THE DETERMINANTS OF CUSTOMER INTERNET BANKING RESISTANCE AND THE ROLE OF MEDIATING VARIABLES IN YEMENI UNIVERSITIES.

By

WAIL ABDULALEM MOHAMMED ALASWADI

Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy
Kolej Perniagaan  
(College of Business) 
Universiti Utara Malaysia

PERAKUAN KERJA TESIS / DISERTASI  
(Certification of thesis / dissertation)

Kami, yang bertandatangan, memperakukan bahawa  
(We, the undersigned, certify that)

WAIL ABDULALEM MOHAMMED AL-ASWADI

calon untuk ijazah DOCTOR OF PHILOSOPHY (MANAGEMENT)  
(candidate for the degree of)

telah mengemukakan tesis / disertasi yang bertajuk:  
(has presented his/her thesis / dissertation of the following title):

THE DETERMINANT OF CUSTOMER INTERNET BANKING RESISTANCE AND ROLE OF THE MEDIATING VARIABLES IN YEMENI UNIVERSITIES

seperti yang tercatat di muka surat tajuk dan kulit tesis / disertasi.  
(as it appears on the title page and front cover of the thesis / dissertation).

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada:  
25 Jun 2015. (That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on:  

Pengurusi Viva  : Prof. Dr. Wan Nordin Wan Hussin  
(Chairman for Viva)  
Tandatangan  : (Signature)
Pemeriksa Luar  : Prof. Dr. Mahadzirah Mohamad  
(External Examiner)  
Tandatangan  : (Signature)
Pemeriksa Dalam  : Prof. Dr. Shahizan Hassan  
(Internal Examiner)  
Tandatangan  : (Signature)

Tarikh: 25 Jun 2015  
(Date)
Nama Pelajar (Name of Student) : WAIL ABDULALEM MOHAMMED AL-ASWADI

Tajuk Tesis / Disertasi (Title of the Thesis / Dissertation) : The Determinant of Customer Internet Banking Resistance and Role of the Mediating Variables in Yemeni Universities

Program Pengajian (Programme of Study) : Doctor Of Philosophy (Management)

Nama Penyelia/Penyelia-penyelia (Name of Supervisor/Supervisors) : Prof. Dr. Nik Kamarah Nik Mat
PERMISSION TO USE

In presenting this thesis in fulfilment of the requirement for a Post Graduate degree from Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor(s) or, in their absence, by the Dean of Othman Yeop Abdullah Graduate School of Business where I did my thesis. It is understood that any copying or publication or use of this thesis or parts of it for financial gain shall not be allowed without any written permission. It is also understood that due recognition given to me and to the UUM in any scholarly use which may be made of any material in my thesis.

Request for permission to copy or to make use of materials in this thesis, in whole or in part should be addressed to:

Dean of Othman Yeop Abdullah Graduate School of Business

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman
ABSTRACT

Although internet banking has been widely adopted in developed countries, there is still a low percentage of internet banking adoption in Yemen, indicating a probable high resistance to internet banking. Hence, the objective of this research was to determine the direct predictors (attitude, subjective norm, perceived behavior control (PBC), credibility, trust, compatibility, self-efficacy and government support) of customer resistance, attitude, subjective norm, PBC and credibility towards internet banking. Additionally, this study examined the mediating effects of attitude, subjective norm, PBC, and credibility on the relationship between predictors and customer resistance to internet-banking behavior using Decomposed Theory of Planned Behavior (DTPB). A quantitative research survey was used whereby 900 questionnaires were distributed randomly to University employees. 451 questionnaires were returned, representing a 50% response rate. After screening, 372 useable data sets were analyzed using the Structural Equation Modeling (SEM). The study found five significant predictors of customer resistance (attitude, credibility, compatibility, self-efficacy, and government support); three significant factors predicting attitude (government support, subjective norm and PBC); two significant predictors of SN (government support and self-efficacy); two significant predictors of PBC (compatibility and self-efficacy); and three predictors of credibility (trust, government support and PBC). It was also found that attitude fully mediated the relationship between subjective norm and customer resistance as well as between PBC and customer resistance. Contrastingly, attitude was a partial mediator between the relationship of government support and customer resistance. Likewise, credibility is a full mediator on the relationship between trust and customer resistance; PBC and customer resistance. Credibility also partially mediated the relationship between government support and customer resistance. Finally, the study contributes empirically by validating DTBP as an effective underpinning theory in explaining the internet banking resistance and that government should enact more stringent laws and policies to control the internet banking in Yemen.

**Keywords:** customer resistance, internet banking, credibility, government support, trust.
Walaupun perbankan internet telah diterima pakai secara meluas di negara-negara maju, namun peratusan penggunaan perbankan internet di Yemen masih berada pada tahap yang rendah, menggambarkan satu kemungkinan kekangan yang tinggi bagi perbankan internet. Oleh itu, objektif kajian ini adalah untuk menentukan peramal langsung (sikap, norma subjektif, kawalan tingkah laku tanggapan atau perceived behavior control (PBC), kredibiliti, amanah, keserasian, efikasi kendiri dan sokongan kerajaan) terhadap kekangan pelanggan, sikap, norma subjektif, PBC dan kredibiliti perbankan internet. Selain itu, kajian ini turut menyelidik kesan-kesan pengantara sikap, norma subjektif, PBC, dan kredibiliti terhadap hubungan antara peramal dan kekangan pelanggan ke atas tingkah laku internet-perbankan menggunakan ‘Decomposed Theory of Planned Behavior’ (DTPB). Bancian kajian kuantitatif telah digunakan di mana 900 soal selidik telah diedarkan secara rawak kepada pekerja universiti. 451 soal selidik yang mewakili kadar tindak balas sebanyak 50% telah dikembalikan. Selepas saringan dibuat, hanya 372 set data yang boleh digunakan. Data ini telah dianalisis dengan menggunakan Permodelan Persamaan Berstruktur. Kajian mendapati lima peramal kekangan pelanggan yang signifikan (sikap, kredibiliti, keserasian, efikasi kendiri, dan sokongan kerajaan); tiga faktor signifikan yang meramalkan sikap (sokongan kerajaan, norma subjektif dan PBC); dua peramal SN yang signifikan (sokongan kerajaan dan efikasi kendiri); dua peramal PBC yang signifikan (keserasian dan efikasi kendiri); dan tiga peramal kredibiliti (kepercayaan, sokongan kerajaan dan PBC). Dapatan kajian juga mendapati sikap menjadi pengantara penuh dalam hubungan antara norma subjektif dan kekangan pelanggan serta hubungan antara PBC dan kekangan pelanggan, sebaliknya, menjadi pengantara separa dalam hubungan antara sokongan kerajaan dan kekangan pelanggan. Kredibiliti pula didapati menjadi pengantara penuh dalam hubungan antara kepercayaan dan kekangan pelanggan serta PBC dan kekangan pelanggan, tetapi menjadi pengantara separa dalam hubungan antara sokongan kerajaan dan kekangan pelanggan. Akhir sekali, kajian ini menyumbang secara empirikal dengan mengesahkan DTPB sebagai suatu tiori asas yang efektif bagi menerangkan kekangan pelanggan internet dan kerajaan perlu merangkakan undang-undang dan polisi yang lebih ketat untuk mengawal perbankan internet di Yemen.

Kata kunci: rintangan pelanggan, perbankan internet, kredibiliti, sokongan kerajaan, amanah.
ACKNOWLEDGEMENT

First of all, I would like to express my deep thanks to ALLAH (SWT), the One and only one who granted me the perseverance and ability to successfully complete my PhD. ALHAMDULLAH

First of all, this work would not have been accomplished without the endless support and considerate guidance of my supervisor, Prof. Dr. Nik Kamariah Nik Mat. I am indebted to her for the guidance and encouragement. Her profound knowledge and invaluable advice gave me the opportunity to broaden my knowledge to make significant progress in my PhD work. Indeed her ideal supervision, supportive ideas and continuous motivation brought this work to a successful ending; she withheld no effort in devoting her time and energy throughout I am short of words to express my appreciation for all the constructive comments in the course of writing this thesis and the publications associated with it. The only words that could express my thanks to her are the words of our prophet (peace be upon him) taught us "JAZAKOM ALLAH KHEREN".

Many thanks also go to my viva committee members for their considerate comments and suggestions regarding this study.

I immensely wish to express my sincere gratitude to my parents; firstly, my father, Abdulalem Mohammed Alaswadi and my mother Anisah Abdo Saad Alaswadi. They put me in the right direction from my childhood and encouraged me to pursue my education. Also a special thanks to my grandfather, Abdo Saad Alaswadi for his morale and financial support throughout my higher educational pursuit. I can never repay you for all your unwavering support in my decision to achieve my PhD dream.

It is pertinent to say here that I am indebted to my wife, Asma Salam Ali for her invaluable encouragement, psychological support and patient understanding during the years of my study. In addition, my love and appreciation to my kids Mashaal and Mayar for their understanding and patience. Your smile at the end of every day gave me the strong will to forge ahead; you really helped in your own unique ways to the accomplishment of this work. Thank you for always being here for me and assisting me to reach my goals. I dedicate this thesis to you as well as to my brothers and sisters.

Finally, my deepest appreciation and gratitude to all my friends both from my country and different other countries. I may not be able to mention all your names but I appreciate every bit of your contribution and support. THANK YOU and JAZAKOM ALLH KHEREN.
Table of Contents

<table>
<thead>
<tr>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERTIFICATION OF THESIS WORK</td>
<td>II</td>
</tr>
<tr>
<td>PERMISSION TO USE</td>
<td>IV</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>V</td>
</tr>
<tr>
<td>ABSTRAK</td>
<td>VI</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>VII</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>XXII</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>XXV</td>
</tr>
<tr>
<td>LIST OF APPENDIX</td>
<td>XXVIII</td>
</tr>
<tr>
<td>LIST OF ABBREVIATIONS</td>
<td>XXIX</td>
</tr>
<tr>
<td>CHAPTER ONE: INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>1.1 Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Background of the Study</td>
<td>1</td>
</tr>
<tr>
<td>1.3 Research Problem Statement</td>
<td>1</td>
</tr>
<tr>
<td>1.4 Research Questions</td>
<td>4</td>
</tr>
<tr>
<td>1.5 Research Objectives</td>
<td>10</td>
</tr>
<tr>
<td>1.6 Significance of the Study</td>
<td>11</td>
</tr>
<tr>
<td>1.7 Definition of Key Terms</td>
<td>12</td>
</tr>
<tr>
<td>1.8 Scope of Study</td>
<td>16</td>
</tr>
<tr>
<td>1.9 Organization of Remaining Chapters</td>
<td>16</td>
</tr>
<tr>
<td>CHAPTER TWO: OVERVIEW OF INTERNET BANKING IN YEMEN</td>
<td>19</td>
</tr>
<tr>
<td>2.1 Introduction</td>
<td>19</td>
</tr>
<tr>
<td>2.2 Background of Yemen</td>
<td>19</td>
</tr>
<tr>
<td>2.3 Information Technology and Internet in Yemen</td>
<td>20</td>
</tr>
<tr>
<td>2.4 Development of Banking System in Yemen</td>
<td>23</td>
</tr>
<tr>
<td>2.5 Yemeni Banking System</td>
<td>27</td>
</tr>
<tr>
<td>2.6 Internet Banking in Yemen</td>
<td>29</td>
</tr>
<tr>
<td>2.7 Chapter Summary</td>
<td>30</td>
</tr>
<tr>
<td>CHAPTER THREE: LITERATURE REVIEW</td>
<td>31</td>
</tr>
<tr>
<td>3.1 Introduction</td>
<td>31</td>
</tr>
</tbody>
</table>
3.2 Customer Resistance to Innovation

3.3 Overview of Internet Banking
   3.3.1 Development of Internet Banking
   3.3.2 Diffusion of Internet banking
   3.3.3 Adoption of Internet Banking

3.4 Importance of Banking via Internet
   3.4.1 The Importance of Internet Banking from Bank's Perspective
   3.4.2 The Importance of Internet Banking from Customers’ Perspective
   3.4.3 The Importance of Internet Banking from Financial Perspective

3.5 Customer Resistance to Internet Banking
   3.5.1 Psychological Barriers
      3.5.1.1 Tradition Barriers
      3.5.1.2 Image Barriers
   3.5.2 Functional Barriers
      3.5.2.1 Usage Barriers
      3.5.2.2 Value Barriers
      3.5.2.3 Risk Barriers

3.6 Past Research Models
   3.6.1 Antecedents of Resistance
   3.6.2 Antecedents of Adoption

3.7 Previous Models on Information System
   3.7.1 Theory of Reasoned Action (TRA)
   3.7.2 Theory of Planned Behavior (TPB)
   3.7.3 Technology Acceptance Model (TAM)
   3.7.4 Diffusion of Innovation Model

IX
3.7.5 Motivational Model 84
3.7.6 Model of Personal Computer Utilization 85
3.7.7 Social Cognitive Theory (SCT) 86
3.7.8 Decomposed Theory of Planned Behaviour (DTPB) 86
3.8 Excluded Predictors of Customer Resistance 91
3.9 Antecedents of Customer Resistance to Internet Banking 98
  3.9.1 Attitude 99
    3.9.1.1 Relationship between Attitude and Actual Behavior 100
  3.9.2 Subjective Norms 102
    3.9.2.1 Relationship between Subjective Norms and Actual Behavior 103
  3.9.3 Perceived Behavioral Control 105
    3.9.3.1 Relationship between Perceived Behavioral Control and Actual Behavior 106
  3.9.4 Credibility 108
    3.9.4.1 Relationship between Credibility and Actual Behavior 108
3.10 Antecedents of Attitude 113
  3.10.1 Relationship between Trust and Attitude 115
  3.10.2 Relationship between Compatibility and Attitude 120
  3.10.3 Relationship between Government Support and Attitude 124
3.11 Antecedent of Subjective Norms 126
  3.11.1 Relationship between Trust and Subjective Norm 127
  3.11.2 Relationship between Self-Efficacy and Subjective Norm 129
  3.11.3 Relationship between Government Support and Subjective Norm 131
3.12 Antecedents of Perceived Behavioral Control 132
  3.12.1 Relationship between Trust and Perceived Behavioral Control 134
3.12.2 Relationship between Compatibility and Perceived Behavioral Control 135
3.12.3 Relationship between Self-Efficacy and Perceived Behavioral Control 136
3.12.4 Relationship between Government Support and Perceived Behavioral Control 139

3.13 Antecedents of Credibility 144

3.13.1 Relationship between Trust and Credibility 146
3.13.2 Relationship between Compatibility and Credibility 146
3.13.3 Relationship between Self-Efficacy and Credibility 147
3.13.4 Relationship between Government Support and Credibility 149

3.14 Chapter Summary 149

CHAPTER FOUR: RESEARCH METHODOLOGY 151
4.1 Introduction 151
4.2 Research Design 151
4.3 Theoretical Framework 152
4.4 Hypothesis Development 156

4.4.1 Attitude to Customer Resistance to Internet Banking (H1) 156
4.4.2 Subjective Norm to Customer Resistance to Internet Banking (H2) 157
4.4.3 Perceived Behavior control to Customer Resistance to Internet Banking (H3) 158

4.4.4 Credibility to Customer Resistance to Internet Banking (H4) 159
4.4.5 Trust to Attitude (H5) 160
4.4.6 Compatibility to Attitude (H6) 160
4.4.7 Government Support to Attitude (H7) 161
4.4.8 Trust to Subjective Norm (H8) 162
4.4.9 Self-efficacy to Subjective Norm (H9) 162
4.4.10 Government Support to Subjective Norm (H10) 163
4.4.11 Trust to Perceived Behavior Control (H11) 163
4.4.12 Compatibility to Perceived Behavior Control (H12) 164
4.4.13 Self-efficacy and Perceived Behavior Control (H13) 165
4.4.14 Government Support to Perceived Behavior Control (H14) 165
4.4.15 Trust to Credibility (H15) 166
4.4.16 Compatibility to Credibility (H16) 166
4.4.17 Self-Efficacy to Credibility (H17) 167
4.4.18 Government Support to Credibility (H18) 167

4.5 Mediating Effects of Attitude 168

4.6 Mediating Effects of Subjective Norm 170

4.7 Mediating Effects of Perceived Behavior Control 172

4.8 Mediating Effects of Credibility 173

4.9 Sampling 175
  4.9.1 Population 175
  4.9.2 Sampling Frame 177
  4.9.3 Sample Size 179
  4.9.4 Systematic Random Sampling 180
  4.9.5 Sample Selection 181

4.10 Questionnaire Design 181
  4.10.1 Questionnaire language 182

4.11 Instrumentation 183

4.12 Data Collection Procedure 188

4.13 Data Analysis Procedure 190
  4.13.1 Data Editing and Coding 190
4.13.2 Overall Response Rate

4.13.3 Descriptive Statistics

4.13.3.1 Data Screening

4.13.3.2 Missing Data

4.13.3.3 Outlier

4.13.3.4 Normality

4.13.3.5 Data Transformations
detact

4.13.3.6 Linearity

4.13.3.7 Homoscedasticity

4.14 Response Bias

4.15 Reliability and Composite Reliability

4.15.1 Construct Validity

4.15.2 Content (Face) Validity

4.15.3 Convergent Validity

4.15.4 Discriminant Validity

4.16 Multicollinearity

4.17 Correlation

4.18 Convergent Validity Test (Exploratory Factor Analysis)

4.18.1 Factor Analysis of InDependent Variables

4.18.2 Factor Analysis of Mediating Variables

4.18.3 Factor Analysis of Dependent Variables

4.19 Structural Equation Modeling (SEM)

4.19.1 Justification for using SEM

4.19.2 Types of Variables in SEM

4.19.3 Types of Error
4.20 SEM Procedure

4.20.1 Confirmatory Factor Analysis (CFA)

4.20.2 Goodness of Fit Index

4.21 Hypothesis Testing

4.21.1 Direct Effect

4.21.2 Indirect Effect (Mediating)

4.22 Chapter Summary

CHAPTER FIVE: RESEARCH FINDINGS

5.1 Chapter Overview

5.2 Overall Response Rate

5.3 Descriptive statistics

5.3.1 Profile of the Respondents

5.3.2 Descriptive Statistics of construct

5.4 Data Screening

5.4.1 Missing Data

5.4.2 Outliers

5.4.3 Assumption of Normality

5.4.4 Assumptions of Linearity Relationship

5.4.5 Assumption of Homoscedasticity

5.5 Non-response Bias

5.6 Reliability and Composite Reliability

5.7 Constructs Validity

5.7.1 Multicollinearity / Correlation Matrix of Constructs

5.7.2 Discriminant Validity (Average Variance Extracted)
5.8 Confirmatory Factor Analysis (CFA) of Measurement Model of Endogenous and Exogenous Variables 243

5.8.1 Confirmatory Factor Analysis (CFA) of Measurement Model Endogenous Variables 243

5.8.2 Confirmatory Factor Analysis (CFA) of Measurement Model for Exogenous Variables (Goodness-of-fit indices) 245

5.8.3 Confirmatory Factor Analysis (CFA) of Measurement Model for All Variables 248

5.8.4 Summary of Confirmatory Factor Analysis (CFA) 250

5.9 Hypothesized Model 251

5.10 Generated Structural Model (GSM) 254

5.11 Squared Multiple Correlation for Generated Model 256

5.12 Hypotheses Results 256

5.12.1 Direct Hypothesis Results/Generated Model 256

5.12.2 Mediating Effect/Indirect Effect of Variables Interaction and the Indirect Hypotheses Testing Results of Generated Model 261

5.13 Mediating Effect Result 262

5.13.1 Attitude Mediates Trust and Customer Resistance to Internet Banking (H19) 280

5.13.2 Attitude Mediates Compatibility and Customer Resistance to Internet Banking (H20) 281

5.13.3 Attitude Mediates Government Support and Customer Resistance to Internet Banking (H21) 283

5.13.4 Subjective Norms Mediate Trust and Customer Resistance to Internet Banking (H22) 285
5.13.5 Subjective Norm Mediates Self-Efficacy and Customer Resistance to Internet Banking (H23) 286

5.13.6 Subjective Norms Mediate Government Support and Customer Resistance to Internet Banking (H24) 288

5.13.7 Perceived Behavior Control Mediates Trust and Customer Resistance to Internet Banking (H25) 289

5.13.8 Perceived Behavior Control Mediates Compatibility and Customer Resistance to Internet Banking (H26) 291

5.13.9 Perceived Behaviour Control Mediates Self-Efficacy and Customer Resistance to Internet Banking (H27) 293

5.13.10 Perceived Behaviour Control Mediates Government Support and Customer Resistance to Internet Banking (H28) 295

5.13.11 Credibility Mediates Trust and Customer Resistance to Internet Banking (H29) 297

5.13.12 Credibility Mediates Compatibility and Customer Resistance to Internet Banking (H30) 298

5.13.13 Credibility Mediates Self-Efficacy and Customer Resistance to Internet Banking (H31) 300

5.13.14 Credibility Mediates Government Support and Customer Resistance to Internet Banking (H32) 301

5.13.15 Attitude Mediate Subjective Norms and Customer Resistance to Internet Banking (H40N) 303

5.13.16 Attitude Mediates Perceived Behaviour Control and Customer Resistance to Internet Banking (H41N) 305
5.13.17 Credibility Mediates Perceived Behaviour Control and Customer Resistance to Internet Banking (H42N) 306

5.13 Alternative Model Analysis 310

5.13.1 Goodness-of-Fit Indices of Alternative Model (DTPB) 310

5.14 Overall Comparison between Structural Models 312

5.15 Chapter Summary 316

CHAPTER SIX: DISCUSSION AND CONCLUSION 318

6.1 Introduction 318

6.2 Research Objectives Recapped 318

6.3 Objective One: Discussion on the Level of Customer Resistance towards Internet Banking in Yemen 319

6.4 Objective Two: Discussion on the Antecedents of Customer Resistance (CRS) to Internet Banking in Yemen (Old Paths- Attitude, Subjective Norms, Perceived Behavior Control, Credibility; New Paths - Compatibility, Self-Efficacy, Government Support, and Trust) 319

6.4.1 Significant Direct Antecedents of Customer resistance towards internet banking 320

6.4.1.1 Attitude and Customer Resistance to Internet Banking 320

6.4.1.2 Credibility and Customer Resistance to Internet Banking 321

6.4.1.3 Compatibility and Customer Resistance to Internet Banking 322

6.4.1.4 Self-efficacy and Customer Resistance to Internet Banking 323

6.4.1.5 Government Support and Customer Resistance to internet banking 324

6.4.2 Insignificant Antecedents of Customer Resistance towards internet banking 325

6.4.2.1 Subjective Norm and Customer Resistance to Internet Banking 326
6.4.2.2 Perceived Behavioral Control and Customer Resistance to Internet Banking

6.4.2.3 Trust and Customer Resistance

6.5 Objective Three: Discussion on the Antecedents of Attitude (Old Paths-Trust, Compatibility, and Government Support; New Paths–Subjective Norm, Perceived Behavior Control) towards Customer Resistance to Internet Banking in Yemen.

6.5.1 Significant Direct Antecedents of Attitude

6.5.1.1 Government Support and Attitude

6.5.1.2 Subjective Norms and Attitude

6.5.1.3 Perceived Behavior Control and Attitude

6.5.2 Insignificant Antecedents of Attitude

6.6 Objective Four: Discussion on the Antecedents of Subjective Norm (Trust, Self-Efficacy, and Government Support) in Yemen.

6.6.1 Significant Direct Antecedents of Subjective Norm

6.6.1.1 Self-efficacy and Subjective Norms

6.6.1.2 Government Support and Subjective Norm

6.6.2 Insignificant Antecedents of Subjective Norm

6.6.2.1 Trust and Subjective Norms


6.7.1 Significant Direct Antecedents of Perceived Behavior Control

6.7.1.1 Compatibility and Perceived Behavioral Control
6.7.1.2 Self-Efficacy and Perceived Behavioral Control

6.7.2 Insignificant Antecedents of Perceived Behavioral Control

6.7.2.1 Trust and Perceived Behavior Control

6.7.2.2 Government Support and Perceived Behavioral Control


6.8.1 Significant Direct Antecedents of Credibility

6.8.1.1 Trust and Credibility

6.8.1.2 Government Support and Credibility

6.8.1.3 Perceived Behavior Control and Credibility

6.8.2 Insignificant Antecedents of Credibility

6.8.2.1 Compatibility and Credibility

6.8.2.2 Self-Efficacy and Credibility

6.9 Objective Seven: Discussion on mediating effects of Attitude, Subjective Norm, Perceived Behavior Control, Credibility

6.9.1 Significant Mediating Effects of Attitude and Credibility

6.9.1.1 Full Mediating Effect of Credibility on the Relationship between Trust and Actual Customer Resistance Behavior to Internet Banking

6.9.1.2 Full Mediating Effect of Attitude on the Relationship between Subjective Norm and Actual Customer Resistance Behavior to Internet Banking

6.9.1.3 Full Mediating Effect of Attitude on the Relationship between Perceived Behavior Control and Actual Customer Resistance Behavior to Internet Banking

XIX
6.9.1.4 Full Mediating Effect of Credibility on the Relationship between Perceived Behavior Control and Actual Customer Resistance Behavior to Internet Banking

344

6.9.1.5 Partial Mediating Effect of Attitude on the Relationship between Government Support and Actual Customer Resistance Behavior to Internet Banking

344

6.9.1.6 Partial Mediating Effect of Credibility on the Relationship between Government Support and Actual Customer Resistance Behavior to Internet Banking

345

6.9.2 Insignificant Mediating Effect of attitude, subjective norm, perceived behavior control, credibility

346

6.9.2.1 Mediating Effect of Attitude on the Relationship between Trust and Actual Customer Resistance

347

6.9.2.2 Mediating Effect of Attitude on the Relationship between Compatibility and Actual Customer Resistance

347

6.9.2.3 Mediating Effect of Subjective Norm on the Relationship between Trust and Actual Customer Resistance

347

6.9.2.4 Mediating Effect of Subjective Norm on the Relationship between Self-Efficacy and Actual Customer Resistance

348

6.9.2.5 Mediating Effect of Subjective Norm on the Relationship between Government Support and Actual Customer Resistance

348

6.9.2.6 Mediating Effect of Perceived Behavior Control on the Relationship between Trust and Actual Customer Resistance

349

6.9.2.7 Mediating Effect of Perceived Behavior Control on the Relationship between Compatibility and Actual Customer Resistance

350
6.9.2.8 Mediating Effect of Perceived Behavior Control on the Relationship between Self-Efficacy and Actual Customer Resistance 350

6.9.2.9 Mediating Effect of Perceived Behavior Control on the Relationship between Government Support and Actual Customer Resistance 351

6.9.2.10 Mediating Effect of Credibility on the Relationship between Compatibility and Actual Customer Resistance 352

6.9.2.11 Mediating Effect of Credibility on the Relationship between Self-Efficacy and Actual Customer Resistance 352

6.11 Research Contributions 352

6.11.1 Empirical Contribution 353

6.11.2 Practical Contribution 353

6.12 Limitations of the Study 356

6.13 Future Research 356

REFERENCES 359

LIST OF APPENDIX 441
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 4.1 Number of Employees in Public Universities in Yemen</td>
<td>177</td>
</tr>
<tr>
<td>Table 4.2 Number of University Employees in Each Region</td>
<td>178</td>
</tr>
<tr>
<td>Table 4.3 Proportion of the Sampled Universities</td>
<td>178</td>
</tr>
<tr>
<td>Table 4.4 Determining Sample Size of a Given Population</td>
<td>180</td>
</tr>
<tr>
<td>Table 4.5 The Probability Sampling of Employees for each University</td>
<td>180</td>
</tr>
<tr>
<td>Table 4.6 The Probability Sampling of Employees for Each University</td>
<td>181</td>
</tr>
<tr>
<td>Table 4.7 Items Used in the Present Study</td>
<td>185</td>
</tr>
<tr>
<td>Table 4.8 The Probability Sampling of Employees for Each University</td>
<td>189</td>
</tr>
<tr>
<td>Table 4.9 Summary of Response Rates</td>
<td>191</td>
</tr>
<tr>
<td>Table 4.10 Cohen's Guideline of Correlation Strength</td>
<td>202</td>
</tr>
<tr>
<td>Table 4.11 Pilot Factor Analysis Results (Independent Variables)</td>
<td>203</td>
</tr>
<tr>
<td>Table 4.12 Pilot Factor Analysis Results (Mediating Variables)</td>
<td>204</td>
</tr>
<tr>
<td>Table 4.13 Pilot Factor Analysis Results (Dependent Variables)</td>
<td>205</td>
</tr>
<tr>
<td>Table 4.14 Recommended Values of Measurement for all Exogenous and Endogenous variables</td>
<td>217</td>
</tr>
<tr>
<td>Table 5.1 Profiles of the Respondents</td>
<td>225</td>
</tr>
<tr>
<td>Table 5.2 Descriptive Statistics of Respondent Profile</td>
<td>226</td>
</tr>
<tr>
<td>Table 5.3 Descriptive Statistics of construct N=407</td>
<td>227</td>
</tr>
<tr>
<td>Table 5.4 Descriptive Statistic of Manifesting Variables</td>
<td>228</td>
</tr>
<tr>
<td>Table 5.5 Summary of Outlier</td>
<td>231</td>
</tr>
<tr>
<td>Table 5.6 Normality through AMOS before Transform</td>
<td>231</td>
</tr>
<tr>
<td>Table 5.7 Normality through AMOS after Transform</td>
<td>233</td>
</tr>
<tr>
<td>Table 5.8 Test of Non-Respondent Bias</td>
<td>237</td>
</tr>
</tbody>
</table>
Table 5.9  Reliability Cronbach Alpha and Composite Reliability for Actual Data 239
Table 5.10  Correlation Matrix between the all Variable 240
Table 5.11  Summary of Variance Extracted (VE) 242
Table 5.12  AVE Table Matrix 242
Table 5.13  GOF Index for Endogenous Measurement Model after Fit 244
Table 5.14  GOF Index for Exogenous Measurement Model after Fit 246
Table 5.15  GOF Index for Measurement Model after Fit 248
Table 5.16  CFA of Individuals, Measurement and Structural Model (Goodness-Of – Fit Indices) 250
Table 5.17  Hypothesized Model / (Goodness-Of-Fit Indices) 253
Table 5.18  Generated Model (GM) / (Goodness-Of-Fit Indices) 255
Table 5.19  Squared Multiple Correlation Results 256
Table 5.20  Regression Weights for All Variables of Generated Model 257
Table 5.21  Summary Mediating Effect Result 263
Table 5.22  Testing Attitude Mediates Trust and Customer Resistance 281
Table 5.23  Testing Attitude Mediates Compatibility and Customer Resistance 282
Table 5.24  Testing Attitude Mediates Government Support and Customer Resistance 284
Table 5.25  Testing Subjective Norms Mediate Trust and Customer Resistance 286
Table 5.26  Testing Subjective Norm Mediates Self-Efficacy and Customer Resistance 287
Table 5.27  Testing Subjective Norm Mediates Government Support and Customer Resistance 289
Table 5.28  Testing Perceived Behavior Control Mediates Trust and Customer Resistance 291
Table 5.29  Testing Perceived Behaviour Control Mediates Compatibility and Customer Resistance 293
Table 5.30  Testing Perceived Behaviour Control Mediates Self-Efficacy and Customer Resistance 294
Table 5.31  Testing Perceived Behaviour Control Mediates Government Support and Customer Resistance 296
Table 5.32  Testing Credibility Mediates Trust and Customer Resistance 298
Table 5.33  Testing Credibility Mediates Compatibility and Customer Resistance 299
Table 5.34  Testing Credibility Mediates Self-Efficacy and Customer Resistance 301
Table 5.35 Testing Credibility Mediates Government Support and Customer Resistance 303
Table 5.36  Testing Attitude Mediate Subjective Norms And Customer Resistance 304
Table 5.37  Testing Attitude Mediates Perceived Behaviour Control and Customer Resistance 306
Table 5.38  Testing Credibility Mediates Perceived Behavior Control and Customer Resistance 308
Table 5.39  Summary of Hypotheses Results of Mediating Relationships 309
Table 5.40  Regression Weights for Hypotheses Testing Results of DTPB 310
Table 5.41  (Goodness-of –Fit Indices) of Exogenous Model, Endogenous Model, Exogenous and Endogenous Model, Hypothesized Model, Hypothesized Model After Fit/Generated Model (RM) and Competing Models Underpinning Theory (TPB) 312
Table 5.42  Comparison between Hypothesis Model and Generated Model 313
Table 5.43  Hypotheses Summary 314
**LIST OF FIGURES**

<table>
<thead>
<tr>
<th>Figures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2.1 Map of Yemen Source: <a href="http://www.worldmap.org">www.worldmap.org</a></td>
<td>20</td>
</tr>
<tr>
<td>Figure 3.1 An Exploration of Consumer Resistance to Innovation and Its Antecedents</td>
<td>56</td>
</tr>
<tr>
<td>Figure 3.2 Consumer Resistance to Internet Banking: Postponers, Opponents and Rejectors</td>
<td>57</td>
</tr>
<tr>
<td>Figure 3.3 The Role of Information in Mobile Banking Resistance.</td>
<td>58</td>
</tr>
<tr>
<td>Figure 3.4 An Efficient Model to Improve Customer Acceptance of Mobile Banking.</td>
<td>60</td>
</tr>
<tr>
<td>Figure 3.5 An Investigation into the Acceptance of Online Banking in Saudi Arabia.</td>
<td>61</td>
</tr>
<tr>
<td>Figure 3.6 Exploring the Adoption of a Service Innovation: A Study of Internet Banking Adopters and Non-Adopters.</td>
<td>62</td>
</tr>
<tr>
<td>Figure 3.7 Factors Influencing the Adoption of Internet Banking: An Integration of TAM And TPB with Perceived Risk and Perceived Benefit.</td>
<td>63</td>
</tr>
<tr>
<td>Figure 3.8 Theory of Reasoned Action</td>
<td>68</td>
</tr>
<tr>
<td>Figure 3.9 Theory of Planned Behavior.</td>
<td>70</td>
</tr>
<tr>
<td>Figure 3.10 Technology Acceptance Model (TAM)</td>
<td>73</td>
</tr>
<tr>
<td>Figure 3.11 Technology Acceptance Model 2 (TAM2).</td>
<td>74</td>
</tr>
<tr>
<td>Figure 3.12 Technology Acceptance Model 3 (TAM3)</td>
<td>76</td>
</tr>
<tr>
<td>Figure 3.13 Decomposed Theory of Planned Behavior.</td>
<td>90</td>
</tr>
<tr>
<td>Figure 3.14 Antecedents of Customer Resistance to Internet Banking</td>
<td>98</td>
</tr>
<tr>
<td>Figure 3.15 Antecedents of Attitude</td>
<td>114</td>
</tr>
<tr>
<td>Figure</td>
<td>Title</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>3.16</td>
<td>Antecedents of Subjective Norm</td>
</tr>
<tr>
<td>3.17</td>
<td>Antecedents of Perceived Behavioral Control</td>
</tr>
<tr>
<td>3.18</td>
<td>Antecedents of Credibility</td>
</tr>
<tr>
<td>4.1</td>
<td>Theoretical Framework</td>
</tr>
<tr>
<td>4.2</td>
<td>Conceptual Relationship of Mediating Effect of Attitude</td>
</tr>
<tr>
<td>4.3</td>
<td>Conceptual Relationship of Mediating Effect of Subjective Norm</td>
</tr>
<tr>
<td>4.4</td>
<td>Conceptual Relationship of Mediating Effect of Perceived Behavior Control</td>
</tr>
<tr>
<td>4.5</td>
<td>Conceptual Relationship of Mediating Effect of Credibility</td>
</tr>
<tr>
<td>4.6</td>
<td>Mediating Effect</td>
</tr>
<tr>
<td>5.1</td>
<td>Linearity Assumption</td>
</tr>
<tr>
<td>5.2</td>
<td>Homoscedasticity</td>
</tr>
<tr>
<td>5.3</td>
<td>CFA For Endogenous Before Fit</td>
</tr>
<tr>
<td>5.4</td>
<td>CFA Measurement Model for Endogenous After Fit</td>
</tr>
<tr>
<td>5.5</td>
<td>CFA of Measurement model for exogenous before fit</td>
</tr>
<tr>
<td>5.6</td>
<td>CFA of Measurement Model for Exogenous After Fit</td>
</tr>
<tr>
<td>5.7</td>
<td>CFA Measurement Model for all Variables Model before Fit</td>
</tr>
<tr>
<td>5.8</td>
<td>CFA Measurement Model for all Variables Model after Fit</td>
</tr>
<tr>
<td>5.9</td>
<td>Hypothesized Model of Customer Resistance</td>
</tr>
<tr>
<td>5.10</td>
<td>Generated Structural Model (GSM)</td>
</tr>
<tr>
<td>5.11</td>
<td>Old and New Paths between the Models Constructs/Generated Structural Model Suggested by AMOS</td>
</tr>
<tr>
<td>5.12</td>
<td>Generated Model</td>
</tr>
<tr>
<td>5.13</td>
<td>Attitude Mediates Trust and Customer Resistance</td>
</tr>
<tr>
<td>5.14</td>
<td>Attitude Mediates Compatibility and Customer Resistance</td>
</tr>
</tbody>
</table>
# LIST OF APPENDIX

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>Questionnaire (English Version) + (English &amp; Arabic Version)</td>
<td>442</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Extracted Variance Analysis</td>
<td>471</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Respondents Descriptive</td>
<td>487</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Missing Value</td>
<td>496</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Outliers Detection</td>
<td>502</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Linearity &amp; Homoscedasticity</td>
<td>506</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Reliability of Constructs</td>
<td>512</td>
</tr>
<tr>
<td>Appendix H</td>
<td>Composite reliability &amp; Variance Extracted</td>
<td>533</td>
</tr>
<tr>
<td>Appendix I</td>
<td>Correlation &amp; R2</td>
<td>536</td>
</tr>
<tr>
<td>Appendix J</td>
<td>Confirmatory Factor Analysis Using Amos</td>
<td>538</td>
</tr>
<tr>
<td>Appendix K</td>
<td>Hypothesized &amp; Generated Model</td>
<td>548</td>
</tr>
</tbody>
</table>
### LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGFI</td>
<td>Adjusted Goodness-of-Fit Index</td>
</tr>
<tr>
<td>AMOS</td>
<td>Analysis of Moment Structures</td>
</tr>
<tr>
<td>ATT</td>
<td>Attitude</td>
</tr>
<tr>
<td>AVE</td>
<td>Average Variance Extracted</td>
</tr>
<tr>
<td>CBY</td>
<td>Central Bank of Yemen</td>
</tr>
<tr>
<td>CFA</td>
<td>Confirmatory Factor Analysis</td>
</tr>
<tr>
<td>CFI</td>
<td>Comparative Fit Index</td>
</tr>
<tr>
<td>COM</td>
<td>Compatibility</td>
</tr>
<tr>
<td>CR</td>
<td>Critical Ratio</td>
</tr>
<tr>
<td>CRD</td>
<td>Credibility</td>
</tr>
<tr>
<td>CRS</td>
<td>Customer Resistance</td>
</tr>
<tr>
<td>DOI</td>
<td>Diffusion of Innovation</td>
</tr>
<tr>
<td>DTPB</td>
<td>Decomposed Theory of Planned Behavior</td>
</tr>
<tr>
<td>EFA</td>
<td>Exploratory Factor Analysis</td>
</tr>
<tr>
<td>GFI</td>
<td>Goodness-of-Fit Index</td>
</tr>
<tr>
<td>GM</td>
<td>Generated Model</td>
</tr>
<tr>
<td>GOF</td>
<td>Goodness-of-Fit</td>
</tr>
<tr>
<td>GS</td>
<td>Government Support</td>
</tr>
<tr>
<td>IBS</td>
<td>Internet Banking Service</td>
</tr>
<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
</tr>
<tr>
<td>IFI</td>
<td>Incremental Fit Index</td>
</tr>
<tr>
<td>IS</td>
<td>Information System</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>ML</td>
<td>Maximum Likelihood</td>
</tr>
<tr>
<td>NFI</td>
<td>Normed Fit Index</td>
</tr>
<tr>
<td>NP</td>
<td>Number of employee in each region</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>NS</td>
<td>Number of sample to be distributed</td>
</tr>
<tr>
<td>PBC</td>
<td>Perceived Behavior Control</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Root Mean Square Error of Approximation</td>
</tr>
<tr>
<td>SE</td>
<td>Self-Efficacy</td>
</tr>
<tr>
<td>SEM</td>
<td>Structural Equation Modeling</td>
</tr>
<tr>
<td>SMC</td>
<td>Squared Multiple Correlation</td>
</tr>
<tr>
<td>SN</td>
<td>Subjective Norm</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
</tr>
<tr>
<td>SRMR</td>
<td>Standardized Root Mean Residual</td>
</tr>
<tr>
<td>SSC</td>
<td>Social Security Corporation</td>
</tr>
<tr>
<td>TAM</td>
<td>Technology Acceptance Model</td>
</tr>
<tr>
<td>TLI</td>
<td>Tucker-Lewis Index</td>
</tr>
<tr>
<td>TPB</td>
<td>Theory of Planned Behavior</td>
</tr>
<tr>
<td>TR</td>
<td>Trust</td>
</tr>
<tr>
<td>TRA</td>
<td>Theory of Reasoned Action</td>
</tr>
<tr>
<td>TAM</td>
<td>Technology Acceptance Model</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>$\chi^2$</td>
<td>Chi-square</td>
</tr>
<tr>
<td>$\chi^2/df$</td>
<td>Chi-square per degree of freedom ratio</td>
</tr>
</tbody>
</table>
CHAPTER ONE
INTRODUCTION

1.1 Introduction

This chapter presents the background of the study, problem statement, research questions and research objectives. This is followed by a discussion on the significance and scope of the study. Finally, the organization of the study is provided.

1.2 Background of the Study

The main aim of this research is to investigate the antecedents of internet banking resistance that may be hindering the adoption of internet banking in Yemen. Records show only 5% have adopted internet banking (Al-Hairy, 2007), as supported by Al-Ajam & Nor (2013); and Zolait (2014). They found internet banking adoption to be very low in Yemen. Despite the increasing usage of internet services in Yemen, many bank customers are still not willing to use or adopt internet banking services (Zolait, Sulaiman & Alwi, 2008a; Al-Ajam & Nor, 2013a, 2013b). Further, a review of extant literature shows that empirical studies in Yemen on internet banking are scarce (Zolait, 2010; Al-Ajam & Nor, 2013a, 2013b). This study intends to look at eight antecedents of customer resistance to internet banking and employs the Decomposed Theory of Planned Behavior in order to enhance the empirical research findings via the Structural Equation Modeling (SEM).

By way of definition, innovation resistance is a situation whereby customers resist new technology because of the fact that it presents potential changes to their satisfactory
The contents of the thesis is for internal user only
References


exposure and safety & health concern and the role of attitude as mediator.


Chong, A.Y.-L., Ooi, K.-B., Lin, B., & Tan, B.-I. (2010). Online banking adoption:


376


Fornell, C., & Larcker, D.F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research (JMR), 18*(3), 382-388.


Goldstuck, A. (2010). Internet access in South Africa 2010: A comprehensive study of
the internet access market in South Africa. From http://www.researchandmarkets.com/reports/1280829/internet_access_in_south _africa_2010


392


Jones, S., Wilikens, M., Morris, P., & Masera, M. (2000). Trust requirements in e-


Laukkanen, T., & Kiviniemi, V. (2010). The role of information in mobile banking


technology acceptance model (TAM), theory of planned behavior (TPB) and intrinsic motivation. *Journal of Internet Banking & Commerce, 16*(2), 1-27.


Determinants of e-banking adoption: The case of e-banking services in Tehran.


Moore, G., & Benbasat, I. (1991). Development of an instrument to measure the
perceptions of adopting an information technology innovation. *Information systems research*, 2(3), 192-222.


Nath, R., Bhal, K.T., & Kapoor, G.T. (2013). Factors influencing it adoption by bank


technology adoption decisions: An application of the theory of planned behavior.  


Segars, A.H., & Grover, V. (1993). Re-examining perceived ease of use and


425


Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International Journal of Human-Computer Studies, 64*(2), 53-78.


Vaithilingam, S., Nair, M., & Samudram, M. (2006). Key drivers for soundness of the
banking sector lessons for developing countries. *Journal of Global Business & Technology, 2*(1), 1-11.


Proceedings of the 38th Annual Hawaii International Conference on System Sciences, USA.


2009-country-profile-yemen-comparing-regulation-181-economies (pp. 1-76).

America.


13(2), 104-121.


