

INFORMATION SYSTEMS CONTINUANCE MODEL FOR EMPLOYEE IN
WAQF ORGANISATION

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DEDICATION

Specially dedicated to My Parent and My lovely Wife and kids. I would not have accomplished this thesis without the great support from both of my parents. The more I think of them the more I have encouragement to move forwards with all my full willpower to this study goals.

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ABSTRACT

Information systems (IS) or computer-based systems plays a critical role in an organisation's success, especially in the era of digital economics and among digital organisations take place. IS can facilitate organisation through several courses of information management, which including gathering, processing and disseminating information. The positive impacts of IS in job performance will influence its continuous use. However, lack of research in continuance use of IS poses an obstacle to the growth of this domain. Previous studies have examined continuance intention using the Expectation Confirmation Model (ECM), which provides a basis of investigating IS continuance. ECM employed mainly the three factors to explain behavioural intention, namely confirmation, perceived usefulness, and satisfaction. However, the expansion in today's business in terms of technology and business models requires a further integration with other factors such as experience, self-efficacy, task technology fit, utilization and perceived support. Therefore, the aim of this study is to develop an IS continuance model through the extension of ECM by integrating new factors from other related theories which include Task-Technology Fit (TTF), Social Cognitive Theory (SCT), Social Support Theory (SST), and Unified Theory of Acceptance and Use of Technology (UTAUT). The proposed model is evaluated by distributing a survey questionnaires among members of the staff of Majlis Agama Islam Negeri Johor (MAINJ) that use e-Waqf system. The feedback from 115 valid respondents were analysed using the Partial Least Squares (PLS) based on Structural Equation Modelling (SEM) technique. The results show that perceived support, self-efficacy, utilization and perceived task technology fit complement behavioural intention factors that involve user satisfaction, perceived usefulness, as well as confirmation towards IS continuance intention. The results further reveal that prior experience have no influence on IS continuance. The outcome of this study would provide the new knowledge in IS continuance domain and provides an opportunity for developing an effective plan of IS continuance in the organisations

ABSTRAK

Sistem maklumat (IS) atau sistem berasaskan komputer memainkan peranan penting kepada kejayaan organisasi, terutamanya dalam era ekonomi dan organisasi digital. IS membantu organisasi dalam pengurusan maklumat termasuk perolehan, pemprosesan dan penyebaran maklumat. Impak positif IS dalam prestasi kerja mempengaruhi penggunaan IS secara berterusan. Walau bagaimanapun, kekurangan kajian dalam penggunaan IS secara berterusan menjadi halangan kepada kemajuan dalam bidang ini. Kajian terdahulu telah mengkaji niat berterusan menggunakan Model Pengesahan Jangkaan (ECM) sebagai asas kepada kajian penggunaan berterusan bagi IS. ECM menggunakan tiga faktor utama bagi menerangkan niat tingkah laku iaitu pengesahan, jangkaan berguna, dan kepuasan. Walau bagaimanapun, perkembangan dalam perniagaan hari ini dari segi teknologi dan model perniagaan memerlukan integrasi selanjutnya dengan faktor yang lain seperti pengalaman, kerberkesanan diri, kesesuaian fungsi teknologi, kepenggunaan dan jangkaan sokongan. Oleh itu, matlamat kajian ini ialah untuk membangunkan model penggunaan berterusan IS menerusi pengembangan model ECM dengan menggabungkan faktor-faktor baru dari teori-teori berkaitan termasuklah Teori Kesesuaian Fungsi Teknologi (TTF), Teori Pemikiran Sosial (SCT), Teori Sokongan Social (SST), Teori Penerimaan Bersepadu dan Penggunaan Teknologi (UTAUT). Model yang dicadangkan dinilai menerusi soalan kajian tinjauan di kalangan anggota staf Majlis Agama Islam Negeri Johor (MAINJ) yang menggunakan sistem e-Wakaf. Maklumbalas dari 115 responden yang sah dianalisa menggunakan Kuasa Dua Terkecil Separa (PLS) berdasarkan Model Persamaan Struktur (SEM). Keputusan menunjukkan bahawa sokongan yang dirasakan, keberkesanan diri, penggunaan dan kesesuaian fungsi teknologi melengkapi faktor niat tingkah laku yang melibatkan kepuasan pengguna, kegunaan yang diharapkan, serta pengesahan terhadap niat penggunaan berterusan IS. Hasil kajian juga menjelaskan pengalaman lampau tidak mempengaruhi ke arah penggunaan berterusan terhadap IS. Hasil kajian ini memberikan pengetahuan baru dalam bidang penggunaan berterusan IS dan menyediakan peluang untuk membangunkan pelan berkesan IS dalam organisasi.

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LIST OF ABBREVIATION

ACP	-	Average Congruency Percentage
ISC	-	Information system continuance
ECM	-	Expectation confirmation model
ECT	-	Expectation confirmation theory
TAM	-	Technology acceptance model
UTAUT	-	Unified theory of acceptance and use of technology
SCT	-	Social cognitive theory
SST	-	Social support theory
AVE	-	Average Variance Extracted
CR	-	Cronbach's alpha
CA	-	Composite Reliability
IPMA	-	Importance-Performance Map Analysis
TTF	-	Task-technology fit
PLS	-	Partial least squares
CO	-	Confirmation
PE	-	Prior experience
PS	-	Perceived support
PU	-	Perceived usefulness
SAT	-	Satisfaction
UT	-	Utilization
SE	-	Self-efficacy
WA	-	Average Congruency Percentage
ICT	-	Information and communication technology
IT	-	Information technology
IS	-	Information system
SLR	-	Systematic literature review
PRISMA-P	-	Preferred Reporting Items for Systematic review and Meta - Analysis Protocols

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CHAPTER 1

INTRODUCTION

1.1 Overview

In modern business environments, information systems (IS) play a critical role in determining an organisation's success. The effective management of information and the development of IS systems can provide companies with a competitive advantage in the marketplace. IS allow companies to gather, process and distribute internal information effectively within the organisation (Yusof et al., 2008). Not investing sufficient resources in ISs is a risky strategy and can lead to failure (Bhattacharjee, 2001). The benefits of effectively managing an IS are improved job performance from individuals and efficiency in company processes. These advantages have motivated many organisations to increase investment in technologies related to ISs management (Brian and Gerhart, 1996). However, despite growth in the importance of ISs, a lack of widespread use is an obstacle when assessing the benefits of IS implementation (Bhattacharjee, 2001). There is evidence to indicate that the presence of an effective IS is often a prerequisite for achieving a return on investment (Lucas and Spitler, 2000).

ISs are defined as procedures used to improve decision making, communication, and managerial control in organisations (Yusof et al., 2008). They provide valuable data related to the performance of an organisation and can indicate levels of customer satisfaction. Therefore, ISs should be viewed as a vital component of any organisation, because those without an IS are considered to be less competitive (David and Fitzgerald, 2002). There are a variety of definitions pertaining to ISs and it is a term that is wide-reaching because it involves different aspects of an organisation like people, technology, and information. This study defines an IS as "a computer-based system which includes an integration of hardware, software, infrastructure and trained personnel. The purpose of an IS is to facilitate planning, control, coordination,

and decision making to improve efficiency and to help an organisation attain its objectives”. This definition is adopted from Murcko, (2012) and Yusof et al., (2008).

Many previous studies investigated firms initial adoption of ISs (Guinea and Markus, 2009; Limayem et al., 2007b; Venkatesh and Goyal, 2010), but focused less on evaluating their continuous use. (Hartmut et al., 2012). Initial adoption of an IS is an important first step toward achieving success. However, the key to maintaining success is related more to the continuance and effective management of the IS. (Lee, 2010). IS continuance is crucial for organisations because long-term success is dependent on continued usage rather than first-time usage (Bhattacharjee, 2001; Karahanna et al., 1999). Consequently, continuance intention is a popular topic in ISs research (Lee and Kwon, 2011). This research investigates the factors that affect the continuance of ISs by using Expectation Confirmation Model (ECM) as the basis for the comprehensive model.

1.2 Background of the Problem

Information systems continuance (ISC) has yet to receive the same level of attention as ISs acceptance, and only a limited number of publications are related to ISs continuance (Hartmut et al., 2012). It is an area that remains undeveloped to a certain extent and can be further improved upon (Khadir & Belaissaoui, 2017). ISC is important for both the successful implementation of systems in an organisation and for teeming consumers (Lehrer & Hess, 2011; Limayem et al., 2007b). The initial acceptance of ISs is the first important step towards ISs success, the ultimate success of an IS depends on continuance (Bhattacharjee, 2001). Amidst growing competition, a company`s ability to improve decision making and strategic aspects of the business are vital when trying to achieve a competitive advantage. This study comprehensively investigates ISC and examines possible strategies that can aid organisations when implementing an IS.

Many ISs are prone to failure. The failure of a project can be caused by many factors including a change in requirements, or by delays to projects that can cause data

to be of little value to the final production line. Gamage, (2017) discovered that IT projects are often cancelled when only 31% complete, and cost on average 189% more than initially estimated. In Canada, the Hudson Bay Co. lost \$33.3 million in 2005 because of an inventory system issue. In the UK, Inland Revenue spent almost \$3.45 billion more than planned on tax credits because of software errors. Furthermore, ISs projects are subject to other issues that ensure even after project completion, there is still no guarantee of success. ISs have to break through many barriers related to their continuance or companies may only use the system for a short amount of time.

Most ISC studies are based on the expectation-confirmation model (ECM) produced by Bhattacherjee in 2001 (Chen et al., 2015; Chou et al., 2012; Mouakket, 2015; Terzis et al., 2013). Bhattacherjee (2001) states that confirmation, perceived usefulness, and satisfaction are the fundamental factors or constructs contained in literature. When companies intend to use an IS in the long-term other constructs are also important. The development of new technology, consumer-centred business models, and open-access systems has led to new constructs gaining importance in relation to ISC. The most prominent constructs that have more than 60 citations are satisfaction (123), usefulness (99), and confirmation (67). Other constructs that received between 10 and 59 citations are ease of use, perceived enjoyment, attitude, habit, subjective norm, information quality, trust, system quality, perceived value, social influence, and service quality. Those with less than 10 are constructs like flow, perceived behavioural control, playfulness, self-efficacy, facilitating conditions, compatibility, hedonic, effort expectancy, performance expectancy, and innovativeness. It is evident that many constructs are relevant to the context of ISs within typical organisations, whereas other constructs are more suitable for more modern business environments such as internet games or social media. Considering the current literature available, the constructs appear to be scattered. There is no empirical evidence that constructs have been integrated into one single model to show the impact towards ISC. Therefore, it is important that constructs like prior experience, self-efficacy, utilization, task-technology fit, and perceived support are investigated using the ECM to measure the impacts on ISC.

The success of ISs projects is dependent on their continued use as opposed to abandonment in the later stages. A comprehensive model on how best to implement ISs can help companies to avoid abandonment. Integrating the relevant constructs into one comprehensive model provides a wider view of ISC. This study adds to the existing ECM research by integrating 4 models including task-technology fit (TTF), unified theory of acceptance and use of technology (UTAUT), social support theory (SST), and social cognitive theory (SCT). Many IS projects face a sudden decline in user engagement. Therefore, a study that offers a resolution is of benefit to businesses in areas like e-service, e-payments or e-donations. Similar work by (Nabavi et al., 2016) focuses specifically on ISC. He states that the ECM is the preferred model, followed by the technology acceptance model (TAM), the theory of planned behaviour (TPB), and the unified theory of acceptance and use of technology (UTAUT). A comprehensive ISC model is useful for organisations, researchers, IT developers, and online businesses to help improve the planning, strategy, and implementation of ISs. If the relevant constructs are well investigated and evaluated, then companies can use the information to focus their activities and resources accordingly in pursuit of the correct targets (Höck et al., 2010). This can lead to improvements in efficiency in areas like production and operations.

The employees play an important role in using IS in an organisation to ensure the effectiveness of the system. In the context of e-Waqf, the employees use it to record all information related to waqf information, donation, and donator. This system that has been used by Majlis Agama Islam Negeri Johor (MAINJ) in 10 districts of Johor state and the involvement of employees is crucial to the continue use of e-Waqf. Feedback from the employee based on User Acceptance Report provided by MAINJ reveal that factors such as suitability of technology, support, usage, and technology reliability contributed to the continue use of e-Waqf (MAINJ, 2017). These factors have been given attention by MAINJ since the implementation of e-Waqf in 2010 and keep reviewing it to ensure the continue use of the system. However, these factors are not well explained in any previous ISC related models as a single model of ISC in eWaqf context. Thus, this research taking this opportunity to investigate and proposed an ISC model that can explain all these factors as one inclusive ISC model.

1.3 Problem Statement and Research Questions

Assessing the success of ISs remains a challenging task. Even though companies are willing to invest millions of dollars introducing information systems to reap the long-term benefits. If employees are not willing to accept a new IS, the investment is often wasted. Therefore, in order to make investment in an IS worthwhile, the employees of an organisation must be accepting of it and continue to use it over time. Numerous studies apply the ECM to investigate the intent of ISC in a variety of contexts. However, there is still the need to integrate other constructs into the ECM in pursuance of a solution to continuance. Therefore, this study examines the constructs and models, and determines the importance of each construct in relation to the continuance use of ISs. The main question posed by the study is,

“How to develop a solution for understanding continuance use of IS in an organisation?”

The sub-research questions are as follows:

1. What are the factors or constructs influencing the continuance of an IS in an organisation?
2. What are the effects of the most important factors or constructs based on the proposed model?
3. What is the comprehensive model for continuance of an IS in an organisation?

1.4 Research Objectives

The goal of this research can be achieved through the following objectives:

1. To identify factors or constructs that influence an individual's ISC in an organisation.
2. To investigate the most important factors or constructs that influence ISC in an organisation.
3. To propose and validate the model for ISC in an organisation.

1.5 Scope of the Study

The research is bounded by the literature review focuses on topics related to ISC in the organisation. This research investigates which specific constructs influence a user`s willingness to continue use an IS. In this context, users mean the employee who use the IS in the organisation. The analysis focuses on a specific IS called e-Waqf, and it is used by the Majlis Agama Islam Negeri Johor (MAINJ). MAINJ is a government agency who is responsible in managing the policy, administration and citizen affairs related to Islamic activities. The system involves users or employees from 10 districts of Johor state and has been in use since 2010. The user involved in this study are experienced in using e-Waqf and this system will continue to be in use for the foreseeable future. This is important because it provides an example of an already established system that can accurately measure the factors affecting ISC.

1.6 Significance of the study

This study is divided into two parts, theory and practice. With regards to theoretical contributions, most previous research employs the ECM to investigate the intention of continuance. However, this study uses five models: ECM, TTF, UTAUT, SCT, and SST to gain a better understanding of ISC. It enhances the constructs related to ISC and provides data related to importance and performance. With regards to practical contributions, as organisations increase their focus on the role of ISs, the study provide clear factors or constructs that need for attention. These findings could prove beneficial to organisations and policymakers when formulating strategies designed to motivate individuals to continue using ISs.

1.7 Thesis Structure

This thesis is organized and presented in six chapters. This section provide an overview on how the chapters of this thesis are structured.

Chapter 1 introduces the research field, research background, research questions, research objectives, scopes, significant and structure of the thesis.

Chapter 2 describes the details explanation on how literature review was done, the definition of information systems and its importance, previous studies on IS continuance, and well-known theories related to ISC.

Chapter 3 presents the research design and methodology and justifies the choice and use a particular methodological approach. The research framework is proposed and details steps and activities involved throughout the research is also describes in details.

Chapter 4 explains the model, hypotheses and survey instruments used in this study. Measurement items were extracted from the literature for instrument development. The questionnaire was evaluated using content validity and a pilot study.

Chapter 5 describes the result of the main study and finalize an enhancement model for ISC. In this chapter, includes the discussion on the assessment of the measurement model and a structural model by using Smart PLS-SEM.

Chapter 6 describes the finding of the research and concludes with a discussion of the contribution and implication of the research results, the limitation of the study and suggestions for the future research.

1.8. Summary

This study is about investigating ISC as it is a challenging task because of failure in continue use of IS will lead to the failure of company's investment in IS. This chapter provides an overview of ISC and the difficulties pertaining to ISC. Followed by the development of the research statement, questions, and objectives. Finally, the scope, significance of the study, and thesis structure are discussed.

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