

# Evaluating the Perceived Fit Between E-Books and Academic Tasks

**John D'Ambra**

*School of Information Systems, Technology and Management, University of New South Wales, Australia*

**Concepción S. Wilson**

*School of Information Systems, Technology and Management, University of New South Wales, Australia*

**Shahriar Akter**

*School of Management and Marketing, University of Wollongong, Australia*

## INTRODUCTION

The emergence of e-books and e-reader technologies has changed the nature of publishing and the provision of books for both recreational reading and reading as part of the learning process. The implications of the use of e-books in academic settings are particularly salient as e-books present cost savings both in real terms and in relation to the acquisition, processing and management costs of libraries. As well as offering cost savings, e-readers used to store and display e-books offer significant advantages in mobility, storage and value-added functionality in terms of searching and manipulating the content.

As e-books are now a real alternative in academic settings, both from a textbook perspective and a research perspective, questions arise in terms of the utility offered by e-books and how they meet the needs of academic users. There is a gap in the extant literature on e-book adoption and on the effectiveness of e-books as a resource for academics, as well as the related impact on the perceived performance of e-books in supporting the work of academics. The focus of this article is to explore perceptions of the fit between e-books and academic tasks and the perceived impact of the use of e-books on performance. The theoretical lens used is task-technology fit (TTF) (Goodhue & Thomson, 1995), a theory which argues that technology needs to be accepted willingly, but also to fit well with the users and their corresponding tasks to prove its effectiveness. This study adopts the TTF perspective as it is a powerful model to analyse the adoption and use behaviour of an innovative IT artefact in a specific

context (Benbasat & Barki, 2007). Although TTF has been applied widely in information system research (e.g. Lee, Cheng, & Cheng, 2007; Junglas, Abraham, & Watson, 2008; Zhou, 2010), there is a paucity of research in e-book settings. A review of the literature reveals that the application of TTF in the e-book environment has been under researched and much of the literature remains largely fragmented and anecdotal. This study adopts TTF as the guiding perspective for developing and validating a multi-dimensional TTF construct in e-book settings. The study reported in this article is one of the earliest to conceptualize and test a TTF construct in this setting to capture users' perceptions of e-book adoption and use behaviour.

One general research question drove this study: how do users perceive task-technology fit with regard to e-books at the individual level? In order to answer this question, the study aims to develop and validate a multidimensional TTF construct by focusing on the extant literature, qualitative findings and empirical insights.

## BACKGROUND

For the purposes of the current research, we define e-books as:

*... the electronic equivalent of a printed book converted into digital format which can be displayed on a computer through network services and/or read on a personal computer or handheld device known as e-book readers. Often using specialized proprietary*

*software, e-books may include specific features such as embedded hyperlinks, bookmarks, annotation, text searching, cross reference functions and linking complex multimedia objects. (Adapted from Anuradha & Usha, 2006, p. 49)*

There is an emerging body of literature on the adoption and use of e-books. Anuradha and Usha (2006), in considering a sample of 101 academics and students, found the use of academic e-books to be low, indicating a requirement for creating awareness and user education about the nature of e-books both in relation to software and hardware. Woody, Daniel and Baker (2010) surveyed 91 students and found that participants who had previously used an e-book preferred print texts for learning. Bierman, Ortega, and Rupp-Serrana (2010) undertook a qualitative study of pure and applied science academics and found no significant difference in the way that e-books were utilized by the two groups. Respondents indicated that convenience is a significant driver and that e-books should emulate the use and functionality of perusing content on the Web (e.g. readability, minimum scrolling and clicking, integration of multi-media, hyperlinking, consistency in look and feel, manipulation and printing of text and graphics). In a further qualitative study of geoscience academics and graduate students, Foote and Rupp-Serrano (2010) found that discipline-specific issues are significant in the adoption and viability of e-books. These issues include: the need for high quality graphics; the need to export graphics to other software; the need to manipulate graphics; the need for three dimensional graphics; the need for multi-media; ease of outputting in various formats (.pdf, html); provision of hyperlinks; customization of content.

Shelburne (2009) reported on a collaborative study between the University of Illinois and Springer Publishing in which 1,547 academics and students responded to a survey employing closed and open-ended questions. An important outcome of the study was the consolidation of comments on the advantages and disadvantages of e-books. The advantages were described as accessibility, searchability, portability and environmental sustainability. The disadvantages included reading from a screen, navigation issues, searching issues and Digital rights management issues. Foote and Rupp-Serrano (2010) also report advantages and disadvantages of e-books but from a somewhat different perspective. In term of advantages, academic users found e-books

useful for initial research, good for fact checking, and they liked the ability to link to a course management system and the fact that they provided cost savings for students. Academics also acknowledged that personal print books will not disappear. Students noted the potential cost savings in particular. In relation to the disadvantages, academics reported battery life issues, a preference for print books if regular references were required and a preference for classic texts in print. Students were concerned with copyright issues, a dislike of on-screen advertising and possible increases in student fees with rising technology usage.

The largest study of e-books is the JISC national e-books observatory project conducted in 2008 through a national survey in the UK. Reporting on this research, which involved the analysis of 16,000 free text answers to two open-ended questions concerning e-books, Jamali, Nicholas, and Rowlands (2009) found that the advantages identified by 81% of the respondents included online access, searchability and cost; the disadvantages included difficulties reading from the screen, issues with printing (the need to print part of e-books easily) and saving in a preferred format (pdf).

## ISSUES, CONTROVERSIES, PROBLEMS

Textbooks are a resource that academics use to execute the tasks required of them as educators and researchers. E-books are a new medium for content that has previously been delivered in traditional print formats. E-journals have been integrated into the information-seeking behaviour of academics. However e-books are a more recent technology and there is some uncertainty regarding their adoption in academic settings. To some extent adoption will be dependent on how academics perceive the 'fit' between this new medium and the tasks they undertake, as well as what added-value functionality is provided and utilized by the e-readers that deliver the content.

TTF is an established theoretical framework in information system research that allows the investigation of issues related to the fit between technology and tasks as well as performance. In this research, we propose that examining fit is an appropriate approach to evaluate the use of e-books in academic settings and that it can also contribute to the literature on the

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