Efficacy of the Technology Satisfaction Model (TSM): An Empirical Study

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ABSTRACT

With the rapid uptake of the Internet and e-learning systems worldwide, online research databases have become necessary, even indispensable, tools for research and learning. The International Islamic University Malaysia (IIUM) recognizes the huge potential of databases in improving educational outcomes, and in promoting research among its students and academic staff. In line with its aim to become a research university and centre for educational excellence, the IIUM introduced its online database system in 2000 as part of its e-library services. However, despite a decade of existence, the database was found to be underutilized, especially by postgraduate students. As such, the prime objective of this study is to validate the Technology Satisfaction Model (TSM) to assess its efficacy on students' satisfaction in using online research databases in higher education. A total of 180 postgraduate students from four faculties (Education, Human Sciences, Engineering and Economics) were selected using stratified random sampling procedure. The questionnaires' reliability and validity were performed through a Rasch model using Winsteps version 3.49. The data were analyzed applying the Structural Equation Modeling to test the hypotheses of TSM. The results of this study revealed that computer self-efficacy had a statistically significant direct influence on perceived ease of use and perceived usefulness. Subsequently, students' perceived ease of use and perceived usefulness had statistically significant positive direct influence on their satisfaction in using online research databases. On the other hand, computer self-efficacy had a significant indirect influence on satisfaction mediated by perceived ease of use. Finally, computer self-efficacy also demonstrated a statistically significant indirect influence on satisfaction mediated by perceived usefulness of databases. The findings contributed that the TSM is viable to examine the successful integration of online research databases among postgraduate students in higher education.

Keywords: Higher Education, Online Research Databases, Rasch Model, Structural Equation Modeling, Technology Satisfaction Model

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INTRODUCTION

Online databases are defined as electronic periodical indexes that allow users to locate and retrieve articles and journals through the Internet (Islam, 2011a). They may contain full text articles, or only citation abstracts, and have been in existence since 1978 (Lee, Zimpfer, Barnett & Jacobson, 1993). With the rapid uptake of the Internet and e-learning systems worldwide, online databases such as Proquest, ScienceDirect, PsycINFO, Scopus and SpringerLink have become necessary, even indispensable, tools for research and learning. Metzger, Flanagin and Zwarun (2003) observed that the proliferation of online databases in the late 90s and early 2000s resulted in college students making fewer visits to the campus library, as they increasingly took advantage of the Internet as an information resource. Interestingly enough, in a study by Tenopir (2003), 44% of her respondents believed that “Before long, computers, the Internet, and electronic computer-based archives and databases will allow academics to conduct much of their research without setting foot in the library” (p. 24).

Online database systems, as we know them today, became commercially available in the 1970s (Lester & Wallace, 2004), but the events leading to their development can be traced back to the early 1960s. This was a time when researchers conducted much of their research by accessing information from databases that contained abstracts and indexes of library holdings. Known as abstracting and indexing (A&I) databases, these collections enclosed published data for books and articles, as well as abstracts that summarized each work’s content (Microsoft Encarta Reference Library, 2005). By the mid-60s, they began to convert to computer-driven photocomposition (Neufeld & Cornog, 1986), giving birth to digitized databases such as the Medical Literature Analysis and Retrieval System (MEDLARS), Chemical and Biological Activities (CBAC), Educational Resources Information Center (ERIC), and Dialog Information Retrieval Service (DIALOG). These databases, along with many others now mushrooming in the information industry, are a tremendous blessing to researchers, academics and students alike as they provide almost unlimited access to a vast repository of scientific information with just a few mouse clicks.

The International Islamic University Malaysia (IIUM) recognizes the huge potential of online databases in improving educational outcomes, and in promoting research among its students and academic staff. In line with its aim to become a research university, the IIUM introduced its online database system in 2000 as part of its e-library services. The system was put in place with the hope of ensuring more efficient information seeking and encouraging greater research engagement among its students and staff. Simply called Online Databases, the IIUM’s database system is a compendium of 50 digital resources and is accessible around the clock from the IIUM website.

With good connectivity, IIUM students may access the database from many access points within the campus through their laptops, personal computers and PDAs. It is clearly a most convenient way to surf a vast reservoir of research literature. With this advantage, IIUM students are able to use the database conveniently and efficiently to support their research and learning pursuits. Indeed, this migration from traditional print to digital resources is a quantum leap towards quality education, quality research and lifelong learning for the IIUM, which will contribute significantly to its aim to acquire a research university status.

To date, the IIUM’s online database has been in place for at least a decade, and its use among the university’s population, especially postgraduate students, is reported to be prevalent but not full scale (Harianto, 2006). This is an area of online database satisfaction within the IIUM context that has not been explored in depth. Hence there is a need to understand the factors encouraging certain postgraduate students to use the database but hindering others from utilizing it. In lieu of the fact that the IIUM has invested a vast amount of money to purchase and install the database, it is impor-
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