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Empirical Analysis of Factors Affecting the E-Book Adoption—Research Agenda

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Abstract

Advances in information technology encourage the development of e-books. The 2010 Horizon Report predicts that e-book will be one of the six technologies most likely to affect higher education in coming years. Despite the huge investment in developing the e-book market, customer take-up over the past decades is still far below expectations. The success of e-book adoption depends on the implementation of an educational model that addresses learner needs as well as content relevance. To understand customer behavior intention in adopting e-books and to address the lack of holistic approach in adoption research, this project is proposed to investigate the intention of college students in using e-books. This cross-sectional research utilizes the Technology Acceptance Model (TAM) and four additional variables, namely, personal innovativeness of information technology, social influences, perceived costs, and environmental consciousness. The study is expected to contribute to the literature by providing an empirically validated extended TAM regarding e-books. Moreover, the results will provide important and useful information for academicians and publishers.

Keywords

Ebook, Higher Education, Extended Technology Acceptance Model

1. Introduction

Electronic-book (e-book) is a generic term that refers to the digital representation of printed material delivered through mediums such as personal computer, netbook, e-book reader, PDA, smart phone, and iPad [1] [2]. E-book content primarily includes books, journals, and magazines. Most e-books have features like within-book or within-collection searching, bookmarking, highlighting, note taking, and annotating [3].

Since the introduction of the e-book in the 1970s, its appearance has significantly changed because of new technologies, keen market competition, and ever-changing needs of readers. The entry of e-books into the education sector led to a growing concern among publishers, academicians, and students. For instance, publishers, such as McGraw Hill and Wiley, compete with each other to sell their titles as e-books [1]. While competition intensifies among e-book publishers, concurrent efforts enhance e-book service quality and lower selling prices, as evidenced by technological developments such as advanced e-book reading devices and internet connectivity. However, in spite of the huge investments in e-book markets, customer take-up has been slower than expected

[1]. In 2009, the sales of e-books constitute only 3% to 5% of total sales revenue [1].

Nowadays, academicians have a clear and emerging desire to provide quality teaching and learning in a more cost-effective and innovative manner by taking advantage of the rich media and the access to information provided by the Internet. For instance, many academicians upload e-book links to their e-learning platform to provide comprehensive reference materials to students. Moreover, today's students are becoming more technologically savvy. Since they grew up with digital devices, students aspire to integrate more technology into their academic study [1].

The 2010 Horizon Report predicts the e-book will be one of the six technologies most likely to affect higher education in the next two to three years [4]. The emergence of e-books leads to the following impacts to teaching and learning:

1) Teachers will be under increasing pressure from students to switch to e-books for their courses because of its comparatively lesser cost. Moreover, e-books are more "green conscious" [5].

2) Micro-content will become the trend. Micro-content refers to individual articles and single chapters of individual works, rather than entire books [6].

3) The barrier to entry for creating and distributing e-book content will lessen. More teachers and communities will create their own e-book content that best meets the needs of their courses and students [7].

4) Student reading experience will be enhanced because more publishers will offer multimedia content in e-books [8].

5) Student learning efficiency will be improved because with e-books, students can find relevant content faster by simply searching for keywords. In addition, they can use e-books anytime and anywhere. Consequently, the amount of time and effort to accomplish the course tasks (e.g., research papers and classroom preparation) will be minimized, while the number of physical visits to the library will be reduced.

Currently, many e-books in the market still stem from a model that simply translates textbooks into digital files, and made available via the internet in the form of Portable Document Format (PDF) or Hypertext Markup Language (HTML). Obviously, e-books are still in the pre-mature stage. The market for e-books is in its developmental process [9]. The low uptake of e-book continues to rouse the interests of publishers and academicians [10] [11]. The success of e-book adoption largely depends on the implementation of an educational model that addresses the learner needs as well as the content relevance of the e-book for a particular course.

Designing a good e-book is a complicated task and requires a complete list of user requirements in terms of design features and course contents. Hence, understanding consumer behavioral intention to use e-books is a key issue worth looking into because behavioral intention is an individual's subjective probability of performing a specific behavior, and is the major determinant of actual usage behavior [12]. Moreover, the willingness of consumers to use e-books can substantially increase revenue. In this connection, there is a need to research the factors that affect the adoption of e-books by taking into account existing technology adoption models [3].

2. Literature Review

This study investigates consumer behavioral intention in using e-books. Among the several theoretical perspectives to address IT adoption and usage, the Technology Acceptance Model (TAM) is widely regarded as a parsimonious model with high explanatory power of variance in user behavioral intention related to IT adoption, and usage across a wide variety of context such as information systems, personal computers, e-banking, mobile technology, web browsers, web retailing, and online purchase intentions [13] [14]. However, there is scant research on the investigation of the factors affecting e-book adoption using TAM.

TAM is rooted in the theory of reasoned actions, in which a model suggests that beliefs influence attitudes, which influence intention, and thus generate behaviors [15]. In TAM, explanations of why users behave in particular ways toward IT predominantly focus on instrumental beliefs, such as perceived usefulness and ease of use as drivers of usage intentions. Prior work related to TAM, however, suggests that holistic experiences with technology as captured in constructs, such as personal innovativeness of information technology [16], perceived costs [17] [18], environmental consciousness, and social influence [19], are potentially important explanatory variables in technology acceptance. Factors influencing the intention to use technology may vary, while the degree of influence of the same factors may differ with the different stages of adoption [20].

To understand customer behavior intention to adopt e-books and the lack of holistic approach on the subject, this project investigates the intention of college students in using e-books as learning materials. This study will

use TAM as well as four additional variables, namely, personal innovativeness of information technology, social influences, perceived costs, and environmental consciousness. Specifically, the objectives are to:

1) investigate the intention of adopting e-books of college students in Hong Kong
2) identify the factors that influence the intention of students in adopting e-books
3) create a model of the student intention of e-book adoption by using structure equation modeling (SEM).

3. Research Method

This research is a cross-sectional study. The unit of analysis is individual. A quantitative approach confirms the validity of the constructs in the proposed research model (see **Figure 1**) and hypotheses (see **Table 1**). Research participants are business students of the Hong Kong Community College. The sample size is approximately 200. Participation in the survey is voluntary, and identities of participants will remain confidential. Empirical data will be collected through on-line and hard copy questionnaires. Instrument items will be adapted mainly from prior research, and slightly refined to make them relevant to the present study. Partial Least Squares (PLS) will be used for testing the measurement and structural models.
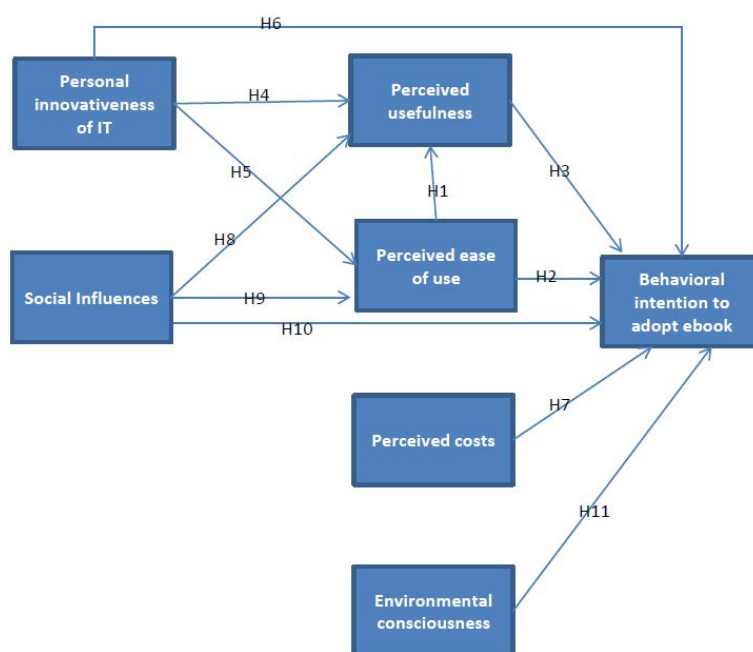
Figure 1. Proposed research model.

Table 1. Hypotheses of the study.

H1	Perceived ease of use has a direct positive impact on perceived usefulness of e-books.
H2	Perceived ease of use has a direct positive impact on behavioral intention to adopt e-books.
H3	Perceived usefulness has a direct positive impact on behavioral intention to adopt e-books.
H4	Personal innovativeness of IT has a direct positive impact on perceived usefulness of e-books.
H5	Personal innovativeness of IT has a direct positive impact on perceived ease of using e-books.
H6	Personal innovativeness of IT has a direct positive impact on behavioral intention to adopt e-books.
H7	Perceived costs have a negative impact on behavioral intention to adopt e-books.
H8	Social influences have a direct positive impact on perceived usefulness.
H9	Social influences have a direct positive impact on perceived ease of use.
H10	Social influences have a direct positive impact on behavioral intention to adopt e-books.
H11	Environmental consciousness has a positive impact on behavioral intention to adopt e-books.

4. Impact of the Study

This study is expected to contribute to the literature by:

1) bridging the knowledge gap through adopting a holistic approach in investigating student intention on e-book adoption,

2) empirically validating the proposed research model based on college students in Hong Kong; and

3) providing insights into the theoretical aspects of TAM regarding e-books

This study is also expected to contribute to the practice in the following ways:

1) Tertiary education sector: The findings provide better understanding on student behavior intention to adopt e-books.

2) Publication sector: The findings provide insights and useful directions to practitioners in formulating appropriate business plans, pricing strategies, and product designs to attract more e-book customers, and generate more revenue.

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