SYSTEMATIC APPROACH TO MEASURE COMPUTER BASED INFORMATION SYSTEM ACCEPTANCE IN DECISION MAKING FOR ORGANIZATIONS IN JORDAN

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Abstrak

Penggunaan sistem maklumat berasaskan komputer (CBIS) sebenarnya membantu pembuat keputusan dan memberi kuasa kepada mereka untuk menjalankan keputusan yang diperlukan di tempat kerja mereka. Penerimaan yang kurang menggalakkan terhadap penggunaan sistem maklumat berasaskan komputer dalam organisasi swasta di Jordan, bagaimanapun, membawa kepada pembuatan keputusan yang tidak sesuai di pelbagai peringkat dalam organisasi, yang akhirnya membawa kepada kerugian kos dan masa kepada organisasi. Kajian ini yang berdasarkan Teori Bersepadu Penerimaan dan Penggunaan Teknologi (UTAUT), mempunyai objektif untuk: (1) mengukur tahap penerimaan CBIS dalam membuat keputusan untuk organisasi di Jordan, (2) mengenal pasti atribut (faktor yang relevan) membuat keputusan yang menjejaskan pembuatan keputusan, dan (3) membangunkan model konsep penerimaan dan penggunaan CBIS untuk membuat keputusan dalam organisasi di Jordan. Satu set soal selidik yang terdiri daripada pembolehubah seperti masa, kos, faedah, sumber, risiko, jangka prestasi, jangka usaha, pengaruh sosial, keadaan memudahkan, niat tingkah laku untuk menggunakan CBIS, penggunaan sebenar CBIS, dan proses membuat keputusan CBIS digunakan untuk mengumpul data bagi kajian ini. Populasi adalah organisasi swasta yang berdaftar di Jordan. Sejumlah 642 soal selidik telah diedarkan di mana sebanyak 360 telah diterima kembali dengan kadar maklum balas 56.07%. Teknik Pemodelan persamaan Struktur (SEM) telah digunakan. Semua pembolehubah didapati signifikan kecuali keadaan memudahkan. Kajian ini mencadangkan organisasi supaya mengambil langkah usaha yang mantap untuk melatih pekerja termasuk berkaitan dengan penerimaan dan penggunaan CBIS dalam membuat keputusan.

Kata kunci: Membuat keputusan, Proses membuat keputusan, *Unified theory of acceptance and use of technology.*

Abstract

The use of computer-based information system (CBIS) helps to facilitate decision makers and empowers them to make decisions in their workplace. A lower acceptance regarding the use of CBIS in private organizations in Jordan, however, leads to unsuitable decision making at various organizational level, which eventually incurred cost and time to organizations. This research, which is based on the Unified Theory of Acceptance and Use of Technology (UTAUT), has the following objectives: (1) to measure the acceptance level of CBIS in decision making in organizations in Jordan, (2) to identify the decision making attributes (relevant factors) that affect decision making, (3) to develop a conceptual model of acceptance and use of the CBIS in decision making in organizations in Jordan. A questionnaire consisting of the variables such as time, cost, benefits, resources, risk, performance expectancy, effort expectancy, social influence, facilitating conditions, behavior intention to use CBIS, actual use of CBIS, and decision making process of CBIS, were used to collect the data for this study. The population of the study was private organizations registered in Jordan. A total of 642 questionnaires were distributed with the usable questionnaires of 360 returned, with a response rate of 56.07%. The Structural Equation Modeling (SEM) technique was used to analyze the data. All the proposed variables were significant except facilitating conditions. This study suggests organizations to take concrete steps to train their employees regarding the use, adoption and ultimately acceptance of CBIS in decision making.

Keywords: Decision making, Decision making process, Unified theory of acceptance and use of technology.

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Declaration Associated with this Thesis

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Glossary of Terms

Acceptance of Information Technology (IT): The certain willingness within a user group to utilize IT for the tasks it is designed to support.

Computer Based Information System (CBIS): The integration of the hardware, software, data, models, procedures, user interface and end users. In order to, process data into information.

Questionnaire: A composition of written set of questions for respondents to collect their answers, usually used within closed defined alternatives.

Methods: Procedures and techniques used to collect and analyzed data so as to answer research questions or test hypotheses.

Methodology: The strategy or plan of action, processor design which was the reason of using specific methods and combining the use of these methods with outcome of research.

Independent Variable: A variable which influences the dependent variable and explains its variance.

Exogenous Latent Construct: A latent (multi item equivalents) an independent variable which is not affected by other construct in the model. Construct that acts only as a predictor or "cause" for other constructs in the model.

Endogenous Latent Construct: A latent (multi item equivalents) dependent variable which is affected by other constructs in the model. A Construct which is dependent or outcome variable in at least one causal relationship.

Theoretical Framework: A conceptual model, it explains the researcher theory, and make meaning of relationships between several factors which was identified to be important to the problem.

Multicollinearity: The high correlated within the independent variable more than 0.90, this somehow referrer to the nearest one variable to represent another variable or what known as multicollinearity.

SEM: Structural equation modeling which is a multivariate technique combining aspects of multiple regression (examining dependence relationships), and factor analysis (representing unmeasured concepts with multiple variables) to estimate a series of interrelated dependence relationships simultaneously. Also, SEM is interchangeably covariance-based SEM (CB-SEM).

CMIN/DF: Relative chi-square, also called normal chi-square, is the chi-square fit index divided by degrees of freedom, in an attempt to make it less dependent on sample size. AMOS lists relative chi-square as CMIN/DF (chi square/degree of freedom ratio).

RMSEA: Root mean square error of approximation, there is good model fit if RMSEA less than or equal to .05. There is adequate fit if RMSEA is less than or equal to .08. More recently, Hu and Bentler (1999) have suggested RMSEA <= .06 as the cutoff for a good model fit. RMSEA is a popular measure of fit.

CFI: Comparative fix index, close to 1 indicates a very good fit, > 0.9 or close to 0.95 indicates good fit, by convention; CFI should be equal to or greater than .90 to accept the model, CFI is recommended for routine use.

NFI: Normed fit index, also known as the Bentler-Bonett normed fit index, DELTA1, 1 = perfect fit. NFI values above .95 are good, between .90 and .95 acceptable, and below .90 indicates a need to re-specify the model. NFI greater than or equal to 0.9 indicates acceptable model fit.

NNFI (TLI): Non-normed fit index, also called the Bentler-Bonett non-normed fit index, the Tucker-Lewis index, TLI, RHO2, NNFI is similar to NFI, but penalizes for model complexity. NNFI is not guaranteed to vary from 0 to 1. It is one of the fit indexes less affected by sample size. NNFI close to 1 indicates a good fit. TLI greater than or equal to 0.9 indicates acceptable model fit. By convention, NNFI values below .90 indicate a need to re-specify the model.

RFI: Relative fit index, RHO1, is not guaranteed to vary from 0 to 1. RFI close to 1 indicates a good fit.

GFI: Goodness of fit index, a statistic measuring the absolute fit (unadjusted for degrees of freedom) of the combined measurement and structural model to the data. GFI should by equal to or greater than .90 to indicate good fit. GFI is less than or equal to 1. A value of 1 indicates a perfect fit. GFI tends to be larger as sample size increases.

AGFI: Adjusted Goodness of Fit Index, statistic measuring the fit (adjusted for degrees of freedom) of the combined measurement and structural model to the data.

AGFI adjusts the GFI for degree of freedom, resulting in lower values for models with more parameters. AGFI should also be at least .90, close to 1 indicates good fit. AGFI may underestimate fit for small sample sizes. AGFI's use has been declining and it is no longer considered a preferred measure of goodness of fit. AGFI > 0.9 indicates good fit.

RMR: Root Mean Square Residual, statistic assessing the residual variance of the observed variables and how the residual variance of one variable correlates with the residual variance of the other items. the smaller the RMR, the better the model. An RMR of zero indicates a perfect fit. The closer the RMR to 0 for a model being tested, the better the model fit. RMR smaller than 0.05 indicates good fit.

SRMR: Square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model. SRMR < = .05 means good fit, the smaller the SRMR, the better the model fit. SRMR = 0 indicates perfect fit. A value less than .08 is considered good fit. SRMR tends to be lower simply due to larger sample size or more parameters in the model.

AMOS: A SEM software, developed by Dr. Arbuckle, Published by Small Warters and marketed by SPSS as a statistically equivalent tool to LISREL. Details are available at http://www.spss.com/amos/.

First Generation Statistical Techniques: A general term relating to correlation based analyses methods. These methods include linear regression, ANOVA, MANOVA, etc. These techniques require researchers to analyze the item loadings on

the latent variables separately from the linkage of the independent variables to the dependent variable.

.

Second Generation Data Analysis Techniques: Techniques enabling researchers to answer a set of interrelated research questions. In a single, systematic, and comprehensive analysis. By using modeling the relationships among multiple independent and dependent constructs simultaneously. Such as SEM technique**.**

List of Abbreviations

CBIS	Computer Based Information System
DM	Decision Making
DMP	Decision Making Process
ICT	Information and Communication Technology
IS	Information System
IT	Information Technology
TAM	Technology Acceptance Model
TAM2	Revised Technology Acceptance Model
TAM3	Revised Technology Acceptance Model 2
TRA	Theory of Reasoned Action
TPB	Theory of Planned Behavior
DTPB	Decomposed Theory of Planned Behavior
MM	Motivation Model
IDT	Innovation Diffusion Theory
MPCU	Model of PC Utilization
SCT	Social Cognitive Theory
UTAUT	Unified Theory of Acceptance and Use of Technology
PE	Performance Expectancy
EE	Effort Expectancy
SI	Social Influence
FC	Facilitating Conditions.
BI	Behavioral Intention
AUS	Actual Use
TPS	Transaction Processing System
MIS	Management Information System
AIS	Accounting Information System
DSS	Decision Support System
GDSS	Group Decision Support System
EIS	Executive Information System
IOIS	Intelligence Organizational Information System

EFA	Exploratory Factor Analysis
CFA	Confirmatory Factor Analysis
MSA	Measure of Sampling Adequacy
KMO	Kaiser-Meyer-Olkin
SEM	Structural Equation Modeling
AMOS	Analysis of Moment Structure

CHAPTER ONE
INTRODUCTION

1.1 Introduction

This chapter outlines the sections through the first chapter of this study. It gives the reader description about the background of the research problem, research objectives, research questions, significance of the study, and organization of chapters.

1.2 Background of the Study

People in the different walks of life have to make decisions almost every day. Such decisions are made for various reasons and at all levels including but not limited to personal, social, economic and political issues. It is thus essential to look into the issue of decision making especially with the latest advancement in technology that has had an impact on the traditional handling of decision making in past decades. Decision processing, in particular, has taken new dimensions worth of study. With the advent of computers, many aspects of life have been deeply revolutionized. In particular, the nature of decision processing has changed, especially when these computers are combined with the repository (database servers) of current, available and needed data. All of this support in making decisions by means of automated systems is now known as computer-based information system (CBIS).

This study is concerned with CBIS by making use of technology adoption (refusal/resistance) and acceptance decisions. This study investigates the acceptance

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