









DEVELOPING A MODEL OF INFORMATION SYSTEMS SUCCESS EVALUATION FOR ASYCUDA CUSTOMS INFORMATION SYSTEM IN JORDAN

MOHAMMADNOUR MOSBAH RADWAN ALJARRAH











THESIS SUBMITTED IN FULFILLMENT OF THE REQUIRMENT FOR THE DEGREE OF DOCTOR OF PHILOSOPHY (MANAGEMENT INFORMATION SYSTEM)

FACULTY OF MANAGEMENT AND ECONOMICS UNIVERSITI PENDIDIKAN SULTAN IDRIS

2018





















ABSTRACT

The objective of this research is to propose a model which investigates the relationship between the determining factors and Perceived Usefulness ASYCUDA information system in customs sector in Jordan. This research addresses seven determining factors. These factors are System Quality, Information Quality, Service Quality, System Use, User Satisfaction, Data Interchange Quality, and Training. Development of the model was based on DeLone and McLean information system success model. This research applies a quantitative research method, using questionnaire as the research instrument. A sample of 257 employees who used ASYCUDA were chosen using simple random technique. Data were analysed using descriptive statistics, correlation, factor analysis and multiple regression analysis. The findings of this research have demonstrated that all seven constructs were significantly correlated and predicted Perceived Usefulness of ASYCUDA information system. Three correlated relations were identified to have the largest unique contribution which are Perceived Usefulness and User Satisfaction (β = 0.796), Perceived Usefulness and System Use ($\beta = 0.759$), and System Use and User Satisfaction ($\beta = 0.711$). However, two relations, though significantly correlated, have the last unique contribution which are Information Quality and Perceived Usefulness ($\beta = 0.296$) and System Quality and Perceived Usefulness ($\beta = 0.242$). As a conclusion, this study will help Jordan customs to evaluate the success of their information system to identify the possible differences between the goals of the implementation of ASYCUDA and what they actually gained from the information system. This study will support Jordan customs in ensuring that all customs employees have the knowledge, skills, and support in order to work in a higher efficiency atmosphere which creates motivation for work and production. The study also implicates that the developed model can enhance the employees performance and









the effectiveness of ASYCUDA information system.

















PEMBANGUNAN MODEL PENILAIAN KEJAYAAN SISTEM MAKLUMAT BAGI SISTEM MAKLUMAT KASTAM ASYCUDA DI **JORDAN**

ABSTRAK

Objektif kajian ini adalah untuk mencadangkan model bagi mengkaji hubungan di antara faktor-faktor penentu dan Jangkaan Kebergunaan bagi sistem maklumat ASYCUDA dalam sektor kastam di Jordan. Kajian ini melihat kepada tujuh factor penentu. Faktor-faktor ini terdiri daripada Kualiti Sistem, Kualiti Maklumat, Kualiti Perkhidmatan, Penggunaan Sistem, Kepuasan Pengguna, Kualiti Pertukaran Data, dan Latihan. Pembangunan model ini adalah berdasarkan kepada model kejayaan sistem maklumat DeLone dan McLean. Kajian ini mengaplikasikan kaedah penyelidikan kuantitatif, dengan menggunakan borang soalselidik sebagai instrumen kajian. Sample kajian 257 orang pekerja yang menggunakan ASYCUDA telah dipilih secara rawak mudah. Data di analisis menggunakan kaedah statistik deskriptif, korelasi, analisis faktor dan analisis regrasi berganda. Dapatan kajian ini menunjukkan bahawa kesemua tujuh konstruk mempunyai korelasi yang signifikan dan dapat meramal Jangkaan Kebergunaan bagi sistem maklumat ASYCUDA. Tiga hubungan yang 05-4506 didapati memberikan sumbangan unik yang paling besar iaitu Jangkaan Kebergunaan bupsi dan Kepuasan Pengguna (β = 0.796), Jangkaan Kebergunaan dan Penggunaan Sistem $(\beta = 0.759)$, dan Penggunaan Sistem dan Kepuasan Pengguna $(\beta = 0.711)$. Namun begitu, dua hubungan, walaupun is signifikan, memberikan sumbangan unik yang paling sedikit iaitu Kualiti Maklumat dan Jangkaan Kebergunaan ($\beta = 0.296$) dan Kualiti Sistem dan Jangkaan Kebergunaan ($\beta = 0.242$). Sebagai kesimpulan, kajian ini dapat membantu kastam di Jordan untuk menilai kejayaan sistem maklumat mereka dengan mengenalpasti perbezaan yang wujud di antara matlamat pengimplementasian ASYCUDA dengan apa yang boleh mereka dapat daripada sistem maklumat tersebut. Kajian ini boleh membantu kastam Jordan dalam memastikan kesemua pekerja kastam mempunyai pengetahuan, kemahiran dan sokongan untuk bekerja dalam persekitaran yang lebih efisien dan dalam masa yang sama mewujudkan motivasi untuk bekerja. Kajian ini juga mencadangkan bahawa model yang dibangunkan boleh meningkatkan prestasi pekerja dan keberkesanan sistem maklumat ASYCUDA. Oleh itu, model yang dibangunkan ini boleh digunapakai dalam kajian-kajian akan datang yang berkait dengan ASYCUDA.

















CONTENTS

	Page
DECLARATION	ii
DECLARATION OF THESIS	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
ABSTRAK	vi
TABLE OF CONTENTS	xii
LIST OF TABLES	XV
LIST OF FIGURES	xvi
LIST OF ABBREVIATIONS	xvii









1 1.1 Introduction 1.2 Research Background 3 **Problem Statement** 6 1.3 9 Research Objectives 1.4 1.5 **Research Questions** 10 11 1.6 Research Hypotheses 1.7 12 Research Framework 1.8 Research Significance 13 1.9 Research Scope and Limitations 14 1.10 **Operational Definition** 15 1.11 Thesis Structure 17 19 1.12 Summary

















CHAPTER 2 LITERATURE REVIEW

	2.1	Introduction	21
	2.2	Overview on SYCUDA System	22
	2.3	ASYCUDA System in Jordan	23
	2.4	Overview on IS and ASYCUDA workflow	25
		2.4.1 Overview on IS	26
		2.4.2 ASYCUDA workflow	28
	2.5	Overview of IS Success Models	30
		2.5.1 Technology Acceptance Model (TAM)	31
		2.5.2 Technology Acceptance Model (TAM2)	32
05-4506832	pustaka.ups	2.5.3 Unified Theory of Acceptance and Use of Technology (UTAUT) Inun Kampus Sultan Abdul Jalil Shah PustakaTBainun	33 ptbupsi
		2.5.4 Wixom and Todd (2005) IS Success Model	34
		2.5.5 Sabherwal, Jeyaraj, and Chowa IS Success Model	35
		2.5.6 Technology Acceptance Model (TAM3)	35
		2.5.7 Gable, Sedera, and Chan IS-Impact Model (2008)	36
		2.5.8 DeLone and McLean (2003) IS Success Model	37
	2.6	IS Success Researches	41
	2.7	Researches on ASYCUDA and Customs IS	48
	2.8	Constructs of the Proposed Research Model	50
		2.8.1 System Quality	50
		2.8.2 Information Quality	55
		2.8.3 Service Quality	60
		2.8.4 Users' Satisfaction	62
		2.8.5 System Use	64
		2.8.6 Perceived Usefulness	68

















	2.8.7	Data Interchange Quality	70
	2.8.8	Гraining	71
2.9	Concep	tualization of Framework	72
2.10	Gaps in	the Literature	80
2.11	Summa	ry	82
CHAPTER 3	RESEA	ARCH METHODOLOGY	
3.1	Introdu	ction	83
3.2	Researc	ch Design	84
3.3	Populat	ion and Sampling	85
3.4	Questio	onnaire Development	89
3.5	Pilot St	udy	96
	3.5.1	Content Validity	98
05-4506832 pustaka.u	3.5.2 psi.edu.my 3.5.3	Reliability Scores from Pilot Study Reliability Scores from Pilot Study Ramous Sultan Abdul Jalil Shah Validity Scores from Pilot Study	99 ptbups
3.6	Data Co	ollection	102
3.7	Data A	nalysis	103
	3.7.1	Descriptive Statistics	103
	3.7.2	Reliability Test of Actual Data	104
	3.7.3	Validity Test of Actual Data	105
	3.7.4	Factor Analysis	106
		3.7.4.1 System Quality	106
		3.7.4.2 Information Quality	107
		3.7.4.3 Service Quality	108
		3.7.4.4 User Satisfaction	109
		3.7.4.5 System Use	110
		3.7.4.6 Perceived Usefulness	111



















	3.7.4.7 Data Inter change Quality	112
	3.7.4.8 Training	113
	3.7.5 Correlation Analysis	114
	3.7.6 Multiple Regression Analysis	115
3.8	Summary of Research Objectives, Research Questions, Hypotheses, and Data Analysis	117
3.9	Summary	120
CHAPTER 4	FINDINGS	
4.1	Introduction	122
4.2	Sample Characteristics	123
4.3	Descriptive Statistics	125
) 05-4506832	4.3.1 System Quality 4.3.2 Information Quality Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah Service Quality PustakaTBainun	125 126 ptbup:
	4.3.4 Users' Satisfaction	129
	4.3.5 System Use	131
	4.3.6 Perceived Usefulness	133
	4.3.7 Data Interchange Quality	134
	4.3.8 Training	136
4.4	Correlation Analysis	137
4.5	Testing For Normality	137
4.6	Test of Collinearity	139
4.7	Multiple Regression Analysis	139
	4.7.1 Results of Regression Analysis for Relationships between Variables	144
	4.7.1.1 Relationships of System Quality with System Use, Users' Satisfaction and Perceived Usefulness	144













		S	System Use, Users' Satisfaction, Perceived Jsefulness	148
			Relationships of Service Quality with System Use, Users' Satisfaction and Perceived Usefulness	152
		4.7.1.4	Relationship between System Use and Users' Satisfaction	155
		4.7.1.5	Relationships of System Use and Users' Satisfaction with Perceived Usefulness	155
		4.7.1.6	Relationship between Data Interchange Quality and Perceived Usefulness	156
		4717	•	157
		4.7.1.7	Relationship between Training and Perceived Usefulness	
		4.7.1.8	Relationships of Perceived Usefulness with System Use and Users' Satisfaction	158
	4.8	8 Summary		160
4506832	CHAPTER 5	DISCUSS	Perpustakaan Tuanku Bainun IONS AND CONCLUSIONS PustakaTBainun	ptbupsi
4506832		DISCUSS	IONS AND CONCLUSIONS	ptbupsi
4506832	CHAPTER 5	Introductio	IONS AND CONCLUSIONS	
4506832	CHAPTER 5 5.1	Introduction Discussion	IONS AND CONCLUSIONS	161
4506832	CHAPTER 5 5.1	Introduction Discussion 5.2.1 Sys	on Findings	161 162
4506832	CHAPTER 5 5.1	Introduction Discussion 5.2.1 Sys 5.2.1.1	ions and conclusions on on Findings etem Quality (H1a, H1b, H1c) Relationship between System Quality and	161 162 164
4506832	CHAPTER 5 5.1	Introduction Discussion 5.2.1 Sys 5.2.1.1	in on Findings tem Quality (H1a, H1b, H1c) Relationship between System Quality and System Use Relationship between System Quality and Users' Satisfaction	161 162 164 164
4506832	CHAPTER 5 5.1	Introduction Discussion 5.2.1 Sys 5.2.1.1 5.2.1.2	ion on Findings Item Quality (H1a, H1b, H1c) Relationship between System Quality and System Use Relationship between System Quality and Users' Satisfaction Relationship between System Quality and Users' Satisfaction	161 162 164 164
4506832	CHAPTER 5 5.1	5.2.1.3 5.2.2 Info	ion on Findings Item Quality (H1a, H1b, H1c) Relationship between System Quality and System Use Relationship between System Quality and Users' Satisfaction Relationship between System Quality and Perceived Usefulness	161 162 164 164 166

















	5.2.2.3 Relationship between Information Quality and Perceived Usefulness	171
	5.2.3 Service Quality (H3a, H3b, H3c)	174
	5.2.3.1 Relationship between Service Quality and System Use	174
	5.2.3.2 Relationship between Service Quality and Users' Satisfaction	175
	5.2.3.3 Relationship between Service Quality and Perceived Usefulness	176
	5.2.4 Users' Satisfaction (H4)	178
	5.2.5 System Use (H5a, H5b)	179
	5.2.6 Perceived Usefulness (H6a, H6b)	181
	5.2.7 Data Interchange Quality (H7)	182
	5.2.7 Training (H8)	183
05-4506832	5.3 Implications of the Study pustaka.upsi.edu.my 5.3.1 Theoretical Implications Shah PustakaTBainun	187
	5.3.2 Managerial Implications	189
	5.4 Suggestions for Future Research	190
	5.5 Conclusion	192
REF	ERENCES	194

APPENDICES



















LIST OF TABLES

	Table N	No.	Page
	2.1	Summary of IS Success Models	40
	2.2	Summary of IS Success Researches	47
	2.3	Different Measures for System Quality construct	51
	2.4	Clustering of System Quality Measures	53
	2.5	Different Measures for Information Quality construct	56
	2.6	New Measures for Information Quality construct	58
	2.7	Different Measures for Service Quality construct	61
	2.8	Measures for User Satisfaction construct	63
	2.9	Key Influence Factors for EDI	70
05-450	2.10 6832 2.11	Measures for Data Interchange Quality construct pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah Measures for Training Construct PustakaTBainun	71 ptbupsi
	3.1	Population Distribution	89
	3.2	Survey Questionnaire Matrix	91
	3.3	System Quality Items	92
	3.4	Information Quality Items	92
	3.5	Service Quality Items	93
	3.6	User' Satisfaction Items	94
	3.7	System Use Items	94
	3.8	Perceived Usefulness Items	95
	3.9	Data Interchange Quality Items	95
	3.10	Training Items	96
	3.11	Comments on the Survey Questionnaire	99









3.12	Reliability Statistics-Cronbach's Alpha (Pilot Study)	100
3.13	KMO and Bartlett's Test Results (Pilot Study)	101
3.14	Questionnaires Distribution	103
3.15	Reliability Results	104
3.16	KMO and Bartlett's Test Results	105
3.17	System Quality Communalities	107
3.18	Information Quality Communalities	108
3.19	Service Quality Communalities	109
3.20	User Satisfaction Communalities	110
3.21	System Use Communalities	111
3.22	Perceived Usefulness Communalities	112
3.23	Data Interchange Communalities	113
3.24	Training Communalities pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun	113 ptbupsi
3.25	Person's Indices of Correlation	114
3.26	Relationships between Independent Variables and Dependent Variable	116
3.27	Overview of Research Objectives, Research Questions, Hypotheses, and Data Analysis	118
4.1	Distribution of Responses by Organisation	123
4.2	Respondents' (System Experience, Knowledge with IS Use, Gender, Age, and Education)	124
4.3	System Quality by Frequency, Percent, Mean and Standard Deviation	126
4.4	Information Quality by Frequency, Percent, Mean and Standard Deviation	127
4.5	Service Quality by Frequency, Percent, Mean and Standard Deviation	129
4.6	Users' Satisfaction by Frequency, Percent, Mean and Standard Deviation	130



















	4.7	System Use by Frequency, Percent, Mean and Standard Deviation	132
	4.8	Perceive Employees' Performance by Frequency, Percent, Mean and Standard Deviation	134
	4.9	Data Interchange quality by Frequency, Percent, Mean and Standard Deviation	135
	4.10	Training by Frequency, Percent, Mean and Standard Deviation	136
	4.11	Correlations	137
	4.12	Skewness-kurtosis Test	138
	4.13	Shapiro-Wilk Test	138
	4.14	Test of Collinearity	139
	4.15	Results of Multiple Regression Analysis	140
	4.16	Regression of System Quality Dimensions and ASYCUDA Use, User Satisfaction and Perceived Employees' Performance	145
05-4506	4.17	Regression of System Quality Dimensions to Perceived Usefulness Categories	147
05-4506	4.18	Regression of Information Quality Dimensions and ASYCUDA Use, User Satisfaction and Perceived Usefulness	ptbupsi 149
	4.19	Regression of Information Quality Dimensions to Perceived Usefulness Categories	151
	4.20	Regression of Service Quality Dimensions and ASYCUDA Use, User Satisfaction and Perceived Usefulness	153
	4.21	Regression of Service Quality Dimensions to Perceived Usefulness Categories	154
	4.22	Regression of ASYCUDA Use and User Satisfaction with Perceived Usefulness Dimensions	156
	4.23	Regression of Data Interchange Quality and Perceived Usefulness Dimensions	157
	4.24	Regression of Training and Perceived Usefulness Dimensions	157
	4.25	Regression Perceived Usefulness Dimensions with ASYCUDA Use and User Satisfaction	158
	5.1	Hypotheses Testing Results	186





















LIST OF FIGURES

	NO. Figure	Page
	2.1 IPO Model	27
	2.2 Technology Acceptance Model (TAM)	31
	2.3 TAM2 Model	32
	2.4 UTAUT Model	33
	2.5 Wixom and Todd (2005) model	34
	2.6 DeLone and McLean (2003) IS Success Model	38
	2.7 DeLone and McLean (1992) IS Success Model	72
	2.8 Seddon and Kiew (1996) User satisfaction Model	73
	2.9 Seddon (1997) IS Success Model	75
05-450	2.10 The Integrated IS Success Model of Wang and Liu (2005) Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah Pustaka TBainun 2.11 Research Framework	76 ptbupsi
	4.1 Results of Regression Analysis	142
	4.2 Final Research Model	159



















LIST OF ABBRIVIATIONS

ABS Australian Bureau of Statistics

ASYCUDA Automated System for Customs Data

ATT Attitude/Commitment to user involvement

B2C Business to Customer

BIS Business-Intelligence Systems

CA Cognitive Absorption

COM Competence

COMM Communications

CONT Management Control

CPC Customs Procedure Codes



🕽 pustaka.upsi.edu.my







DI-Q Data Interchange Quality

DSS Decision Support System

EDI Electronic Data Interchange

EMP Empathy

ES Enterprise Systems

E-SQ Electronic Service Quality

ESS Executive Support System

G2C Government to Customer

GPS Global Posisining System

INN Task Innovation





















IPO Input, Processing, Output

IQ Information Quality

IS Information Systems

IT Information Technology

JC Jordan Customs

KMO Kaiser-Meyer-Olkin

KMS Knowledge Management Systems

KWS Knowledge Work System

LMS Learning Management System

MBO Management by Objectives

MIS Management Information System

05-45068<mark>QLS</mark> pustaka.upsi.edu.my

Online Learning System

Kampus Sultan Abdul Jalil Shah

PustakaTBainun



OS Office System

PEOU Perceived Ease-of-Use

PROD Task Productivity

PU Perceived Usefulness

REL Reliability

RES Responsiveness

SAT Users' Satisfaction

SD Standard Deviation

SMEs Small and Medium-sized Enterprises

SPSS Statistical Package for the Social Sciences

SQ System Quality





















Srv-Q Service Quality

TAMTechnology Acceptance Model

TPS Transaction Processing System

TRA Training

TTF Task Technology Fit

UNCTAD United Nations Conference on Trade and Development

UTAUT Unified Theory of Acceptance and Use of Technology

VIF Variance Inflation Factor

WCO World Customs Organisation





























CHAPTER 1

INTRODUCTION



Introduction 1.1

Organisations are facing conditions of globalisation and development in Information Technology (IT) and finding themselves in a great need to increase spending on Information Systems (IS) (Odinioha & Chukwuma, 2013). The reasons for the importance of IS are: effective and efficient coordination between departments, access to relevant data and information, improvement in organizational and departmental techniques, management of work activities, cost reduction, profit increase, and time saving benefit to the workforce (Abu Rumman, 2013).

















Many models have been developed by researchers for the purpose of evaluating IS success (Manchanda & Mukherjee, 2011). The appropriate sets of variables that can be used to determine the users' perception of information systems success are still debatable (Rouibah, 2014). Despite the considerable empirical research that was conducted in information system success field, the relationship between the constructs and determinants of information system success are still not sufficiently clear (Jing & Seon, 2013).

The success of information system developed is critical for research and practice (Al-Debei, Jalal, & Al-Lozi, 2013) Therefore, proposing and developing a model for assessing the success of information system is important issue. Many researchers have ₀₅ tried to find a model capable of assessing the success of IS and determining the factors that influence the success of these systems, and the relationships between these factors (Hussein, 2009).

Obtaining the benefits of information systems is important for organisations to success (Al-Adaileh, 2009). Organisations believe that the investment in IS will have a positive impact on the organisation performance (Nazari & Nazari, 2013). Information and technology that produces it are important resources for organisations. Therefore, the productivity of employees will increase the higher the quality of IS, but what is an IS?

Information systems are defined as an integrated system designed to collect, generate, organize, store, retrieve and transmit information within the organisation or





















outside the organisation to support decision-making and control (Laudon & Laudon, 2007). Information systems can support decision-making, coordination and control,

creating new products, analysing, and solving problems (Asemi, Safari & Zavareh, 2011).

The continuous growth and succession of information systems increased the acquisitions

of IS by organisations in all sectors (Nasiri & Farahbod, 2012). Governments and

organisations usually allocated part of the budget to adopt information systems to support

their activities (Rana, Dwivedi, & Williams, 2013). The benefits of information systems

may be tangible or intangible and organisations need to evaluate these benefits (Myrtidis

& weerakkody, 2008).

05 1.2 Research Background

Assessing the success and effectiveness of information systems has attracted the attention of a large number of researchers in various contexts because the need for organisations to assess their investments in information systems (Al-Adaileh, 2009). As a type of information systems, Automated System for Customs Data (ASYCUDA) is recognized for its capabilities in equalizing and facilitating customs services, and increasing the efficacy of customs (Alipour, Moniri & Tanha, 2011). Countries always seek to facilitate trade procedures to reduce business costs for each party involved in the business process by removing the various barriers to trade that accompany the cross-border movement of goods and services (Alipour et al., 2011). This requires the adoption of the best international standards and IT services.



















1

Jordan Customs (JC) is a governmental department that responsible for supporting the national economy, promoting investment, facilitating trade, combating smuggling, protecting local society and environment from hazardous materials, and controlling the movements of passengers, goods, and vehicles crossing the Jordanian Kingdom's borders (Al-ma'aitah, 2013). Like any other organisation, JC department had invested on information systems over the last two decades by implementing the ASYCUDA as a computerized customs management system that covers most foreign trade procedures in Jordan.

ASYCUDA is a computerized customs management system that covers most foreign trade procedures, and that is capable of handling manifests, customs declarations, of accounting procedures (Abadi, Haghtalab, and Danaee, 2014). ASYCUDA is developed by United Nations Conference on Trade and Development (UNCTAD) and used in more than 80 countries in five continents with more than 61019 users around the world and more than 15.000.000 customs clearance operations per year (Salehi, 2012).

Jordan customs started modernnisation in 1997 by the implementation of ASYCUDA++ programme in order to increase revenue collection and to improve integrity and transperency in customs services and it had been fully operational in 1999 and contreputed to simpler customs clearence, simpler release procedures, and the trade statistics were more accurate and up-to-date (Al-ma'aitah, 2013). Jordan customs continued the modernisation programme in 2006 and it had four components: Establishment of single window locations at several border posts, upgrade of from ASYCUDA++ to















ASYCUDAWorld, Capacity strengthening which include the training on how to use the new system and the use of Global Posisining System (GPS) devices on transit vehicles, and Improvement of communications between jordan customs and the business community (Dvorsky, 2006).

The implementation of single windows contributed to phisical renovations of customs offices to accommodate ASYCUDA workflow and co-locate and officers from four government agencies, including Jordan Customs, Ministry of Agriculture, Jordan Standards and Metrology Organisation, and Food and Drug Administration (David, 2013). Memorandums of understanding was established between Jordan customs and the participating government agencies, the objective was to organise cargo processing within ₀₅ the single window framework, especially for management, operational coordination and information exchange functions. This memorandum allowed Jordan customs to conduct administrative supervision of the activities performed by participating government agencies and enhance the exchange of information among all government agencies (David, 2013).

This study aimed to identify and analyse IS concepts required to develop information success model for ASYCUDA information system in customs sector at the individual level in Jordan. The proposed model is based on DeLone and McLean (2003) information systems success model.















1.3 **Problem Statement**

Major advances in information systems have led to change in every industry sector and the governmental organisations are not exceptional and it has taken advantage of the facilities offered by IS (Fan & Yang, 2015). As a governmental organisation, Jordan Customs has worked to improve the efficiency of customs clearance processes and to facilitate trade, the use of information technologies and using better methods and equipments has been prioritized (Dvorsky, 2006).

Executing ASYCUDA in Jordan customs with regard to expected facilities in this system is for execution of mechanization process, trading without paper (David, 2013). ₀₅ But in practice it is observed that customs formalities are still possible by physical referring of clients and by various controls in different bureaus which are against ASYCUDA purposes. This creates a condition in which all expected facilities and capabilities of ASYCUDA system are used.

Jordan customs has introduced an updated version of ASYCUDA system in 2014; this update caused the system to stop functioning which led to the delay of completion of transactions which causing dissatisfaction with the system. Salehi (2012) observed that users of ASYCUDA have not enough confidence in the system. The major challeng was that ASYCUDA is not meeting expectations of carrying out transactions in a paperless environment, and there are instances where a permit, licence, invoice or any required document is uploaded and when it is viewed on the system it is not clear (Palmer, 2016).



















7

In 2011, 2015 and 2016 ASYCUDA system has stopped functioning in Jordan for technical problems. According to Wondemagegne (2014) in his study about customs and revenue reforms in Ethiopia, ASYCUDA was found to frequent breakdowns which result delay in the clearance time. Bangladesh customs found that to huge number of users sometimes server become slow and some records are locked for long time and the whole team find out that sometimes bandwidth is not stable fluctuate within high range (Saifuddin, 2015).

ASYCUDA system provides single window facility. The main objectives of the single window are to establish or increase co-operation between customs, other government agencies and border control authorities in order to electronically share os documents (data) and establish common procedures for processing and control (Paul & Paul, 2014). The main problem in the implementation of single window is referred to the differences in IT infrastructure between Jordan customs and other Jordanian organisations that use ASYCUDA which it make difficult to exchange data among them. According to Alipour et al. (2011), creating the IT infrastructures is required for optimal execution of ASYCUDA and increasing customs efficacy.

Salehi (2012) found that change resistance is one of the problems that face the progress of ASYCUDA implementation and creating some appropriate rules and regulations, appropriate infrastructure, familiarity of staff and clients with ASYCUDA, accurate system input can provide better implementation of ASYCUDA system which increases the customs effectiveness.





















Based on the above discussion, it is noted that there are some problems in the implementation of ASYCUDA system such as technical problems, IT infrastructure, usage problems, satisfaction with the system. These problems may affect the perceived usefulness of the system. Davis, Bagozzi, and Warshaw (1989) defined perceived usefulness as the degree to which a person believes that using a particular system would enhance his or her job performance, and argued that the enhancement of job performance is related to using the system. Venkatesh and Davis (2000) argued that perceived usefulness is refer to comparing what a system is capable of doing with what users need to get done in their job.

Additionally, these problems may affect the usage of ASYCUDA system where

os the IS use is the degree and manner in which staff and customers utilize the capabilities of an information system (Petter, DeLone, & McLean, 2008). Another possible effect of these problems is on the user satisfaction of ASYCUDA system which is the overall evaluation of user's experience in using a system and the potential impact of the system (Al-Marashdeh, Sahari, Zin, & Al-Smadi, 2010).

As to summarise the problem statement, it is postulated that if perceived usefulness of ASYCUDA system does not exist among employees then the employees fail to improve their job performance, which is reflected in the quality of work and the services provided by Jordan customs. These results is contrary to the aim of implementation of the ASYCUDA system and to the Customs Department's policies that



















toups

aimed to providing best services in order to improve the national economy and facilitating trade between Jordan and other countries.

In summary, this research addresses the importance of understanding perceived usefulness from the perspective of employees. Even though employees play a vital role in the progress and success of IS. Therefore, it is important to understand factors that could determine perceived usefulness of ASYCUDA system from the viewpoints of employees in order to improve their work performance and enhance the services provided which helps to achieve the goals and policies of the Jordan customs.

05 1.4 Research Objectives

The main goal of this research is to develop IS success model that can used to measure the perceived usefulness of SYCUDA IS at the individual level. While the objectives of conducting this research are:

- 1- To investigate whether there is a significant relationship between (System Quality, Information Quality, Service Quality, System Use, User Satisfaction, Data Interchange Quality, and Training) and Perceived Usefulness.
- 2- To investigate whether there is a significant relationship between (System Quality, Information Quality, Service Quality, and Perceived Usefulness) and System Use.

















3- To investigate whether there is a significant relationship between (System Quality, Information Quality, System Use, Service Quality, and Perceived Usefulness) and User Satisfaction.

1.5 **Research Questions**

This research is intended to answer the following questions:

- 1- Is there a significant relationship between (System Quality, Information Quality, Service Quality, System Use, User Satisfaction, Data Interchange Quality, and Training)
- Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah of and Perceived Usefulness? PustakaTBainun
 - 2- Is there a significant relationship between (System Quality, Information Quality, Service Quality, and Perceived Usefulness) and System Use?
 - 3- Is there a significant relationship between (System Quality, Information Quality, System Use, Service Quality, and Perceived Usefulness) and User Satisfaction?













1.6 **Research Hypotheses**

In order to address the research questions, the following hypotheses were developed.

H1a: There is a positive relationship between ASYCUDA System Quality and ASYCUDA system Use.

H1b: There is a positive relationship between ASYCUDA System Quality and ASYCUDA system Users' Satisfaction.

H1c: There is a positive relationship between ASYCUDA System Quality and Perceived Usefulness.

H2a: There is a positive relationship between ASYCUDA Information Quality and ASYCUDA system Use.

pustaka.upsi.edu.my Perpustakaan Tuanku Bainun H2b: There is a positive relationship between ASYCUDA Information Quality and ASYCUDA system Users' Satisfaction.

H2c: There is a positive relationship between ASYCUDA Information Quality and Perceived Usefulness.

H3a: There is a positive relationship between ASYCUDA Service Quality and ASYCUDA system Use.

H3b: There is a positive relationship between ASYCUDA Service Quality and ASYCUDA system Users' Satisfaction.

H3c: There is a positive relationship between ASYCUDA Service Quality and Perceived Usefulness.

H4: There is a positive relationship between ASYCUDA system Users' Satisfaction and Perceived Usefulness.



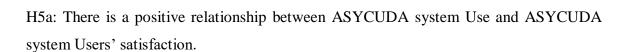












H5b: There is a positive relationship between ASYCUDA system Use and Perceived Usefulness.

H6a: There is a positive relationship between Perceived Usefulness and ASYCUDA system Users' Satisfaction.

H6b: There is a positive relationship between Perceived Usefulness and ASYCUDA system Use.

H7: There is a positive relationship between ASYCUDA Data Interchange quality and Perceived Usefulness.

H8: There is a positive relationship between ASYCUDA users' Training and Perceived Usefulness.











1.7 Research Framework

The research framework indicates the guidelines in building the right approach for this research. The conceptual framework is developed and embraces eight variables, which are used to develop the basic model of relationship among system quality, information quality, service quality, system use, user satisfaction, data interchange quality, training, and perceived usefulness. Discussion on the research framework is presented in chapter two, section 2.9.









1.8 Significance of the Study

Evaluating the success of information system and defining the success factors of information system are important issues for organisations. Research on ASYCUDA was hoped to provide a complete documentation to evaluate the success of this information system. The tools and model developed in this research can be used to gather information in evaluating the success of ASYCUDA. The collected data was analysed to provide a profile in measuring the success of ASYCUDA in other environment.

This study will contribute to IS success model development series by employing IS success model to evaluate the success of ASYCUDA system. This study will add to the knowledge base by developing and validating a model that explains the factors which affect the success of ASYCUDA system. The significance of the research findings is in the benefit of the results to both researchers and practitioners in this field. The determination of the factors affecting ASYCUDA success will form a base for more research in other environment.

The findings of this study will support the organisations that use ASYCUDA system with guidelines for implementing high quality information system which is more useful and effective, and that meet the needs and expectations of users. In addition, it will promote awareness among organisations by providing evidence that ASYCUDA plays a significant positive role in improving the quality of performance.













1.9 Research Scope and Limitations

The aim of this study is to investigate proposed model in testing the success of ASYCUDA system in Jordan. The study concentrated in measuring the system quality, information quality, service quality of ASYCUDA system and how these constructs affect the user's satisfaction, usage of ASYCUDA and perceived usefulness. In addition, to evaluate the influence of data interchange quality, training, using ASYCUDA and user's satisfaction on perceived usefulness. This study tries to investigate factors that could contribute to the success of ASYCUDA system in Jordan.

The purpose of this research is to identify factors that are significant among the of adoption of DeLone and McLean (2003) IS success model, in addition to the selected variables and relationships to be included in the proposed model. As this research is confined in the area of IS success, the model developed in this research is encouraged to be extended to other areas of IS in general and in customs sector in particular as to enrich the theoretical contributions of knowledge in the future.

1.9.2 Research Limitations

 The major limitation of this study is that it was restricted to the Jordanian organisations that use the ASYCUDA system. Therefore, it was restricted within the national boundary of the study setting.



















- According to various differences (social and cultural values) between Jordan and other countries, especially non Arabic countries, the findings of this study could be generalised but with caution.
- 3. Due to time and money constrains, respondents' selection was limited to the employees that working in main cities in Jordan with few number of respondents that working at the border customs centres.
- 4. The demographic and organisational factors were not taken into consideration, although pervious researches have discussed the effect of these factors on the system use and users' satisfaction.

Operational Definition

The following definitions are provided to ensure the understanding of these terms throughout the study:

1. System Quality (SQ): The system quality represents the information processing quality, the functions and features of the system, and the software is easy to use and flexible (Gorla, Somers, and Wong, 2010). System quality represents the quality of the ASYCUDA system itself. The system quality measures in this study are Ease to Use, Reliability, Flexibility, Accessibility, Searchability, and Interaction.















- 2. Information Quality (IQ): Petter, DeLone, and McLean (2008) defined information quality as "the desirable characteristics of an information system outputs. Information quality represents the quality of the information of ASYCUDA system. The information quality measures in this study are Accuracy, Consistency, Reliable, Objective and believable, Useful and helpful, Up to date, Understandable and clear, and Secure.
- 3. Service Quality (Srv_Q): deals with the competency of IT staff, their responsiveness to deal with problems associated with the system, and the attitude and degree of professionalism by which problems are resolved (Prybutok, Zhang, & Ryan, 2008). The service quality measures in this study are: (Reliability (REL), Responsiveness (RES), Communications (COMM), Empathy (EMP), and Attitude/Commitment to user involvement (ATT), Competence (COM).
 - 4. Data Interchange quality (DI-Q): represents the quality of electronic data interchange between Jordanian organisations that used ASYCUDA and other agencies or organisations inside or outside Jordan. The data interchange quality measures in this study are: Technological resources, Management support and Perceived benefits.
 - 5. Training (TRA): refers to the level of training that employees have received on ASYCUDA system. The training measures in this study are: Level of training, Organisation support and Training material.







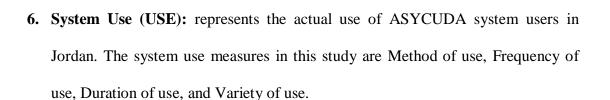












- 7. Users' Satisfaction (SAT): represents the user's perception of ASYCUDA system. User satisfaction measures in this study are: the system meets and exceeds user needs and expectations, the system helps user to do his job with minimal time and effort, the system is effective and useful for user, in general the user is satisfied with the system.
- 8. Perceived Usefulness (PU): is used here in this research as a measure for employee's performance achieved from using ASYCUDA system based on employees' perspective. The perceived usefulness measures in this study are:

 Task Productivity (PROD), Task Innovation (INN), Customer Satisfaction (CSAT), and Management Control (CONT).

1.11 Thesis Structure

The structure of this thesis is outlined based on the following manner:

Chapter One – Introduction

This chapter covers on the nature of the study. It discusses on the background of the study, problem statement, research objectives, research questions, research hypotheses,



















scope and limitations of the study, significant of the research, and the operational definitions.

Chapter Two - Literature Review

Chapter two elaborates on ASYCUDA IS, comparing different IS success models, researches on IS success, researches based on Delone and McLean IS success model, the predictor and the criterion variables that will be utilized in this research. The selection of these determinants were derived from past literatures written by authors who have specialized in the study of IS success. Finally, this chapter discusses the research framework.



Chapter Three – Research Methodology

This chapter addresses the data collection procedures and methods on how this research is conducted. This section contains some of the justifications on what type of research will be investigated, the research design, software for data analysis, the research instrument, the operationalization of the constructs, the sampling techniques, pilot study and explanation of the reliability and validity of the questionnaire before the actual practice of collecting data takes places.

Chapter Four – Findings

This chapter reports the results of testing the conceptual model and hypotheses and to support the research questions and objectives that have been decided. The output of this

















research is also discussed in this study to find the similarities with previous study done on this field.

Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah

Chapter Five – Discussions and Conclusion

This section discusses the overall empirical findings and suggests the implications and contributions to help interested and dedicated parties in improving the quality of ASYCUDA IS and improving employees performance. This chapter concludes by recommending and suggesting avenues for the possibilities of conducting future research in order to strengthen the theoretical knowledge and to contribute to a broader explorations and advances on the accuracy of the predictions of this subject matter.



1.12 **Summary**

IS has an important role in organisations and it has effect on the business operations. Evaluating the success of information systems has been considered as one of the most important issues in information system field. Many models have been developed by researchers for the purpose of evaluating IS success. The success of information system developed is critical for research and practice.

This research addresses the importance of understanding perceived usefulness from the perspective of employees. Even though employees play a vital role in the progress and success of IS. Therefore, it is important to understand factors that could





















determine perceived usefulness of ASYCUDA system from the viewpoints of employees in order to improve their work performance and enhance the services provided which helps to achieve the goals and policies of the Jordan customs. The theoretical framework that guided this study is Delone and McLean (2003) information system success model.

In order to develop a ground for developing theoretical framework of this study, more knowledge about ASYCUDA system, review of different information system success models, review of the studies that used DeLone and McLean (2003) model, and identify the key variables for research will be discussed in next chapter.











