LMS CONTINUANCE AMONG STUDENTS AND LECTURERS IN NORTHERN MALAYSIAN PUBLIC UNIVERSITIES THROUGH EXPANDED EXPECTATION CONFIRMATION THEORY (ECT) PERSPECTIVE

AGGILANDA EASWARY D/O MURUTHY

MASTER OF SCIENCE (TECHNOLOGY MANAGEMENT) UNIVERSITY UTARA MALAYSIA 2017
LMS CONTINUANCE AMONG STUDENTS AND LECTURERS IN NORTHERN MALAYSIAN PUBLIC UNIVERSITIES THROUGH EXPANDED EXPECTATION CONFIRMATION THEORY (ECT) PERSPECTIVE

By

AGGILANDA EASWARY D/O MURUTHY

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(College of Business)  
Universiti Utara Malaysia

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Tandatangan  
(Signature)

Tarikh: 25 September 2016  
(Date)
Nama Pelajar
(Name of Student) : Aggilanda Easwary A/P Muruthy

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ABSTRACT

Learning Management System (LMS) is a system that especially developed and broadly applied for teaching and learning process. This thesis aims to investigate users’ expectation in using LMS for their teaching and learning process among higher education institutions. In detail, this thesis was conducted to determine students’ and lecturers’ expectations on using LMS and define their future need on LMS. For the purpose of this study, a survey which involved 727 students and lecturers from the northern region public university was carried out. This thesis used expanded Expectation Confirmation Theory (ECT) to find users’ expectation in accepting LMS. In addition, six main variables include perceived usefulness (PU), perceived ease of use (PEOU), confirmation (CON), perceived enjoyment (PE), satisfaction (SAT) and continuance intention (CI) on LMS usage were used to find the relationship between the selected variables that influence users’ intention to use LMS in their teaching and learning. A structured questionnaire was designed where data were analysed by SPSS 20.0 to determine the relationship between the selected variables. The findings show that PU, PEOU, CON, PE, SAT and CI were significantly important determinants to predict users’ intention to use LMS continuously.

Keyword: Learning Management System (LMS), Students, Lecturers, Expectation Confirmation Theory (ECT), Continuance Intention
ABSTRAK

Sistem Pengurusan Pembelajaran (LMS) merupakan satu sistem khusus yang dibina dan digunakan secara meluas dalam proses pengajaran dan pembelajaran. Tesis ini bertujuan untuk mengkaji gelagat pengguna dalam penggunaan LMS bagi proses pengajaran dan pembelajaran di institusi pengajian tinggi awam. Secara terperinci, tesis ini dilaksanakan untuk menjangka gelagat pelajar dan pensyarah dalam penggunaan LMS. Selain itu, tesis ini bertujuan untuk menentukan keperluan mereka pada masa depan dalam menggunakan LMS. Satu tinjauan telah dijalankan yang melibatkan para pelajar dan pensyarah daripada universiti awam wilayah utara. Seramai 727 orang responden telah dipilih sebagai sampel kajian. Tesis ini telah menggunakan Expectation Confirmation Theory (ECT) untuk melihat gelagat pengguna dalam menerima LMS. Di samping itu, terdapat enam pemboleh ubah utama termasuk kegunaan dilihat (PU), penggunaan mudah dilihat (PEOU), pengesahan (CON), keseronokan dilihat (PE), kepuasan (SAT) dan jangkaan penerusan (CI) dalam penggunaan LMS bagi mencari hubungan antara pemboleh ubah yang dipilih yang mempengaruhi jangkaan pengguna untuk menggunakan LMS dalam pengajaran dan pembelajaran mereka. Satu set soal selidi berstruktur telah digunakan. Data kajian telah dianalisis menggunakan perisian SPSS 20.0, bagi menentukan hubungan antara pemboleh ubah yang dipilih. Dapatan kajian menunjukkan bahawa PU, PEOU, CON, PE, SAT dan CI adalah pemboleh ubah penting untuk menjangka gelagat pengguna dalam penggunaan LMS secara berterusan.

Kata Kunci: Sistem Pengurusan Pembelajaran (LMS), Pelajar, Pensyarah, Expectation Confirmation Theory (ECT), Jangkaan Penerusan
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Aggilanda Easwary A/P Muruthy (817569)
Master of Science in Technology Management (Msc Tech. Mng.)
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<td>LMS</td>
<td>Learning Management System</td>
</tr>
<tr>
<td>ECT</td>
<td>Expectation Confirmation Theory</td>
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<td>PEOU</td>
<td>Perceived Ease Of Use</td>
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<td>Perceived Usefulness</td>
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<td>University Malaysia Perlis</td>
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<td>UiTM</td>
<td>University Technology Mara</td>
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<td>HEP</td>
<td>Students Affairs Department</td>
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<td>E-LEARNING</td>
<td>Electronic Learning</td>
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<tr>
<td>DePAN</td>
<td>Dasar E-Pembelajaran Negara</td>
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<tr>
<td>MOOC</td>
<td>Massive Open Online Course</td>
</tr>
<tr>
<td>HEI</td>
<td>Higher Education Institution</td>
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<tr>
<td>KPT</td>
<td>Higher Education Ministry</td>
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<tr>
<td>PSPTN</td>
<td>Pelan Strategik Tinggi Negara</td>
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<td>GOL</td>
<td>Globalised Online Learning</td>
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CHAPTER 1
INTRODUCTION

1.0 CHAPTER OVERVIEW

This section discusses the overall contents of the thesis. This chapter includes the background of study, problem description, research questions, research objectives, scope of the study, and significance of the study, plus the organisation of the thesis.

1.1 BACKGROUND OF STUDY

The e-learning system is an electronic technology that helps to develop knowledge and information, and to understand the users’ behaviour. This is because the technology is able to demonstrate the users’ ability and this can positively influence their behaviours. E-learning is a medium that provides paramount information and knowledge to the users. A study in Docebo (2014) that covers certain regions in the world has indicated that Asia scored the highest growth rate (17.3%) in the usage of e-learning, followed by Eastern Europe (16.9%), Africa (15.2%), and Latin America (14.6%). The statistics from Docebo showed that e-learning is under the concern of the users, where it is known as one of the important technologies among the users.

Additionally, e-learning is also listed as an advanced technology that is actively developed from time to time; especially in the area of information and communications technology (ICT). E-learning, at the early stage, is concerned more about spreading information around the world. However, in this 21st century, e-learning is emphasised on the construction of knowledge through the collaboration between the students via social network (Ishak, Yamin, & Ibrahim, 2015; Asia e-University, 2010). In short, e-learning is really beneficial to its
The contents of the thesis is for internal user only
REFERENCES


Adzharuddin, N. & Ling (2013). Learning Management System (LMS) among University Students: Does It Work?. *IJEEE*.


Washington University.


Hurt, N. E., Moss, G. S., Bradley, C. L., Larson, L. R., Lovelace, M., Prevost, L. B., ... & Camus, M. S. (2012). The ‘Facebook'effect: college students' perceptions of online discussions in the age of social networking. *International Journal for the Scholarship of Teaching and Learning, 6*(2), 10.


Mohamed Amin Embi (2011). *E-Learning in Malaysian higher education institutions* (pp. 29-50). Department of Higher Education.


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