

**The Extended UTAUT Acceptance Model of Computer-Based
Distance Training System Among Public Sector's Employees in
Jordan**

**A Thesis submitted to the UUM College of Arts and Science in fulfillment of
the requirements for the degree of Doctor of Philosophy
Universiti Utara Malaysia**

By

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ABSTRACT

The utilization of advanced network technologies and modern computer applications in distance learning raises the importance of distance learning system in the delivery of learning materials and resources to remote trainees. This innovation offers the organizations and their employees an opportunity to solve the problems associated with traditional training methods. In this respect, the acceptance of computer based distance training system (CBDTS) is considered critical in determining the success of its implementation. However, the number of studies that have been conducted to examine the acceptance of distance training system by employees of public sector organizations in the Kingdom of Jordan is very limited. It is also questionable whether the information system acceptance models that have been previously developed can be used to examine the acceptance of CBDTS by public sector employees in Jordan. Questions are also raised to the idea that perhaps there may be other factors that play important roles in this context. The main objectives of this study therefore are to determine the factors that lead to the acceptance of public sector employees on computer-based distance training system and finally to propose a model of technology acceptance of computer-based distance training system by public sector employees. A total of 600 questionnaires were distributed through a survey to public sector employees in Jordan. The study received about 386 responses, which represents 64.3% returned rate. Structural equation model (SEM) was used with AMOS version 16.0 to analyze the data. The findings indicate that six core determinants, namely, performance expectancy, effort expectancy, system flexibility, system enjoyment, social influence, and facilitating conditions significantly influenced employee intention to use distance training system. Five core determinants; system interactivity, system enjoyment, computer anxiety, computer self efficacy, and facilitating conditions significantly determine effort expectancy while only four of them including system interactivity, system enjoyment, computer anxiety, and effort expectancy significantly determine performance expectancy. Consequently, based on these findings, the final research model known as computer-based distance training acceptance model (CBDTAM) is proposed to explain and predict public sector employee's intention in using computer-based distance training system. A comprehensive understanding of this model will assist decision makers to identify the reasons for the acceptance or resistance of computer based distance training system among public sector employees in the future and finally to support them to enhance the system's acceptance and usage.

ABSTRAK

Penggunaan jaringan teknologi yang maju dan aplikasi komputer dalam pembelajaran jarak jauh membangkitkan isu peri pentingnya penghantaran bahan-bahan dan sumber dalam sistem pembelajaran jarak jauh kepada pelajar di kawasan terpencil. Inovasi teknologi ini menawarkan organisasi dan para pekerja satu peluang untuk menyelesaikan masalah yang berkait dengan kaedah latihan tradisional. Dalam hal ini, penerimaan sistem latihan jarak jauh, sejenis pembelajaran jarak jauh, dianggap kritikal dalam menentukan kejayaan pelaksanaan teknologi berkenaan. Bagaimanapun, bilangan kajian yang telah dibuat untuk meneliti penerimaan sistem e-pembelajaran secara umumnya dan sistem pembelajaran jarak jauh khasnya oleh pekerja di sektor awam di negara Jordan masih kurang. Oleh itu, model dan teori penerimaan teknologi yang telah dibangunkan dan dikembangkan dalam kajian lalu untuk mengkaji penerimaan sistem latihan jarak jauh berasaskan komputer dalam kalangan pekerja di sektor awam di negara Jordan boleh dipersoal. Persoalan juga ditimbulkan tentang kemungkinan terdapat faktor lain yang turut memainkan peranan dalam konteks ini. Oleh itu, objektif utama kajian ini ialah untuk menentukan faktor yang mempengaruhi penerimaan sistem latihan jarak jauh di kalangan pekerja sektor awam dan seterusnya mencadangkan model penerimaan teknologi sistem latihan jarak jauh oleh pekerja sektor awam. Soal selidik telah digunakan untuk mengutip data daripada 600 orang pekerja sektor awam di negara Jordan. Tinjauan menghasilkan 386 soal selidik, dengan kadar respons sebanyak 64.3%. *Structural equation model* (SEM) telah digunakan dengan versi AMOS 16.0 untuk menganalisis data. Hasil kajian menunjukkan bahawa enam penentu utama iaitu jangkaan prestasi, jangkaan usaha, keanjalan sistem, kegembiraan menggunakan sistem, pengaruh sistem, dan keadah yang memudahkan mempengaruhi secara signifikan niat pekerja. Lima penentu utama iaitu interaktiviti sistem, kegembiraan menggunakan sistem, kebimbangan terhadap komputer, keberkesanan sendiri dengan komputer, dan keadaan yang memudahkan mempengaruhi secara signifikan jangkaan usaha, manakala hanya empat dari penentu utama tersebut iaitu interaktiviti sistem, kegembiraan menggunakan sistem, kebimbangan terhadap komputer, dan jangkaan usaha mempengaruhi secara signifikan jangkaan prestasi. Hasilnya, model akhir yang diubah suai yang dikenali sebagai model penerimaan latihan jarak jauh berasaskan komputer (CBDTAM) telah dicadangkan untuk menjelaskan dan meramal niat pekerja di organisasi sektor awam di negara Jordan. Kefahaman menyeluruh tentang model ini dapat membantu pembuat keputusan untuk mengenal pasti punca penolakan atau penerimaan sistem latihan jarak jauh berasaskan komputer oleh pekerja dan membantu mereka untuk meningkatkan penerimaan dan penggunaan sistem berkenaan.

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PUBLICATIONS ASSOCIATED WITH THIS THESIS

Ahmad, T. Ibrahim, H & Affendi, S. M. (2011). Issues and Challenges in Applying Computer-Based Distance Training System. GSTF International Journal on Computing, 2.

Ahmad, T. Ibrahim, H., & Affendi, S. M. (2010). Distance Training System as an Alternative to Traditional Training. International Conference on Infocomm Technologies, Singapore.

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GLOSSARY OF TERMS

Acceptance of Information Technology: The demonstrable willingness within a user group to employ information technology for the tasks it is designed to support.

Affect: A persons' negative or positive feeling associated with using a particular system.

Anxiety: A persons' emotional reaction he/she uses a particular technology.

Asynchronous Distance Learning: A distance learning method in which the learners are geographically separated from the instructor and is based on the learners' access to the learning materials at any time from any place.

Attitude: A person's feeling (negative or positive) towards using particular technology.

Behavioral Controls: How a person perceives that he/she is able to perform a particular behavior.

Compatibility: The degree to which a user perceives that he/she has knowledge and resources to use an innovation.

Complexity: The degree of ease associated with an innovation's use.

Computer-Based Distance Training System: The use of computer and network to convey the training materials and provide resources to the remote employees.

Construct Validity: The degree to which measured items (measured variables) represent their intended constructs (latent variables).

Content Validity: The correspondence between the instrument items and the concept. Content validity is also known as face validity.

Diffusion of Innovation: A process used to convey an innovation among members of a social system via particular channels over specific time periods.

Distance Education: The process in which education occurs when the students are physically separated from the instructors.

Distance Learning System: The delivery system that is used to deliver instructions and provides resources to the remote students.

Distance Training: The training method that is developed by companies to train or retrain employees to overcome the obstacle of a fast-paced work environment, and it takes place when the trainers and trainees are geographically separated.

Effort Expectancy: A person's perception that a particular system will be easy to use.

E-learning: The use electronic devices in learning.

Extrinsic Motivation: The degree to which a user perceives that using particular information technology will enable him/her to achieve better outcomes.

Facilitating Conditions: The environmental infrastructure that makes the accomplishment of the activity easier.

Image: The degree to which a user perceives that using a technology will enhance his/her image or status in the social system.

Information System Architecture: A structural design of system components, relationships between such components, principles, and directives.

Innovation: An idea, practice, or object that is perceived as new by an individual or other unit of adoption.

Intrinsic Motivation: Means that the person likes to execute a behavior because he/she does not have other motivation other than executing the activity him/herself.

Job Fit: The degree to which a person believes that utilizing a technology will enhance his/her work performance.

Long Term Consequences: The degree to which a person believes that he/she would get outcomes by using a particular system in the future.

Observability: The degree to which the results of the experience are clear to other social members.

Outcome Expectations-Personal: Outcomes of using a particular information technology.

Outcomes Expectation-Performance: The expectation of the technology used on the job.

Perceived Ease of Use: The degree of complexity of using the technology.

Perceived Usefulness: The degree to which the user believes that using the system will improve his/her work outcome.

Performance Expectancy: A person's beliefs that using a particular system will enhance his/her work performance.

Relative Advantage: The degree to which an individual perceives that an innovation will improve his/her work performance or learning.

Reliability: The extent to which an instrument is without prejudice (bias) and provides consistent measurement across time and variety items.

Self-Efficacy: A person's ability to use the technology to perform particular work.

Social Factors: A user's perception of other people whether or not he/she has to perform a behavior.

Social Influence: A user's perception of other people whether or not he/she has to perform a behavior.

Subjective Norm: The degree to which the user believes the importance of opinion of other people as to whether or not he/she uses a technology.

Synchronous Distance Learning: A distance learning method in which the learners are geographically separated from the instructor and is based on the learning process that takes place in real time.

System Flexibility: The degree to which users perceive that they can use the distance learning system from any place at any time.

Traditional Training (face to face training): A training process that takes place when the trainees and trainer are at the same time in the same place.

Trialability: The opportunity of trying a particular system by users before they use it.

Validity: The degree to which the items accurately measure what they are intended to measure.

Voluntariness of Use: The degree to which an individual believes that using a particular technology will be free.

LIST OF ABBREVIATIONS

AGFI	Adjusted goodness-of-fit index
ANX	Computer anxiety
ASTD	American Society for Training and Development
AVE	Average variance extracted
B-learning	Blended learning
BI	Behavioral intention
CA	Cronbach's alpha
CBDTS	Computer-based distance training system
CFA	Confirmatory factor analysis
CFI	Comparative Fit Index
CMIN	Minimum sample discrepancy function
cr	Critical ratio
CR	Composite reliability
CHEA	Council for High Education Accreditation
CSE	Computer self-efficacy
C-TAM-TPB	Combined TAM and TPB
df	Degrees of freedom
D-learning	Distance learning
DOI	Diffusion of innovation theory
EE	Effort expectancy

FC	Facilitating conditions
GFI	Group of fit measures
ICDL	International computer driving license
ICT	Information and communication technology
ITG	Information technology group
MM	Motivational model
MPCU	Model of PC utilization
NFI	Normed fit index
PE	Performance expectancy
PEOU	Ease of use
PU	Perceived usefulness
RAMSEA	Root square error of approximation
SCT	Social cognitive theory
SE	System enjoyment
SEM	Structural equation model
SF	System flexibility
SI	Social influence
SIN	System interactivity
TAM	Technology acceptance model
TLI	Tucker-Lewis coefficient
TPB	Theory of planned behavior
TRA	Theory of reasoned action

UTAUT

Unified theory of acceptance and usage technology

ACKNOWLEDGEMENTS

I would like to express my appreciation and gratitude to everyone contributed in completing this thesis. It was my pleasure to study under Dr. Huda Hj Ibrahim's supervision. It is not enough to say her that thank you very much for her guidance to help me to achieve my goal. Without her valuable support, my thesis would not have been possible. I would like to express my thanks to my co-supervisor Dr. Shafiz Affendi Mohd Yusof for his comments which help improving my work.

I would like also to give my thanks to my parents, my fiancée and all of my relatives for their love and support. My goal would not have been achieved without them. I dedicate this work to my parents and my fiancée Roba Soub.

I am very grateful to Dr Haslina and Dr Shariza. They were very kind during the viva and during period of the correction. Additionally their comments have helped to improve this work.

I had a very fortune to study at Universiti Utara Malaysia (UUM). Not only, it has a beautiful nature but the university also has a helpful staff.

Finally, I would like to thank all of my friends for their encouragement during my study.

CHAPTER ONE

INTRODUCTION

1.0 Background

The development of Information Technology (IT) has urged employees in organizations all over the world to upgrade their knowledge and skills. One way of doing this is by attending various kinds of training including traditional training or workshop. Behling et al. (2007) defined traditional training (i.e. face-to-face training) as the training process that takes place when the trainees and the trainer are present at the same time in the same place. Even though traditional training provides several benefits such as places a trainee in a stimulating and challenging group environment, and creating and facilitating business networking between one trainee and colleagues who come from different working background (Training Directory, 2007), not every employee has an opportunity to attend it. There are many obstacles for employees to attend traditional training for example employees have family duties, the timing of the training coincide with working time, and irregular work. Despite these obstacles, organizations spend a lot of money to train and retrain their employees through the traditional training method. According to Ruttenbur et al. (2000), organizations over the world have spent about 62.5 billion dollars to train their employees through traditional

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