EXTENDING THE TECHNOLOGY ACCEPTANCE MODEL WITH KNOWLEDGE MANAGEMENT FACTORS TO EXAMINE THE ACCEPTANCE OF MOBILE LEARNING

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SUPERVISOR'S DECLARATION

We hereby declare that We have checked this thesis and in our opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Doctor of Philosophy.

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I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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ABSTRAK

Dalam era teknologi hari ini, pembelajaran mudah alih (M-pembelajaran) telah menjadi alat penting yang membolehkan pelajar mengakses bahan pembelajaran pada bila-bila masa dan di mana sahaja. Menentukan faktor-faktor yang mempengaruhi penerimaan M-pembelajaran masih menjadi salah satu isu kajian oleh para sarjana Sistem Maklumat (SM). Model Penerimaan Teknologi (MPT) telah menyaksikan banyak pengubahsuaian dan penambahbaikan, yang menyumbang kepada pengenalpastian faktor-faktor yang mempengaruhi penerimaan M-pembelajaran. Penggabungan MPT dengan faktor-faktor lain adalah cabang kajian bagi sarjana SM untuk terus meneliti penerimaan M-pembelajaran. Pengurusan Pengetahuan (PP) dianggap sebagai komponen penting untuk membangunkan sistem M-pembelajaran. Selain itu, faktor PP perlu dimasukkan ke dalam sistem M-pembelajaran untuk meningkatkan keupayaan pembelajaran pelajar. Kajian menunjukkan bahawa faktor PP (pemerolehan pengetahuan, perkongsian pengetahuan, aplikasi pengetahuan, dan perlindungan pengetahuan) mempunyai kesan yang selari terhadap penggunaan dan kejayaan SM. Walau bagaimanapun, kajian terlepas pandang akan kesan faktor PP kepada penerimaan M-pembelajaran. Selaras dengan isu ini, objektif penyelidikan ini telah dilipat gandakan. Pertama, untuk menganalisis persepsi pelajar terhadap gabungan faktor PP dalam sistem M-pembelajaran melalui kajian awal. Penyelidikan kami didorong oleh analisis hasil kajian awal, di mana 93% daripada pelajar menunjukkan bahawa mereka akan menggunakan sistem M-pembelajaran dalam kajian mereka jika faktor PP dipertimbangkan. Kedua, untuk membangunkan model baru dengan menggabungkan MPT dengan faktor PP sebagai pemboleh ubah luar. Oleh itu, dicadangkan bahawa dua teras pembinaan utama MPT (iaitu, kebergunaan dan kemudahan penggunaan) dipengaruhi oleh empat faktor PP. Tingkah laku untuk menggunakan sistem M-pembelajaran diandaikan dipengaruhi oleh dua pembinaan utama MPT, sedangkan tingkah laku itu sendiri mempengaruhi penggunaan sistem sebenar. Ketiga, untuk mengesahkan model yang dicadangkan melalui pengembangan aplikasi M-pembelajaran dan penggunaan metode analisis statistik. Kajian ini menggunakan Model Persamaan Sisi-Separuh Struktur (MPS-SS) untuk mengesahkan model yang dibangunkan. Data dikumpul melalui kaji selidik dari 735 pelajar siswazah IT di dua universiti yang berlainan di dua negara berlainan iaitu Universiti Malaysia Pahang (UMP) di Malaysia dan Kolej Universiti Al Buraimi (KUB) di Oman. Pemilihan kedua-dua sampel ini untuk mengesahkan model yang dibangunkan dalam suasana silang budaya. Hasil kajian menunjukkan bahawa pemerolehan, penggunaan, dan perlindungan pengetahuan mempunyai kesan positif ke atas kemudahan penggunaan dan kebergunaan sistem M-pembelajaran dalam kedua-dua sampel. Namun, perkongsian pengetahuan didapati disokong sebahagiannya dalam kedua-dua sampel. Tambahan pula, kebergunaan dan kemudahan penggunaan didapati penentu utama keinginan untuk menggunakan sistem M-pembelajaran. Lebih menarik lagi, model yang dibangunkan menerangkan varians besar (50%) dalam penggunaan sebenar sistem M-pembelajaran dalam kedua-dua sampel, yang dengan jelas menunjukkan bahawa model struktur yang dibangunkan adalah kukuh dan sah, oleh itu, ia dapat memberikan penjelasan akan penggunaan sebenar sistem M-pembelajaran. Hasil kajian ini menyumbang kepada penyelidikan sedia ada dengan mengesahkan dan memperluas MPT dengan faktor PP dalam dua konteks yang berbeza (iaitu, UMP dan KUB) dan memberikan pelbagai implikasi kepada teori, penyelidikan, dan amalan.

ABSTRACT

In today's technological era, Mobile learning (M-learning) has become an essential tool that enables the students to access the learning materials on anytime anywhere settings. Determining the factors that affect the acceptance of M-learning is still one of the ongoing and critical issues by Information System (IS) scholars. The Technology Acceptance Model (TAM) has witnessed a lot of modifications and enhancements, which in turn contribute to the identification of the factors that affect the M-learning acceptance. Extending the TAM with other factors is still an open door for IS scholars to further examine the M-learning acceptance. Additionally, Knowledge Management (KM) is regarded as an essential component for developing M-learning systems. Besides, it is crucial for enhancing the students' learning abilities that KM factors should be incorporated in M-learning systems. Research shows that KM factors (knowledge acquisition, knowledge sharing, knowledge application, and knowledge protection) have a significant effect on the adoption and success of many ISs. However, research has overlooked the impact of KM factors on M-learning acceptance. In line with this issue, the research objectives of this study are threefold. First, to analyze the students' perceptions towards the integration of KM factors in M-learning systems through a preliminary study. Our research problem was motivated by the analysis of the preliminary study results, in which 93% of the students indicated that they would use the M-learning system in their studies if KM factors would be taken into consideration. Second, to develop a new model by extending the TAM with the KM factors as external variables. In that, it is suggested that the two main constructs of TAM (i.e., perceived usefulness and perceived ease of use) are affected by the four KM factors. Besides, the behavioral intention to use is suggested to be influenced by the two main constructs of TAM, whereas the behavioral intention itself is assumed to affect the actual system use. Third, to validate the proposed model through the development of M-learning application and the use of statistical analyses methods. This study employs the Partial Least Squares-Structural Equation Modeling (PLS-SEM) to validate the developed model. Data were collected through a questionnaire survey from 735 IT undergraduate students in two different universities in two different countries, namely Universiti Malaysia Pahang (UMP) in Malaysia and Al Buraimi University College (BUC) in Oman. The selection of these two samples is attributed to the intention to validate the developed model in a cross-cultural setting. The results suggest that knowledge acquisition, application, and protection have a positive effect on perceived ease of use and perceived usefulness of M-learning systems in both samples. However, knowledge sharing was found to be partially supported in both samples. Furthermore, perceived usefulness and perceived ease of use were found to be significant determinants of the behavioral intention to use M-learning systems. More interesting, the developed model explains a substantial variance (50%) in the actual use of M-learning systems in both samples, which clearly shows that the developed structural model is sound and valid, and hence, it could provide a plentiful explanation of the actual use of M-learning systems. The results of this study contribute to the existing literature by validating and extending the TAM with the KM factors in two different contexts (i.e., UMP and BUC) and provide various implications to the theory, research, and practice.

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LIST OF ABBREVIATIONS

AU	Actual System Use
AVE	Average Variance Extracted
BI	Behavioral Intention to Use
BUC	Al Buraimi University College
CB-SEM	Covariance-based Structural Equation Modelling
CLT	Cognitive Load Theory
CMB	Common Method Bias
CR	Composite Reliability
CRM	Customer Relationship Management
DL&ML	DeLone and McLean Information System Success Model
ECM	Expectation-Confirmation Model
EFA	Exploratory Factor Analysis
ERP	Enterprise Resource Planning
HTMT	Heterotrait-Monotrait ratio
IDT	Innovation Diffusion Theory
IS	Information System
KA	Knowledge Acquisition
KAP	Knowledge Application
KM	Knowledge Management
KP	Knowledge Protection
KS	Knowledge Sharing
LMS	Learning Management System
MALL	Mobile Assisted Language Learning
PEOU	Perceived Ease of Use
PLS	Partial Least Squares
PLS-SEM	Partial Least Squares-Structural Equation Modelling
PU	Perceived Usefulness
SDT	Self-Determination Theory
SEM	Structural Equation Modelling
SI	Social Influence Model
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action

UMP	Universiti Malaysia Pahang
UTAUT	Unified Theory of Acceptance and Use of Technology
VIF	Variance Inflation Factor

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