FACTORS AFFECTING ADOPTION OF E-COMMERCE AMONG SRI LANKAN PRIVATE SECTOR EXECUTIVES

By

E.M.S.T. Ekanayake

The Dissertation was submitted to the Department of Computer Science & Engineering of the University of Moratuwa in partial fulfillment of the requirement for the Degree of Master of Business Administration in Information Technology.

Department of Computer Science and Engineering
University of Moratuwa
December 2010
Declaration

I hereby certify that this dissertation does not incorporate, without acknowledgement, any material previously submitted for a Degree or Diploma in any University and to the best of my knowledge and belief, it does not contain any material previously published or written by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans and for the title and summary to be made available to outside organizations.

……………………………                                            ……………………………
E.M.S.T. Ekanayake                                                                      Date
(MBA/IT 08/9055)

To the best of my knowledge, the above particulars are correct.

……………………………..                                             ……………………………
Supervisor                                                                                   Date

University of Moratuwa, Sri Lanka. Electronic Theses & Dissertations
www.thesis.mrt.ac.lk
Abstract

Electronic commerce (E-Commerce) usage in Sri Lanka is increasing due to various developments in the Information and Communication Technology (ICT) sector. Identifying technology adoption factors in the case of E-Commerce and studying their effectiveness in adoption, among Sri Lankan private sector executives, were primary objectives of this research. In order to analyze factors affecting adoption of E-Commerce in Sri Lanka, a self-administered questionnaire was developed and surveyed using a sample of 389 private sector executives employed in Information Technology and Telecommunications, Banking and Finance, and the Manufacturing sectors.

There have been many empirical studies on adoption and diffusion behavior of a new technology. Two well known technology adoption models, the Technology Acceptance Model (TAM) (Davis, 1989) and the Theory of Planned Behavior (TPB) (Ajzen, 1991) were used to identify a suitable research framework. Since trust on online stores or Perceived Risk on online transactions has widely been discussed in previous E-Commerce literature, a combined model of the TAM and the TPB with reference to trust in E-Commerce was used to build the research model and hypotheses.

The survey results revealed that Perceived Ease of Use and Perceived Usefulness have a strong positive correlation with E-Commerce adoption while Subjective Norm and Perceived Behavioral Control have a moderately positive correlation on it. The analysis of findings further revealed that the trust or Perceived Risk in E-Commerce has a significant impact on other E-Commerce adoption factors, Perceived Ease of Use, Perceived Usefulness and Perceived Behavioral Control, except Subjective Norm. In addition, it was found that hi-technology products and digital items maintain the highest preference in the web market. It further revealed that, the majority, almost 95%, of total respondents are willing to experiment with or continue E-Commerce in future. It was recommended that web-stores should take the necessary steps to increase consumer confidence in the E-market in addition to what they offer customers to make online transactions easy and useful.
Keywords

E-Commerce Adoption, TAM, TPB, Trust
Acknowledgement

I wish to express my sincere gratitude to the Department of Computer Science and Engineering, University of Moratuwa, for giving me this opportunity to do an empirical study which was a very valuable experience and quite interesting.

I deeply appreciate Dr. Chathura de Silva my supervisor, Department of Computer Science and Engineering, University of Moratuwa, for his continuous support and guidance provided during the period of this dissertation.

Also I would like to remember with respect Dr. Chandana Gamage and Mrs. Vishaka Nanayakkara of the Department of Computer Science and Engineering, University of Moratuwa for their valuable suggestions, comments and encouragement extended throughout the course. Further, I would like to thank all the members of the Department of Computer Science and Engineering, University of Moratuwa for their kind assistance and support.

I express my thanks and appreciation to my family for their understanding, motivation and support given to make the priority on this by sharing household responsibilities. Last but not least, I would like to thank to all my colleagues and friends who helped me on this dissertation.
# Table of Contents

Declaration .................................................................................................................. i  
Abstract ..................................................................................................................... ii  
Keywords ..................................................................................................................... iii  
Acknowledgement ...................................................................................................... iv  
Table of Contents ...................................................................................................... v  
List of Figures ............................................................................................................ vii  
List of Tables ............................................................................................................. viii  
List of Abbreviations ................................................................................................. ix  

1. Introduction ........................................................................................................... 1  
1.1 Background ........................................................................................................... 1  
1.2 Problem Statement ............................................................................................... 4  
1.3 Research Questions .............................................................................................. 5  
1.4 Research Objectives ............................................................................................ 5  
1.5 Previous Studies ................................................................................................ 6  
1.6 Significance of the Study .................................................................................... 7  
1.7 Research Design .................................................................................................. 8  
1.8 Thesis Chapter Structure ..................................................................................... 8  

2. Literature Review ................................................................................................. 10  
2.1 E-Commerce ....................................................................................................... 10  
2.2 E-Commerce Capability in Sri Lanka .................................................................. 15  
  2.2.1 Status of the ICT sector ................................................................................ 17  
  2.2.2 E-Readiness .................................................................................................. 19  
2.3 IT Adoption Models ............................................................................................ 23  
  2.3.1 Technology Acceptance Model ................................................................... 24  
  2.3.2 Theory of Planned Behavior ........................................................................ 26  
2.4 Trust in E-Commerce .......................................................................................... 28  
2.5 E-Commerce Adoption ....................................................................................... 29  
2.6 Literature Review Summary ............................................................................... 32  

3. Research Methodology ......................................................................................... 35  
3.1 Research Approach ............................................................................................. 35  
3.2 Research Framework ........................................................................................... 38  
3.3 Conceptual Development .................................................................................... 39  
3.4 Research Variables .............................................................................................. 41  
  3.4.1 Independent Variables .................................................................................. 41  
  3.4.2 Dependent Variable ...................................................................................... 44  
3.5 Hypothesis Development .................................................................................... 44  
3.6 Questionnaire Development ............................................................................... 46  
3.7 Questionnaire Validation .................................................................................... 49  

4. Results .................................................................................................................. 52
List of Figures

Figure 2.1: E-Commerce vs Traditional Commerce ........................................... 12
Figure 2.2: E-Commerce Matrix .............................................................................. 13
Figure 2.3: E-Mail and Internet Growth ................................................................. 19
Figure 2.4: Technology Acceptance Model ............................................................. 25
Figure 2.5: Theory of Planned Behavior ................................................................. 27
Figure 3.1: Framework for Adoption and Diffusion of E-Commerce ..................... 39
Figure 3.2: Conceptual Framework for E-Commerce Adoption ............................. 40
Figure 4.1: Barriers to Use E-Commerce ................................................................. 55
Figure 4.2: Main Purpose of Using E-Commerce ................................................... .56
Figure 4.3: Highly Demanded Products ................................................................. 57
Figure 4.4: Normal Distribution of E-Commerce Adoption ................................. 59
Figure 4.5: Normal Distribution of Perceived Ease of Use ................................. 60
Figure 4.6: Perceived Ease of Use Vs E-Commerce Adoption .................................. 60
Figure 4.7: Normal Distribution Perceived Usefulness ........................................ 61
Figure 4.8: Perceived Usefulness Vs E-Commerce Adoption .................................. 62
Figure 4.9: Normal Distribution of Trust ................................................................ 63
Figure 4.10: Trust vs. E-Commerce Adoption ...................................................... 63
Figure 4.11: Normal Distribution of Subjective Norm .......................................... 64
Figure 4.12: Subjective Norm vs. E-Commerce Adoption ..................................... 65
Figure 4.13: Normal Distribution of Perceived Behavioral Control ........................ 66
Figure 4.14: Perceived Behavioral Control vs. E-Commerce Adoption .............. 66
Figure 5.1: Instances of Type I and Type II Errors ................................................. 69
Figure 5.2: The Two Tailed Test ............................................................................. 69
List of Tables

Table 2.1: Computer Literacy of Household Population by Sector and Province... 18
Table 2.2: Overview of E-Readiness Factors........................................................... 20
Table 2.3: E-Readiness Analysis in Sri Lanka......................................................... 21
Table 2.4: Global E-Readiness Analysis (2009)....................................................... 22
Table 2.5: Literature Summary for E-Commerce Adoption Factors ..................... 33
Table 2.6: Main E-Commerce Adoption Factors..................................................... 34
Table 3.1: Main Operational Variables................................................................. 48
Table 3.2: Cronbach’s Alpha of Key E-Commerce Adoption Factors ................. 50
Table 4.1: Response Rate for the Questionnaire.................................................... 53
Table 4.2: Sample Demographics ....................................................................... 53
Table 4.3: E-Commerce Experience ..................................................................... 54
Table 4.4: Barriers to Use E-Commerce ............................................................... 55
Table 4.5: Main Purpose of Using E-Commerce .................................................. 56
Table 4.6: Highly Demanded Products ................................................................ 57
Table 4.7: Likelihood of Future Use ..................................................................... 58
Table 4.8: E-Commerce Adoption - Descriptive Statistics ..................................... 58
Table 4.9: Perceived Ease of Use - Descriptive Statistics ..................................... 59
Table 4.10: Perceived Usefulness - Descriptive Statistics ..................................... 61
Table 4.11: Trust - Descriptive Statistics.............................................................. 62
Table 4.12: Subjective Norm - Descriptive Statistics ........................................... 64
Table 4.13: Perceived Behavioral Control - Descriptive Statistics..................... 65
Table 5.1: Descriptive Statistics for Research Variables ....................................... 70
Table 5.2: Correlations Matrix of Key Research Variables.................................... 72
Table 5.3: Hypothesis Testing Summary .............................................................. 77
Table 5.4: Model Summary ................................................................................. 78
Table 5.5: ANOVA of E-Commerce Adoption Factors ........................................ 79
Table 5.6: Coefficients of E-Commerce Adoption Factors .................................. 80
Table 5.7: Ranking of E-Commerce Adoption Factors ....................................... 81
**List of Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIU</td>
<td>Economic Intelligence Unit</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>TAM</td>
<td>Technology Acceptance Model</td>
</tr>
<tr>
<td>TPB</td>
<td>Theory of Planned Behavior</td>
</tr>
</tbody>
</table>