CS\$ 04/14

# A STUDY OF BARRIERS FOR INFORMATION SHARING IN SRI LANKAN E-GOVERNMENT INITIATIVE

S. L. Welgama

(09/9117)



Thesis submitted in partial fulfillment of the requirements for the degree of Master of Business Administration in e-Governance



Department of Computer Science & Engineering

University of Moratuwa Sri Lanka

December 2011

004 "11"

TH 3132

#### **DECLARATION**

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any University or other institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

6

27/4/2014

S. L. Welgama

Date

I have supervised and accepted this thesis for the award of the degree.

UOM Verified Signature

Dr. Chandana Gamage

29/04/2014

(Research Supervisor)

Date

### **COPYRIGHT STATEMENT**

I hereby grant the University of Moratuwa the right to archive and to make available my thesis in whole or part in the University Libraries in all forms of media, subject to the provisions of the current copyright act of Sri Lanka. I retain all proprietary rights, such as patent rights. I also retain the right to use in future works (such as articles or books) all or part of this thesis.

G Color

29/4/2014

S. L. Welgama

Date

#### **ABSTRACT**

This study investigates the barriers that influence participation in electronic information sharing among Sri Lankan Government organizations. Information sharing has the potential to improve efficiency in government operations and improved services to the citizens. Although electronic information sharing creates significant benefits government organizations face several barriers to electronic information sharing. The success of electronic information sharing initiatives requires a detailed examination of these barriers. After reviewing the literature on interagency information sharing models and theories related, within this study it was suggested that government organization's participation in electronic information sharing will be influenced by organizational factors, technological factors and external factors. For this study, data was collected from Sri Lankan Government organizations which have implemented e-Government projects. Survey data was analyzed to test the proposed research framework and hypotheses. The findings suggest that organizational, technological and external factors act as barriers for inter- government electronic information sharing. This research has important implications for the e-Government participated organizations. Based on the factors identified in this study, programs can be designed to increase inter-government information sharing. Moreover, these findings can be used to develop strategies to enhance electronic information sharing initiatives in Sri Lanka.

Keywords: Electronic Information Sharing, Government organizations, Organizational factors, Technological factors, External factors

### **ACKNOWLEDGEMENT**

I wish to express my thankfulness to all those who have helped me in successfully completing my research study on "A Study of Barriers for information sharing in Sri Lankan e-government initiative".

First a fall, I wish to thank my research supervisor Dr. Chandana Gamage, MBA in e-Gov Course Co-ordinator and Head of the Department of Computer Science and Engineering, University of Moratuwa, for the continuous support, encouragement and attention that was extended to me in realizing the research objectives.

Further I wish to convey my special gratitude to the public sector employees who helped me by filling out the survey. The unfair courtesy and cooperation given by the employees and management working in the selected government organizations in Colombo, Sri Lanka, by answering the lengthy questionnaire is very much appreciated.

Furthermore my earnest thanks to the Senior Lecturer, Mrs. Vishaka Nanayakkara, academic and non-academic staff of the Department of Computer Science and Engineering, University of Moratuwa, for the guidance a resources provided to me in bringing this study a success.

A very special note of thanks should go to my friends Viraj and Priyanga, for their great support given for the data analysis and for encourage me to finish this research.

My deepest appreciation should go to my loving husband Hemantha and my two daughters, Pabasarini and Nethrasini for all the encouragement, care and unconditional support given to me throughout the good and bad times during this research.

Finally I wish to convey my heartfelt thanks to all those who helped me in many ways whose names have not been mentioned above, but were instrumental in bringing this study a success.

## TABLE OF CONTENTS

		Page	
Di	ECLA	RATIONi	ί
C	OPYF	UGHT STATEMENTii	i
Al	BSTR	ACTiii	i
		DWLEDGEMENTiv	
LI	ST O	F FIGURESvii	ĺ
LI	ST O	F TABLESviii	ί
LI	ST O	F ABBREVIATIONSix	
1	INT	RODUCTION1	
•			
	1.1	Chapter Overview	
	1.2	Background and Motivation	
	1.3	Research Question	
	1.4	Objectives of the Research 6	
	1.5	Research Design	
	1.6	Importance and Benefits of the Study	;
	1.7	Assumptions and limitations9	
	1.8	Structure of the Thesis	)
2 LITERATURE REVIEW		ERATURE REVIEW11	L
	2.1	Chapter Overview11	
	2.2	Previous Models of Interagency Information Sharing11	
	2.3	Theoretical Foundation	;
3	ME	THODOLOGY OF STUDY26	i
	3.1	Overview of Chapter26	
	3.2	Research Framework	,
		3.2.1 Organizational Factors	,
		3.2.2 Technical Factors	
		3.2.3 Environmental Factors	)

	3.3	3 Operational Definitions31		
		3.3.1 Participating in electronic information sharing	31	
		3.3.2 Organizational Factors - Organizational Culture	31	
		3.3.3 Technical Factors - Infrastructure	36	
		3.3.4 Technical Factors - Cost	88	
		3.3.5 Technical Factors - Security4	10	
		3.3.6 External Factors - Rules and Regulations	11	
	3.4	Hypothesis Development4	14	
	3.5	Method of Research4	15	
		3.5.1 Steps of Research Methodology	15	
	3.6	Questionnaire Instrument Development4	17	
	3.7	Data Collection4	19	
	3.8	Sampling5	50	
	3.9	Analysing Data5	51	
4 ANALYSIS AND INTERPRETATION		AT VOIC AND INTEDDDETATION	:2	
4	AINA	ALISIS AND INTERPRETATION	)4	
4	4.1	Overview of Chapter		
4			52	
4	4.1	Overview of Chapter5	52 52	
4	4.1 4.2	Overview of Chapter	52 52 57	
4	4.1 4.2	Overview of Chapter	52 52 57	
4	4.1 4.2	Overview of Chapter	52 52 57 57	
5	4.1 4.2 4.3	Overview of Chapter	552 552 557 557 559 660	
	4.1 4.2 4.3	Overview of Chapter	52 52 57 57 59 60	
	4.1 4.2 4.3 4.4 CON	Overview of Chapter	552 552 557 557 559 660 65	
	4.1 4.2 4.3 4.4 CON	Overview of Chapter	552 552 557 557 559 660 655	
	4.1 4.2 4.3 4.4 CON 5.1 5.2	Overview of Chapter	52 57 57 57 59 60 <b>65</b> 65	
5	4.1 4.2 4.3 4.4 CON 5.1 5.2 5.3 5.4	Overview of Chapter	52 57 57 57 59 60 <b>65</b> 65 65	

# LIST OF FIGURES

	Page
Figure 1.1 Objectives of Government Re-engineering program	5
Figure 1.2 Public sector re-engineering projects as at September 1, 2009	6
Figure 2.1 Theoretical Model of Interagency Information Sharing	14
Figure 2.2 Extended Theoretical Model of Interagency Information Sharing	16
Figure 3.1 Research Framework	27

## LIST OF TABLES

	Page
Table 2.1 Benefits and Barriers Associated with Interagency Information Sharing	12
Table 2.2 Summary of Factors that Influence Adoption of Organizational and	24
Table 2.3 Summary of Factors that Influence Adoption of Organizational and	25
Table 3.1 Research Variables and Dimensions	30
Table 3.2 Research Variables and Dimensions associated with questions	43
Table 3.3 Instrument Measures of Independent Variable - Organizational Factors -	
Organizational Culture	47
Table 3.4 Instrument Measures of Independent Variable – Technical Factors	48
Table 3.5 Instrument Measures of Independent Variable – External	49
Table 3.6 Instrument Measures of Dependent Variable – Information Sharing	49
Table 3.7 Selected organizations for the survey	50
Table 4.1 Reliability Test for Independent Variables such as Organizational Culture	54
Table 4.2 Reliability Test for Independent Variables such as Infrastructure, Costs, S	ecurity
and Rules and regulations	55
Table 4.3 Reliability Test for Dependent Variable - Information Sharing	56
Table 4.4 Number of employees surveyed	57
Table 4.5 Percentage of information shared electronically	58
Table 4.6 Perceived benefits of information sharing.	59
Table 4.7 Pearson Correlation - Organizational Factors and Information Sharing	60
Table 4.8 Pearson Correlation - Technical Factors and Information Sharing	62
Table 4.9 Pearson Correlation - External Factors (Rules and Regulations) and Information	mation
Sharing	63
Table 4.9 Summary of Findings	65

## LIST OF ABBREVIATIONS

Abbreviation	Description
IT	Information Technology
SLICTA	Sri Lanka Information Communication Technology Agency