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The effect of personal and situational factors on LIS students' and professionals' intentions to use e-books

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ABSTRACT

Due to the growth in both the number and use of e-books, the question arises as to which factors may influence information professionals and library and information science (LIS) students when considering adopting e-books in their organizations. This study uses the technology acceptance model (TAM), a well-known theory for explaining individuals' technology behaviors, and cognitive appraisal theory as theoretical bases from which to predict factors that may influence information professionals and LIS students in their adoption of e-books in their organizations. This study explored two main themes: whether there are differences between information professionals' and LIS students' perspectives towards e-books, and to what extent the TAM, as well as other personal characteristics such as threat, challenge, and motivation, explain information professionals' and LIS students' perspectives. Researchers used questionnaires to gather data on computer competence, attitudes to ebooks, motivation, and cognitive appraisal. Findings reveal that there are major differences between the two groups concerning computer competence, motivation, and challenge. In addition, the TAM, as well as other personal characteristics, can predict the likelihood of e-book adoption, and highlights the importance of individual characteristics when considering technology acceptance.

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1. Introduction

Technological advances have changed individuals' reading experiences and e-books are becoming a popular platform for delivering reading materials. According to the [Pew Research Center \(2012\)](#), digital reading has gone viral and one in five Americans has read an e-book within the past year, whether on an e-reader, tablet, computer, or cellphone. Further, 28% of Americans own at least one device for e-reading. The average reader of e-books read 24 books in the last year, compared with 15 books read by those who read only print. [Vassiliou and Rowley \(2008\)](#) suggest that an e-book is a digital object with traditional book-like characteristics that can be used in an electronic environment, with properties such as: search ability, links, and annotations. The launch of the Kindle, a portable reader, by Amazon in 2008 has caused much interest in e-books and during the Christmas shopping of 2009, its e-book sales outpaced those of printed books ([Allen, 2009, December 28](#)). According to the Association of American Publishers (as cited in [Indvik, 2010, October 15](#)), e-book sales increased by almost 200% in 2010 when compared to 2009; in August, 2012, Amazon.co.uk announced that sales of its Kindle e-books were outstripping sales of printed books ([Malik, 2012, August 5](#)).

2. Problem statement

Due to the growth of both the number and use of e-books, the question arises regarding which factors may influence information professionals and library and information science (LIS) students when considering adopting e-books within their organizations. This question is important because researchers assume that both sectors should be early adopters of new technologies and may serve as gatekeepers to technological innovations. This study seeks to explore whether the LIS community, consisting of information professionals and LIS students, is familiar with these particular technological innovations and whether its members are ready to accept them in their organizations. Do they understand the power of e-books in their information centers? Are they ready to adopt new tools? Although some studies have focused on e-books, none has integrated various sections of the LIS community by focusing on information professionals' and LIS students' intentions to use e-books in workplaces. This aspect is important as recent studies have presented differences between these two professional groups concerning adoption of technological innovations such as: mobile libraries ([Aharony, 2014](#)) and Facebook use ([Aharony, in press](#)). This study uses an extended version of the technology acceptance model (TAM), a well-known theory for explaining individuals' technology behaviors ([Davis, 1989](#); [Morris & Venkatesh, 2000](#)). One criticism of the TAM is that it focuses mainly on cognition and neglects the influence of emotion on technology adoption ([Kulviwat, Bruner, Kumar, Nasco,](#)

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& Clark, 2007). Therefore, the current research includes external variables that can be considered as the bridge between internal beliefs, attitudes, and intentions mentioned in the TAM, and individual differences that may affect users' technology acceptance behavior (Davis, Bagozzi, & Warshaw, 1989). The external variables used in the present study are the characteristics of threat and challenge that are part of Cognitive Appraisal Theory (Lazarus & Folkman, 1984), and the emotional aspect of motivation. The objectives of this study were to examine: (a) if there are differences between information professionals' and LIS students' intentions to use e-books, (b) to what extent does the TAM explain information professionals' and LIS students' intentions to use e-books, (c) to what extent do characteristics such as cognitive appraisals explain information professionals' and LIS students' intentions to use e-books, and (d) to what extent do differences in computer competence and motivation explain information professionals' and LIS students' intentions to use e-books. The research may contribute to the theoretical understanding of variables that influence information professionals' and LIS students' intentions to use e-books and may lead to further inquiry in this field.

3. Literature review

3.1. Adoption and use of e-books

Several studies have considered e-book readers. van der Velde and Ernst (2009) claim that e-books are still in their infancy and that people should get accustomed to them. Chen (2003) found that readers prefer printed books for reading and study and e-books for pleasure and navigation. Other researchers (Brown, 2001; Burk, 2001) explored the advantages and disadvantages of e-book readers. Focusing on factors which cause users to use e-book readers, Lai and Chang (2011) suggested that convenience, compatibility, and media richness contribute to e-book reader acceptance.

Other studies were conducted that concentrated on students' perceptions towards e-books. Clark, Goodwin, Samuelson, and Cocker (2008) assessed user perceptions and use of the Kindle via focus groups in an academic environment. In another study, Clark (2009) delved into the assimilation of an e-book lending program at a university library. Shepperd, Grace, and Koch (2008) found that 90% of students preferred printed textbooks to electronic books, even though they were more expensive. A similar result was found by Woody, Daniel, and Baker (2010), who noted that students preferred printed books over e-books for learning. Another aspect of such research was presented by Pattuelli and Rabina (2010), who investigated Kindle use among library and information science students and found that the portability of the device and its convenience of use enhanced students' reading experience. Therefore, it seems that there is no overall agreement concerning e-book adoption.

3.2. TAM

The technology acceptance model (TAM) is a well-known model for predicting information systems use (McGill & Bax, 2007). It was created by Davis (1989) and grounded in the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975). According to the TRA, an individual's behavior is associated with his beliefs, attitudes, and intentions to perform that behavior. Thus, these factors affect an individual's intention to perform a certain action. The TAM refines the TRA and focuses on two main variables: perceived usefulness (PU) and perceived ease of use (PEOU) as factors that influence one's attitude towards using a certain technology. Perceived usefulness is regarded as the degree to which an individual believes that using a particular technology would enhance his or her job performance (Davis, 1989). Perceived ease of use addresses the degree to which a person assumes that using a certain technology would be free of effort. Davis proposes that these two factors may predict an individual's information technology acceptance. According to Davis,

one's acceptance of an information technology depends on beliefs about the usefulness and ease of use of the technology, which in turn influence attitudes and intentions towards using a certain technology.

Numerous studies have examined the TAM. Several meta-analyses (King & He, 2006; Ma & Liu, 2004) and review articles (Legris, Ingham, & Colletette, 2003; Turner, Kitchenham, Brereton, Charters, & Bugden, 2010) have addressed the importance of the model for understanding the process of information technology (IT) acceptance. Some have focused on users' acceptance of e-mail, word processing, the web, and instant messaging (Davis, 1989; Davis et al., 1989; Davis & Venkatesh, 1996). Others explored the TAM in corporate environments (Gefen & Straub, 1997; Igarria, Gumaraes, & Davis, 1995) and in web shopping (Chang, Kim, & Oh, 2002; Koo, 2003). In education, the TAM was used to examine students' attitudes towards e-learning acceptance (Park, 2009; Park, Nam, & Park, 2008), and towards m-learning (Aharony, 2012; Jairak, Praneetpolgrang, & Mekhabunchakij, 2009). Several studies examined the model within the library arena and, in particular, applied it to acceptance of digital libraries (Park, Roman, Lee, & Chung, 2009; Thong, Hong, & Tam, 2002). Others investigated the LIS community perspectives of technological innovations in their workplaces (Aharony, 2014, in press). This study explores the TAM in a new context: LIS community and e-books.

3.3. Personal innovativeness

Another variable that may predict respondents' intentions to use e-books is personal innovativeness, a construct that potentially affects how people respond to innovations (Jeong, Yoo, & Heo, 2009). Personal innovativeness is a well-known concept in innovation diffusion research in general (Agarwal & Prasad, 1998; Lu, Yao, & Yu, 2005), and especially in the domain of marketing (Midgley & Dowling, 1978; Flynn & Goldsmith, 1996). Agarwal and Prasad (1998) suggested that personal innovativeness is a construct that may help identify individuals who would adopt technology innovations earlier than others. They also coined the term PIIT (personal innovativeness in the domain of information technology) and defined it as the willingness of individuals to try out any new information technology. According to Agarwal & Prasad, PIIT is considered as a relatively stable descriptor of individuals across various situations.

3.4. Cognitive appraisal: threat and challenge

Lazarus and Folkman (1984) defined cognitive appraisal as the individual's judgment of an event or situation with respect to its significance for well-being. Threat and challenge appraisals occur when dealing with stressful situations. The individual assesses the demands of the environment (primary appraisal), and then makes a decision concerning his or her resources that can be applied to the situation (secondary appraisal). These two appraisals determine whether people assess the situation as a threat or a challenge (Blascovich & Tomaka, 1996; Lazarus & Folkman, 1984). If the individual assumes that his or her personal resources are not sufficient, the situation is appraised as a threat because of the potential for harm or loss. Threat is typically associated with negative affect and limited focus (Blascovich, 2008). On the other hand, if the individual assumes that his or her resources are sufficient to meet the demands of the situation, the situation is appraised as a challenge, and the potential for gain, mastery, or growth is recognized. Challenge is usually associated with better performance and positive affect (Blascovich, Mendes, & Seery, 2002; Blascovich & Mendes, 2000). Blascovich (2008) adds that these evaluations take place in motivated performance situations such as exams, speech giving, sport competitions, and when individuals are engaged in a task. Studies in psychology have found that challenge appraisal encourages performance and threat appraisal blocks it (Seery, Weisbuch, Hetenyi, & Blascovich, 2010). Several studies that focused on the threat and challenge variables were carried out in the Library and Information Science

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