THE APPLICABILITY OF AN EXTENDED TECHNOLOGY ACCEPTANCE MODEL FOR ELECTRONIC MEDICAL RECORDS IN JORDAN

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2012

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Abstrak

Rekod Perubatan Elektronik (EMR) berupaya mengurangkan kesilapan perubatan, kos dan masa penyimpanan dan pencapaian data serta mampu memperbaiki aliran kerja maklumat dan kecekapan kerja. Walau bagaimana pun, penerimaan yang rendah dalam kalangan doktor merupakan masalah di kebanyakan negara termasuk Jordan. Kajian penerimaan EMR yang sedia ada tidak mengintegrasikan Kekuatan Kendiri dan Anggapan Kawalan Tingkah Laku sebagai Keupayaan Individu yang mempengaruhi Anggapan Kebolehgunaan dan Anggapan Kemudahgunaan di kalangan doktor di Jordan. Oleh itu, kajian ini bertujuan membangunkan satu model lanjutan bagi Model Penerimaan Teknologi yang mengukur penerimaan EMR di kalangan doktor di hospital swasta di Jordan dengan menggabungkan tiga perspektif: keupayaan individu, teknologi dan tingkah laku. Kekuatan Kendiri dan Anggapan Kawalan Tingkah Laku telah ditambah sebagai faktor bagi perspektif keupayaan individu, manakala Anggapan Kebolehgunaan dan Anggapan Kemudahgunaan merupakan faktor bagi perspektif teknologi. Niat Tingkah Laku pula merupakan faktor bagi perspektif tingkah laku. Tinjauan keratan rentas dan teknik pensampelan rawak telah digunakan untuk memilih sampel hospital sasaran dan kaedah soal selidik yang ditadbir sendiri telah digunakan untuk mengumpul data. Data telah dianalisa menggunakan *Model Persamaan Struktural* berdasarkan pendekatan *Partial-Least Square* bagi mengesahkan model. Dapatan kajian menunjukkan Anggapan Kebolehgunaan mempunyai kesan positif secara langsung terhadap Niat Tingkah Laku dan Kekuatan Kendiri mempunyai kesan langsung ke atas Anggapan Kemudahgunaan. Tambahan pula, Anggapan Kawalan Tingkah Laku juga mempunyai kesan yang sama ke atas Anggapan Kebolehgunaan dan Anggapan Kemudahgunaan. Hasil kajian ini dapat membantu pihak pengurusan atasan di hospital berkenaan dalam menstruktur semula perancangan strategik untuk memperbaiki pelaksanaan EMR dan juga boleh diuji serta digeneralisasikan dalam domain aplikasi teknologi maklumat (IT) yang lain.

Kata Kunci: Rekod Perubatan Elektronik, Kekuatan Kendiri, Anggapan Kawalan Tingkah Laku

Abstract

Electronic Medical Record (EMR) is able to reduce medical errors, cost and time for data storage and retrieval. It is also capable of improving information workflow and work efficiency. Despite the benefits of using EMR, low acceptance among doctors is a common problem in many countries including Jordan. The present acceptance studies of EMR have yet to integrate Self-Efficacy and Perceived Behavioural Control as individual capabilities that influence Perceived Usefulness and Perceived Ease of Use among doctors in Jordan. Therefore, the main objective of this study is to develop an extended Technology Acceptance Model that measures doctor's acceptance of EMR in private hospitals in Jordan by incorporating three perspectives: individual capabilities, technological, and behavioural. Self-Efficacy and Perceived Behavioural Control were added as factors of individual capabilities perspective while Perceived Usefulness and Perceived Ease of Use were included as technological perspective, and Behavioural Intention as a factor for behavioural perspective. This study applied a Cross-Sectional survey, and used the Random Sampling technique to select the sample in the targeted hospitals in Jordan. This study also used self-administered questionnaires. In validating the model, the data were analysed using the Structural Equation Model, based on the Partial Least Square approach. The findings indicated that Perceived Usefulness has a positive direct effect on Behavioural Intention to use EMR, and Self-Efficacy has a direct effect on Perceived Ease of Use. Furthermore, Perceived Behavioural Control has a direct positive effect on Perceived Usefulness and Perceived Ease of Use. These outcomes could assist the healthcare top management in restructuring their strategic planning to improve the EMR implementation. In future, this model can be further tested and extended in other Information Technology (IT) applications, which means that this model can be generalized into the IT domain.

Keywords: Technology Acceptance Model, Self-Efficacy, Perceived Behavioural Control

Acknowledgement

I wish to express my deepest gratitude to Allah for providing me with the substance, time, health, strength and patience to participate in this journey to acquire knowledge. In the first place, I would like to record my gratitude to Dr. Haslina Mohd and Dr. Fauziah Baharom for their supervision, advice, and guidance of this research as well as giving me extraordinary experiences through out the work. Above all and the most needed, they provided me unflinching encouragement and support in various ways. They exceptionally inspired and enriched my growth, as a student, and researcher want to be. I am indebted to them more than they know. Where would I be without my family? My parents deserve special mention for their inseparable support and prayers. My Father Taiseer is the person who put the fundamental of my learning character, showing me the joy of intellectual pursuit ever since I was a child. My Mother, Amal, is the one who sincerely raised me with her caring and gently love. Words fail me to express my appreciation to you Mom. Thank you for your love, your support, your prayers, for everything you did for me during my study and in all 29 years of my life. I would thank my husband Mahmood whose dedication, love and persistent confidence in me, has taken the load off my shoulder. I owe him for being unselfishly let his intelligence, passions, and ambitions collide with mine. Thank you, my lovable siblings Rania, Ghalia, and Mohammad, thanks for being supportive, loving and caring siblings, thank you very much. I would thank my son Abdul Rahman for his smiley lovely face that gave me the strength to keep going no matter of what I faced during my study, thank you Abdul Rahman for being my son because you are a precious gift from Allah. Thank you Dr. Sharipha Soad for your unlimited support and help, I will never forget this for you. I would thank my father in law for his huge help and support. I would thank my mother in law for her thoughtful support and prayers.

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List of Abbreviations

ATT	Attitude
AVE	Average Variance Extracted
BI	Behavioral Intention to use
CAOS	Computer Assistance Orthopedic Surgery System
CDS	Clinical Decision Support
CPOE	Computerized Physician Order Entry
EHCR	Electronic Health Care Records
EMR	Electronic Medical Record
GoF	Goodness of Fit
HIS	Hospital Information System
IOM	Institution of Medicine
IS	Information System
KHCC	King Hussein Cancer Center
KMO	Kaiser Meyer Olkin
MOH	Ministry of Health
PLS	Partial Least Squares
PBC	Perceived Behavioral Control
PEOU	Perceived Ease Of Use
PHR	Personal Health Records
PISA	Programme for International Student Assessment
PU	Perceived Usefulness
RMS	Royal Medical Service
SCT	Social Cognitive Theory
SE	Self-Efficacy
SH	Specialty Hospital
SEM	Structural Equation Model
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
USA	United States of America

UAE	United Arab Emirates
UK	United Kingdom

CHAPTER ONE
INTRODUCTION

1.1 Overview

Discussions in this chapter are divided into thirteen sections. The next section elaborates a review of the healthcare organizations in Jordan, in which facts regarding the industry are outlined. Accordingly, the following sections in this chapter and next refer to these facts. Then, Section 1.3 elaborates an introductory induction to the research. Section 1.4 follows by conveying the background of the research problem, which is outlined in Section 1.5. With reference to the problem, Section 1.6 outlines the proposed solution. In detail, this study attempts to answer a few research questions, which are specified in Section 1.7. The objectives to achieve are formulated in Section 1.8, which are aimed at solving the identified problem. To achieve the objectives, the theoretical framework as outlined in Section 1.9 is appropriate. While the scope of the study is defined in Section 1.10, Section 1.11 defines the research framework. The significance of the study is discussed in Section 1.12. Finally, Section 1.13 concludes the chapter by outlining the whole thesis.

1.2 Healthcare Organization in Jordan

In Jordan, hospitals are divided into four categories: private, public, military, and governmental university hospitals. The public providers of health services in Jordan are the Ministry of Health (MOH) and the Royal Medical Service (RMS). The MOH is responsible for providing care services to public and governmental university hospitals. Meanwhile, the RMS is responsible for providing care services to military hospitals. Beyond the public providers, the private providers own and operate private

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