book usage in developing countries.

Keywords: *E-book usage, user acceptance, Technology Acceptance Model, Theory of Planned Behavior*

1. Introduction

This section introduces the background, research gap, and objectives of the study.

1.1. Research background

E-book are defined as electronic versions of books that can be viewed on a computer screen or on hand-held devices such as personal digital assistants (PDA), tablets and mobile phones (Lam and McNaught, 2009). Although e-books were first introduced to the market in the 1990s, its market received little attention until 2005. It started booming from 2007 onwards. Gaurav et al. (2011) classified into e-books into hardware dependent (such as Kindle, Nook) and hardware independent e-books which can be accessed via any computer using an Internet browser. Embong et al. (2012) further clarified this concept by claiming

there are three basic components of e-books: hardware or reader, software and the e-book files. Hardware based e-book readers are portable electronic devices designed mainly for the aim of reading e-books or any forms of publications. Software based e-book readers are programs that support the display of an e-book on the device, for example, Adobe Acrobat Reader, Foxit Reader. Software e-book readers enable the access on personal computers or any latest computer technologies (Pereus, 2000). E-books, regardless of hardware or software based provide a novel way of reading for people. It is appealing because of the seven unique characteristics: (1) adjustable format and text size, (2) purchases can be competed in a few minutes, (3) quick search functions, (4) a built-in dictionary that can facilitate connection to other information, (5) marketing and editing tools which can also act as a bookmark, (6) adjustable backlighting; and (7) high portability (Burk, 2001). Gunter (2005) postulated some difficulties of moving from paper based to e-book. This includes a limited sense of one's place in the book, absence of highlight and/or bookmark tools as well as eye fatigue associated with reading texts on screen for an extended period of time. The two former obstacles have been solved by advanced features of e-book while the latter remains debatable.

In Vietnam, the digital publishing industry is far from taking off. According to industry statistics, in 2017, 26,000 books were published in forms of hardcovers and paperbacks but only 137 of them were converted to appropriate e-book. Although Vietnamese people have a high Internet and smartphone penetration rate, none of publishers and book distributors have launched reading app where people can purchase and read e-books (Kozlowski, 2018). The number of published e-books has seen a downward trend for the period 2015 - 2017 (Waka, 2017). However, the number of copyrighted e-book increases by 106.1%, faster than non-copyrighted e-book (15.4%), showing those readers are more conscious of reading copyrighted e-books.

1.2. Research gap

Studies on intentions to use e-book could be split into two streams in which one focused on e-book reading devices (Lai and Chang, 2011; Park et al., 2015) and the other one revolved around e-book in general (Gaurav, 2011; Cumaoglu, 2013). Several theoretical models were employed to understand the acceptance of new technology, namely, the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), Technology Acceptance Model 2 and Unified theory of acceptance and use of technology (UTAT) (Maduku, 2015). Previous literature has established the link between intention to use e-book and technological factors (Cumaoglu et al., 2013; Lai and Chang, 2011), social factors (Maduku, 2015) and human factors (Gaurav, 2011). Some researchers studied e-book usage in a specific setting such as e-library (Hoang and Nguyen, 2018), e-book store (Huang et al., 2016). Although some studies acknowledged intention to use e-book can vary from type to type of e-book, most of studies chose to focus on e-textbook and approach e-book from students' point of view with regards to reading for study only (Mohammed, 2014).

In spite of the considerable amount of volume of research in this area, much remains to be understood the relationship between motivators to use e-book and other types of e-book, such as leisure reading. Although students' perception of e-book usage side effects and preference for e-book have been researched (Jeong, 2010), none statistical studies have been done to examine the effect of perceived barriers on intention to use e-book. Recent studies have attempted to relate e-book usage to users' experience but these are done separately in experimental design. The effect of habit has been proved to be positively associated with the intention to use technological products (Mutambayashata, S., and Makanyeza, C., 2017; Venkatesh et al., 2012). However current literature has neglected the influence of habit to use the alternative on behavioral intention to accept an innovative product. Also, previous research on the influence of habit on e-book usage has focused on prior one - time experience rather than an automatic learning process (Gaurav, 2011).

1.3. Theoretical background

Of the conceptual framework to study the adoption of information technology, the TAMs (Davis, 1989; 1993) is a widely used and fairly successful research model. TAM explains the behavior of an individual adopting information technology will be determined by two specific beliefs: perceived usefulness (PU) and perceived ease of use (PEO). Perceived usefulness refers to the potential user's subjective likelihood that the use of a certain system will improve his/her action. Perceived ease of use is defined as the degree to which the potential user expects the adoption of technology is effortless. TAM was developed based on Theory of Planned Behavior, proposed by Ajzen (1985) which explains behavioral intention and actual behavior adoption are determined by three main factors, namely, attitude, subjective norms and perceived behavioral control. This study focuses on purchase intention rather than behavior, because intention has wider implications and will often have a positive impact on an individual's action.

1.4. Study objectives

The study aims to use the TAM and TPB as the basis for its model of user acceptance of e-book, and expands it by including the following specific factors:

- Habit to read print - book, as proposed by Venkatesh et al., 2012
- Perceived barriers, as operationalized from perceived control behavioral component of TPB
- Environmental consciousness, as proposed by Dunlap et al., 2000

Another aim of this study is to examine whether intention to use e-book would be different among main types of e-book.

2. Method

This section describes the methodology of the study, which covers the development and approach of Research model and hypotheses.

2.1. Research model and hypotheses development

Perceived usefulness, perceived ease of use, attitude and intention to use e-book

The influence of perceived usefulness and perceived ease of use on intention to use advanced technology has been tested with regards to a wide variety of digital products, for instance, e-commerce (Gefen et al., 2003), mobile plastic money (Mutambayashata, 2017), broadband internet (Oh et al., 2003). E-book readings can be compared with physical book readings, revealing that e-books accommodate readers with more advantages than physical books, for example, portability, readability and accessibility. Readers can enjoy convenience of accessing to their desired books anytime and anywhere (Chen, 2015). Existing literature has provided empirical support for the influence of perceived usefulness and perceived ease of use on intention to adopt e-book (Maduku, 2015; Lai and Chang, 2011). Nicholas et al., (2010) claimed that convenience and ease of access are two main reasons accounting for the increasing popularity of e-book. Readers can intuitively use their mice or fingers to turn pages on computer monitors or tablets, reducing the complexity of e-book readings. Chen (2015) in his study concluded that technological factors of e-book positively increased attitude towards reading e-book. Thus, we propose the following hypotheses:

H_1: Perceived usefulness of e-book is positively correlated with attitude towards using e-book

H_2: Perceived ease of use of e-book is positively correlated with attitude towards using e-book

Triandis (1971) defines attitude as individual characteristics which portrait either positive or negative behavior or reflection of feeling and knowledge to certain concept or subject. Attitudes consist of three components, such as affect, cognition and behavior which refer to people preferences level, person's knowledge about the attitudinal object and reactions and intention regarding the object respectively. According to the Theory of Planned Behavior, positive attitude strengthens consumers' intention to use. This has been confirmed in a wide range of technology related studies (Rupak et al., 2014; Hussein, 2015). We propose a similar hypothesis in the context of e-book reading as follows:

H_3: Attitude towards using e-book is positively correlated with intention to use e-book

Environmental consciousness, attitude and intention to use e-book

Environmental consciousness is the attitudinal dimension of environmental friendly behavior. People with a high level of environmental consciousness are more willing to take measures to prevent the exploitation of the environment, and actively look for ways for the environmental continuity (Bansal, 2011). Most of the papers are made up by tree fibers. Thus, e-book usage could be seen as an action to prevent the exploitation of the environment because it saves trees and eco-friendly (Chu et al., 2003; Jamali et al., 2009). Gaurav (2011) found that consumers with a high level of environmental consciousness will have a positive preference for printed books and positively associated with the perceived positive

navigational design of e-books. They, therefore, would have a positive attitude towards the use of e-book. Thus, the following hypothesis is proposed:

H_4: Environmental consciousness is positively correlated with attitude towards e-book usage

Social influence and attitude towards e-book usage

Social influence is defined as "the degree to which an individual believes he or she should use the new system" (Venkatesh et al., 2003). It is comparable to subjective norm in Theory of Planned Behavior. Current literature on the topic suggests that social influence will positively influence attitude towards e-book usage. In a collectivistic country like Vietnam, consumers' attitudes towards a behavior are likely to be influenced by members in their social groups. Stone and Baker (2013) reported that students are likely to be influenced by their parents, classmates and professors' perspective on their usage of e-book in term of verbal advices. Thus, the following hypothesis is proposed:

H_5: Social influence is positively correlated with attitude towards e-book usage

Habit to read print book and attitude towards e-book usage

Habit is defined as the degree to which an individual behaves in a certain manner automatically as a result of unaware learning process (Venkatesh et al., 2012). The influence of habit on consumer behavior regarding e-book usage has been studied with regards to actual previous usage of e-book for reading in the past. Holak and Lehman (1990) argued that when the innovative products are consistent with the previous usage habit of consumers, consumers will then are more willing to accept and adopt innovative product. Past use is used as a proxy for habit. Harsono and Suryana (2014) in their study on the adoption of plastic money proposed that the level of familiarity of customers with a product positively affects their behavioral intention. Gaurav (2011) attempted to study the effect of habit on e-book preference in form of one time prior usage only. Past repeated usage habit is left unexplored. As consumers will face the choice between print book and e-book, those with a high level of print - book reading habit will be more likely to reject e-book usage. Thus, we propose the hypothesis:

H_6: Habit to read print book is negatively correlated with attitude towards e-book usage

Perceived barriers and attitude towards e-book usage

Existing literature has debated on the effect of the display technology on visual fatigue (Benedetto et al., 2013). Reading habit is usually investigated with a focus on processing of words, visibility, legibility and other comprehension level. Jeong (2010) in his study on sixth - grade students found that students performed better with print books than with e-books. A possible explanation for this is reading on a screen may require more concentration than on paper, and e-book reading is more prone to error than print book reading. The relationship between reading comprehension, eye fatigue and perception of e-books in this study remains pure conjecture, calling for a more comprehensive view of perceived difficulties associated with e-book reading. Perceived barriers are introduced as

operationalized from perceived behavioral control but with a wider meaning. Perceived behavioral control refers to the person's belief that a particular behavior is under his or her control. Perceived behavioral control is usually assessed by the ease or difficulty of the behavior. Perceived barriers refer to the difficulties in the control of behavior that may discourage people to engage in e-book usage. Based on the result of an explosive qualitative interview, perceived barriers have three sub-constructs:

(1) Hedonic feelings from physical touch with print book,

(2) Perceived distraction because readers may jump from meme to meme and link to link, checking social media notifications constantly,

(3) Perceived health concern which is not only limited to eye fatigue but also includes a higher level of stress, a disruption of sleep patterns

As these barriers demotivate people from using e-book, the following hypothesis is built:

H_7: Perceived barriers are negatively correlated with e-book usage

2.2. Research Approach

This study will use the quantitative approach to study the effect of habit to read print book, environmental consciousness and perceived barriers on e-book usage on the basis of Technology acceptance model and Theory of planned behavior.

Data collection and sampling

This study will form a sample of students based on convenience sampling. The study aims to reach real e-book user in order to generate reliable results. The quantitative survey will be conducted in both online and offline setting. In the online setting, students who agree to participate in the study will be given a link with the instruction to participate in the survey. The survey will ask students what kind of e-book they usually read, their demographic information, their perception of e-book and intention to use e-book. The type of e-book will be divided into three types: textbook, soft-skill, and romance/comics because these are three most read types of e-book in Vietnam (Waka, 2017).

Measurements

This study recasts items selected for measuring the constructs from previous inventories. The dimension of perceived usefulness and perceived ease of use were referenced from Davis et al. (1989) for the e-book context. Items for measuring environmental consciousness were derived from prior research (Gaurav, 2011) with a minor adjustment to see whether students are aware of environmental benefits associated with the use of e-book. Habit to read print book is measured by previous literature from Venkatesh et al. (2012). The dimension of social influence is reference from Al Imarah et al. (2013) and Venkatesh et al. (2011). Scale items to measure perceived barriers are developed from prior explorative qualitative interview, including: hedonic feelings associated with physical touch with print book, perceived distraction, perceived health concerns.

3. Results

Based on the rationale of these above hypotheses, a potential model can be established as the following to test all mentioned hypotheses:
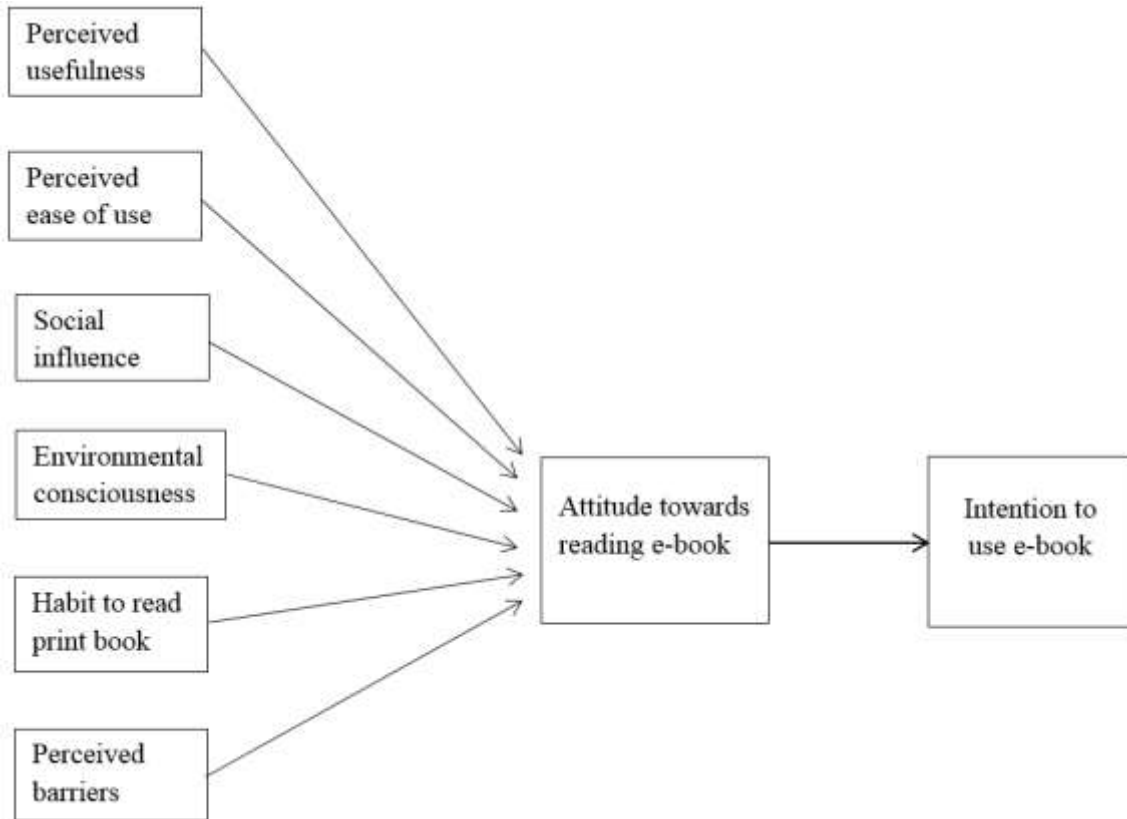
H_1: Perceived usefulness of e-book is positively correlated with attitude towards using e-book

H_2: Perceived ease of use of e-book is positively correlated with attitude towards using e-book

H_3: Attitude towards using e-book is positively correlated with intention to use e-book

H_4: Environmental consciousness is positively correlated with attitude towards e-book usage

H_5: Social influence is positively correlated with attitude towards e-book usage

H_6: Habit to read print book is negatively correlated with attitude towards e-book usage

H_7: Perceived barriers are negatively correlated with e-book usage

4. Discussion and Conclusion

4.1. Discussion

Significance of the study

Identification of factors affecting e-book usage behaviors will enable a more robust understanding of attitudes toward e-book and will be helpful to publishers in making

decision whether they can produce e-book hardware and software which can meet what customers are looking for. By focusing on e-book adoption characterized by type of e-book, results of the research may help to fill a gap on this under-researched field.

Implication

The study also has a practical implication because it will provide insight into students' perception of e-book and give recommendations to digital product designers or publishers, educators on what can do to promote e-book usage.

4.2. Conclusion

To conclude, the purpose of this study is to examine the effect of environmental consciousness, habit to read print book and perceived barriers on user acceptance of e-book. Theory of planned behavior and technology acceptance model are deployed to test seven hypotheses.

This research contributes to the current literature in two ways. First, to the author's best knowledge, it is the first research to study the perceived barriers which influence students' intention to use e-book. Second, it complements existing literature by examining whether readers' intention to use e-book differs among type of e-book.

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