



Scaling Up Usability for Cloud-ERP Adoption: A Study on User-Experience In Sri Lanka

J.M.H.R. Jayathilake
Reg. No.: MS22901194

A THESIS
SUBMITTED TO
SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY
IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF SCIENCE IN INFORMATION MANAGEMENT

December 2024

I certify that I have read this thesis and that in my opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Science.

19/1/2025

Supervisor: Dr. Dasuni Nawinna

Approved for MSc. Research Project:

MSc. Programme Co-ordinator, SLIIT

Approved for MSc:

Head of Graduate Studies, FoC, SLIIT

DECLARATION

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Sri Lanka Institute of Information Technology or to any other institution for assessment for any other purpose.

Sign: 

J.M.H.R Jayathilake

Date:16/12/2024.....

ABSTRACT

Development of a Framework for Legal Reseach using Text Mining

J.M.H.R. Jayathilake

MSc. in Information Management

Supervisor: Dr. Dasuni Nawinna

December 2024

Cloud ERP systems can be viewed as a ladder for growth of the businesses where it helps to gather numerous benefits. Therefore, it is essential for a business to adopt ERPs. Studies show that most of the Sri Lankan businesses do not use Cloud based ERP systems. The growing popularity of cloud-based Enterprise Resource Planning (ERP) systems in organizational settings highlights the need to fully understand the Usability for their implementation. The user experience component of increasing Usability preparedness for cloud-ERP adoption is examined in this study. This study promises to offer insights into improving businesses readiness to successfully deploy cloud-based ERP systems by examining a pain point of Usability and how criteria of usability is helped for scaling up usability through user experience within Sri Lankan context. To capture a range of viewpoints and experiences, the study uses a quantitative methodology that incorporates quantitative questionnaires. The research's conclusions help in the creation of plans for enhancing user experience and promoting the effective implementation of cloud-based ERP systems in business environments.

Keywords: Cloud-ERP, Implementation, Usability, User Experience

ACKNOWLEDGEMENT

I would like to take this opportunity to thank my supervisor Dr.Dasuni Nawinna, Faculty of Graduate Studies and Research, Sri Lanka Institute of Information Technology, for her supportive advice, encouragement and supervision given throughout this period and grateful for the extra knowledge and continuous support given to complete this thesis.

Also I would like to offer my heartfelt gratitude to, Dr. Anuradha Jayakody, Head of the Faculty of Graduate Studies for his vital aspiration and instruction, and also I would like to present my gratitude to Mrs. Suranjini Silva the Research Coordinator, Faculty of Graduate Studies and Research, Sri Lanka Institute of Information Technology for the advice, supervision, and contribution on this research, and all the academic and non-academic members of Graduate Studies and Research, Sri Lanka Institute of Information Technology for their immense support.

And also, I would like to thank all the respondents who took part in this research by responding my questionnaire (IFS ERP Users) by spending their valuable time. And finally, my parents were the greatest support through it all and they should be definitely admired for being my pillars of strength.

TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
List of Figures	viii
List of Tables.....	ix
CHAPTER 1 - INTRODUCTION	1
1.1 Background of the study.....	1
1.2 The Problem Statement	3
1.3 Research Questions	4
1.4 Research Objectives	5
1.5 Research Gap.....	5
1.6 Significance of the study	6
CHAPTER 2 - LITERATURE REVIEW	8
2.1 Introduction	8
2.2 Cloud-based enterprise resource planning systems	8
2.3 Cloud ERP adoption usability	9
2.3.1 Benefits of Cloud ERP systems.....	9
2.3.2 Definition of Usability of a System.....	10
2.3.3 Usability Challenges.....	11
2.3.4 Factors Influencing Adoption.....	11
2.3.5 Enhancing Usability	11
2.4 User Experience Cloud ERP Systems	12
2.4.1 Benefits and Challenges of Cloud ERP Systems.....	12
2.4.2 Importance of User-Centered Design	12
2.4.3 Usability Issues in ERP Systems	13
2.4.4 Optimizing User Experience in Cloud Environments.....	13
2.5 Usability Evaluation ERP Systems.....	14
2.5.1 Criteria on Usability Evaluation	14
2.5.2 Factors Affecting ERP Usability	16
2.5.3 Methods for Evaluating ERP Usability	16
2.5.4 Strategies for Improving ERP Usability	17
2.6 Challenges of Cloud ERP Implementation in Developing Countries	17
2.6.1 Technological Challenges	18
2.6.2 Organizational Challenges.....	18
2.6.3 Environmental Challenges.....	18

2.7	Benefits of Cloud-based ERP systems	19
2.7.1	Cost Efficiency and Scalability	19
2.7.2	Improved Accessibility and Mobility	20
2.7.3	Rapid Implementation and Upgrades	20
2.7.4	Enhanced Security and Compliance	20
2.7.5	Standardization and Process Optimization	20
2.8	Usability criteria ERP systems ISO standards	21
2.8.1	ISO Standards for Usability in ERP Systems	21
2.8.2	Usability Challenges and Solutions in ERP Systems	21
2.8.3	Practical Applications and Case Studies.....	22
2.8.4	Broader Perspectives on Usability Standards	22
2.9	Impact of usability on ERP adoption.....	23
2.9.1	User-Centered Design and ERP Usability	23
2.9.2	Usability Challenges in ERP Systems	23
2.9.3	Impact of Usability on User Acceptance	24
2.9.4	Enhancing ERP Usability through Collaboration and Interaction	24
2.9.5	Qualitative Evaluation Techniques.....	24
2.10	Learnability and ERP System Adoption.....	25
2.10.1	LEARNABILITY	25
2.10.2	Factors Influencing ERP Learnability	26
2.10.3	Organizational Learning and ERP Adoption	26
2.11	Usability and User Experience	26
2.11.1	Broader Perspectives	27
2.12	Operability and user satisfaction in ERP systems	27
2.12.1	Operability.....	27
2.13	Understandability.....	27
2.14	Training and User Satisfaction	28
2.14.1	User Characteristics and Satisfaction	28
2.14.2	System Compatibility and Task Relevance	29
2.14.3	Organizational and Socioenvironmental Factors	29
2.14.4	Benefits, Barriers, and Risks	29
2.15	User Satisfaction as a Measure of Success.....	29
2.16	Usability frameworks for ERP systems in Sri Lanka	30
2.16.1	Technological, Organizational, and Environmental (TOE) Framework.....	30
2.16.2	ERP Systems in Construction and Cost Management	30
2.17	Post-Implementation Success Factors	30
2.17.1	User Satisfaction and Organizational Characteristics	31

2.17.2	Impact of User Training and Attitudes	31
2.17.3	Accounting Information Quality in ERP Environments	31
2.18	Issues of Usability on Cloud ERP Systems	32
CHAPTER 03 - METHODOLOGY		33
3.1	Introduction	33
3.2	Conceptual Framework	34
3.3	Hypotheses Development	35
3.4	Research Design	36
3.5	Operationalization	42
Ethical Considerations		43
3.6	Sampling strategy	44
3.7	Population and Sample	44
3.7.1	Population	44
3.7.2	Sample	44
3.8	Limitation	45
CHAPTER 4 - DATA ANALYSIS AND INTERPRETATION		47
4.1	Introduction	47
4.2	Reliability and Validity Analysis	47
4.2.1	Reliability Analysis: Cronbach's Alpha	47
4.2.2	Validity	48
4.2.3	Normality	48
4.2.4	Discriminant Validity	49
4.3	MODEL FIT ANALYSIS	50
4.3.1	Model Summary	50
4.3.2	ANOVA	52
4.3.3	Chi-Square Tests	52
4.3.4	Pearson's Correlation	53
4.4	Structural Model Analysis	53
4.4.1	Path Coefficients	54
4.4.2	T-statistics and P-values	55
4.4.3	Summary of Key Findings	55
4.5	Conclusion	58
CHAPTER 5 - CONCLUSION AND RECOMMENDATIONS		60
5.1	Conclusion	60
5.2	Recommendation	61
REFERENCES		64
APPENDIX		70

List of Figures

Figure 3 1 Conceptual Framework.....	34
Figure 3 2 Research Design	36
Figure 3 3 Research Approach	37
Figure 4 1 Research Model	57

List of Tables

Table 3 1 Operationalization table.....	42
Table 4 1 Reliability Analysis: Cronbach Alpha.....	47
Table 4 2 Construct Validity: KMO and Bartlett's Test	48
Table 4 3 Tests of Normality: Kolmogorov-Smirnov, Shapiro-Wilk.....	48
Table 4 4 Discriminant Validity: Correlation Matrix	49
Table 4 5 Model Summary	50
Table 4 6 ANOVA Test.....	52
Table 4 7 3 Chi-Square Tests	52
Table 4 8 Pearson's Correlation Tests.....	53
Table 4 9 Path Coefficients	54
Table 4 10 Summary of Key Findings	57