



UNIVERSITI PUTRA MALAYSIA

***DETERMINANT OF CUSTOMER INTENTION TO ADOPT MOBILE
BANKING SERVICES IN SAUDI ARABIA***

LAYLA HODAED ALSHEIKH

GSM 2013 10



**DETERMINANT OF CUSTOMER INTENTION
TO ADOPT MOBILE BANKING SERVICES IN
SAUDI ARABIA**

LAYLA HODAED ALSHEIKH

**DOCTOR OF PHILOSOPHY
UNIVERSITI PUTRA MALAYSIA**

2013



**DETERMINANT OF CUSTOMER INTENTION TO ADOPT MOBILE
BANKING SERVICES IN SAUDI ARABIA**

By

LAYLA HODAED ALSHEIKH

**Thesis Submitted to the Graduate School of Management,
Universiti Putra Malaysia, in Fulfilment of the
Requirements for the Degree of Doctor of Philosophy**

October 2013

COPYRIGHT

All material contained within the thesis, including without limitation text, logos, icons, photographs and all other artwork, is copyright material of Universiti Putra Malaysia unless otherwise stated. Use may be made of any material contained within the thesis for non-commercial purposes from the copyright holder. Commercial use of material may only be made with the express, prior, written permission of Universiti Putra Malaysia.

Copyright © Universiti Putra Malaysia

© COPYRIGHT UPM

DEDICATION

I dedicate my thesis work to my family.

© COPYRIGHT UPM

ABSTRACT

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

DETERMINANT OF CUSTOMER INTENTION TO ADOPT MOBILE BANKING SERVICES IN SAUDI ARABIA

By

Layla Hodaed Alsheikh

October 2013

Chair: Associate Professor Jamil Bojei, PhD

Faculty: Graduate School of Management

Mobile technologies and services create a wide spectrum of business opportunities. Despite the availability of technologically advanced mobile devices, mobile banking services have not been widely accepted by bank customers. The purpose of this study is to gzc o kpg"vjg" o clqt" hcevqtu"vj cv" eqpvtkdwvg"vq y ct fu" ewuvq o gtøu" kpv gpvkon to adopt mobile banking. In addition, the study aims to examine the direct and indirect effects of perceived value on behavioural intention.

This research uses primary data and the unit of analysis is individuals who are non-user of mobile banking services. The study questionnaires were distributed to samples throughout Saudi Arabia with emphasis on major cities. Four hundred and three valid responses were received and analysed through multivariate analysis process using Structural Equation Modelling (SEM) via Analysis of Moment Structures (AMOS) software.

The findings of the research demonstrate four main results. First, mobile phone experience and awareness of service have a strong positive influence on benefit factors (performance expectancy, effort expectancy). Second, the findings show that benefit factors have significant and positive impact on perceived value. Third, the results also reveal that performance expectancy, effort expectancy, perceived risk and perceived value are significant predictors of intention to use mobile banking in the initial adoption stage. Fourth, the findings indicate that perceived value significantly mediates the relationship between benefit factors (performance expectancy, effort expectancy) and behavioural intention.

Several managerial and policy implications for Saudi commercial banks and Saudi Arabia Monetary Agency are presented which affect their on-going campaigns about information security of banking transactions through electronic banking channels. The study shows that mobile phone experience and awareness of service are critical in the comprehension of the technology and the related functionality and benefits while the lack of knowledge and information maximize the perception of risk. The principal conclusion is that mobile banking services have to demonstrate to the bank customer its uniqueness compared to other competing services in the same category (electronic banking services). Differentiation can be achieved by having more benefit factors than sacrifice factors (perceived cost, perceived risk) that can create perceived value for adopting mobile banking services in the future. Once the bank customers assess the mobile banking services based on their perceptions of what is received and what is given, they start to make decision that will influence behavioural intention to adopt or not to adopt mobile banking services.

ABSTRAK

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra
Malaysia
sebagai memenuhi keperluan untuk ijazah
Doktor Falsafah

PENENTU NIAT PELANGGAN MENGGUNA PERKHIDMATAN PERBANKAN MUDAH ALIH DI ARAB SAUDI

Oleh

Layla Hodaed Alsheikh

Oktober 2013

Pengerusi: Profesor Madya Jamil Bojei, PhD

Fakulti: Sekolah Pengajian Siswazah Pengurusan

Teknologi dan perkhidmatan mudah alih mewujudkan peluang perniagaan yang luas. Walaupun terdapat banyak peranti mudah alih berteknologi tinggi, namun perkhidmatan perbankan mudah alih tidak diterima secara meluas oleh pelanggan bank. Matlamat kajian ini ialah untuk mengkaji faktor utama mempengaruhi niat pelanggan menggunakan perbankan mudah alih. Di samping itu, kajian ini bertujuan untuk mengkaji kesan langsung dan tidak langsung Anggapan Nilai pada Niat Tingkah Laku.

Kajian ini menggunakan data asas dan unit analisis adalah individu yang bukan pengguna perkhidmatan perbankan mudah alih. Borang soalselidik kajian diedarkan kepada sampel pengguna di seluruh Arab Saudi dengan keutamaan kepada bandar besar. Empat ratus tiga jawapan sah diterima dan dianalisa melalui proses analisis multivariate menggunakan Pemodelan Persamaan Struktur (Structural Equation Modelling SEM) melalui perisian Analisis Struktur Moment (Analysis of Moment Structures AMOS).

Hasil kajian menunjukkan empat keputusan utama. Pertama, Pengalaman mengguna dan Kesedaran mengenai Perkhidmatan telefon mudah alih mempunyai pengaruh positif kukuh kepada faktor faedah (Jangkaan Prestasi, Jangkaan Usaha). Kedua, hasil kajian menunjukkan faktor faedah mempunyai impak yang besar dan positif kepada Anggapan Nilai. Ketiga, hasil kajian juga menunjukkan Jangkaan Prestasi, Jangkaan Usaha, Anggapan Risiko dan Anggapan Nilai adalah peramal penting kepada niat untuk menggunakan perbankan mudah alih di peringkat permulaan penggunaan. Keempat, hasil kajian menunjukkan Anggapan Nilai adalah pengantara penting di dalam hubungan factor faedah (Jangkaan Prestasi, Jangkaan Usaha) dan Niat Tingkah Laku.

Beberapa implikasi terhadap pengurusan dan dasar bank perdagangan Arab dan Agensi Kewangan Arab Saudi dibentangkan seperti cara mereka melakukan kempen berterusan mengenai keselamatan maklumat transaksi perbankan melalui saluran perbankan elektronik. Hasil kajian menunjukkan Pengalaman dan Kesedaran Perkhidmatan Telefon mudah alih adalah penting untuk memahami teknologi, fungsi dan faedah tetapi kekurangan pengetahuan dan maklumat meningkatkan persepsi risiko. Kesimpulan utama ialah perkhidmatan perbankan mudah alih hendaklah menunjukkan kepada pelanggan bank keunikannya berbanding lain-lain persaingan dalam kategori yang sama (perkhidmatan perbankan elektronik). Pembezaan boleh dibuat dengan memberikan lebih faktor faedah berbanding faktor korban (Kos Anggapan, Risiko Anggapan) yang boleh mewujudkan anggapan nilai bagi penggunaan perkhidmatan perbankan mudah alih pada masa depan. Apabila pelanggan bank menilai perkhidmatan perbankan mudah alih berdasarkan persepsi mereka mengenai apa yang diterima dan apa yang diberikan, mereka mula membuat keputusan yang mempengaruhi niat tingkah laku untuk menggunakan atau tidak menggunakan perkhidmatan perbankan mudah alih.

ACKNOWLEDGEMENTS

Above all, I am most grateful for all the bounties that Allah has showered on me,

I would like to express my endless thanks to Associate Professor Dr. Jamil Bojei, who generously allowed me space when I wanted it and provided me with guidance when I needed it. Thank you for your assistance, encouragement, inspiration and friendship as my supervisor. Without the hours of your time spent in discussions and giving constructive comments, the process of writing this thesis would not have been kept so well under control. My deepest thanks also go to my co-supervisors Dr. Syed Shah Alam and Dr. Lennora Binti Putit for their encouragement and insightful comments.

I would also like to express my heartfelt thanks to the staff of the Saudi Arabian Cultural Mission for their warm personalities and for their help and support in guiding me throughout the duration of my study in Malaysia. I would also like to express my appreciation to the administrative and academic staff of the Graduate School of Management, University Putra Malaysia (UPM) for providing advice, facilities, and support. I also express gratitude to everyone willing to help me in the distribution of the questionnaires used in this thesis.

Appreciation is also due to many people who have been there along the way: my friends Sani, Areeg and Ilham, who have cared patiently about my work while having struggles of their own. Special recognition is extended to my father, my mother, my siblings and my in-laws for their endless love, continual understanding, sacrifice, prayers and unwavering faith in my ability to complete this study, as well as for gentle pushes given when needed.

Finally, very special thanks to my loving husband Majed and our wonderful daughters, Malath, Aeshah and Aljood. Thank you for your understanding during the crazy times and for your love and support always. In many ways, this thesis is ours. I dedicate the completion of my PhD work to all of you.

APPROVAL

I certify that a Thesis Examination Committee has met on **9 October 2013** to conduct the final examination of **Layla Hodaed Alsheikh** on her thesis entitled “**Determinant of Customer Intention to Adopt Mobile Banking Services in Saudi Arabia**” in accordance with the Universities and University Colleges act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The committee recommends that the student be awarded the Degree of Doctor of Philosophy.

Members of the Thesis Examination Committee were as follows:

Assoc. Prof. Dr. Azmawani Abd Rahman

Deputy Dean (Research & Graduate Studies)
Faculty of Economics and Management
Universiti Putra Malaysia
(Chairman)

Osman bin Mohamad, PhD

Professor
Graduate School of Management
Multimedia University- Cyberjaya Campus
(Internal Examiner)

Wan Jamaliah Wan Jusoh, PhD

Associate Professor
Faculty of Economics and Management Sciences
International Islamic University Malaysia
(Internal Examiner)

Tommi Laukkanen, PhD

Professor
Business School
University of Eastern Finland
Finland
(External Examiner)

PROF. DATUK DR. MAD NASIR SHAMSUDIN

Deputy Vice Chancellor (Academic & International)
Universiti Putra Malaysia

Date :

On behalf of,
Graduate School of Management
Universiti Putra Malaysia

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

Jamil Bojei, PhD

Associate Professor
Faculty of Economics and Management
Universiti Putra Malaysia
(Chairman)

Bahaman Abu Samah, PhD

Associate Professor
Faculty of Educational Studies
Universiti Putra Malaysia
(Committee Member)

Syed Shah Alam, PhD

Associate Professor
Faculty of Economics and Management
Universiti Kebangsaan Malaysia
(Committee Member)

Lenhora Binti Putit, PhD

Senior Lecturer
Faculty of Business Management
Universiti Teknologi Malaysia
(Committee Member)

PROF. DATUK DR. MAD NASIR SHAMSUDIN
Deputy Vice Chancellor (Academic & International)
Universiti Putra Malaysia

Date :

On behalf of,
Graduate School of Management
Universiti Putra Malaysia

DECLARATION

Declaration by Graduate Student

I hereby confirm that:

- This thesis is my original work;
- Quotations, illustrations and citations have been duly referenced;
- This thesis has not been submitted previously or concurrently for any other degree at any other institutions;
- Intellectual property from the thesis and copyright of thesis are fully-owned by Universiti Putra Malaysia;
- Written permission must be obtained from supervisor and the office of Deputy Vice-Chancellor (Research and Innovation) before thesis is published in book form;
- There is no plagiarism or data falsification/fabrication in the thesis, and scholarly integrity is upheld as according to Rule 59 in Rules 2003 (Revision 2012-2013). The thesis has undergone plagiarism detection software.

Signature: 

Date: 6 Jan 2014

Student Name: LAYLA HODAED ALSHEIKH

Matric No: GM03609

Declaration by Members of Supervisory Committee

This is to confirm that:

- The research conducted and the writing of this thesis was under our supervision;
- Supervision responsibilities as stated in Rule 41 in Rules 2003 (Revision 2012-2013) were adhered to.

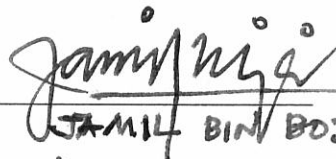
Chairman of Supervisory Committee

ASSOCIATE PROF. DR. JAMIL BOJEI
Deputy Dean
(Academic & Student)
Faculty of Economics and Management
Universiti Putra Malaysia

Signature: _____

Name :

Faculty :



JAMIL BIN BOJEI, PHD (ASSOC. PROFESSOR)
FACULTY OF ECONOMICS & MANAGEMENT

Member of Supervisory Committee

Signature: _____

Name :

Faculty :

LEANNORA PUTI, PHD
FACULTY OF BUSINESS
MANAGEMENT, UNIVERSITI
TEKNOLOGI MARA, SERDANG ALAM
40450, SELANGOR.

Signature: _____

Name :

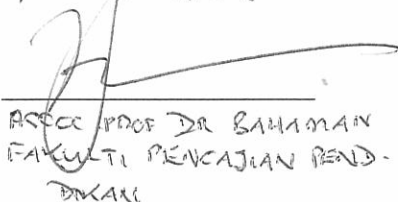
Faculty :

Syed Shah Alam Ph.D.
School of Management
Faculty of Economics and
Management.
Universiti Kebangsaan
Malaysia.

Signature: _____

Name :

Faculty :



PROF MADYA DR. BAHAMAN ABU SAMAH
Pegawai
Institut Pengajian Sains Sosial
Universiti Putra Malaysia
Serdang, Selangor.

Signature: _____

Name :

Faculty :

TABLE OF CONTENTS

| | Page |
|--|-------------|
| COPYRIGHT | ii |
| DEDICATION | iii |
| ABSTRACT | iv |
| ABSTRAK | vi |
| ACKNOWLEDGEMENTS | viii |
| APPROVAL | x |
| DECLARATION | xii |
| LIST OF TABLES | xix |
| LIST OF FIGURES | xxi |
| LIST OF APPENDICES | xxii |
| LIST OF ABBREVIATIONS | xxiii |
| | |
| CHAPTER ONE:INTRODUCTION TO THE STUDY | |
| 1.1 Preamble | 1 |
| 1.2 Background of the Study | 1 |
| 1.3 Problem Statement | 5 |
| 1.4 Research Objectives | 7 |
| 1.5 Research Questions | 8 |
| 1.6 Scope of the Study | 10 |
| 1.7 Research Significance | 11 |
| 1.8 Definition of Terms | 14 |
| 1.9 Organisation of the Thesis | 16 |
| | |
| CHAPTER TWO: THE BANKING SECTOR IN SAUDI ARABIA | |
| 2.1 Introduction | 19 |
| 2.2 The National Economy under the Development Plans | 19 |
| 2.2.1 The Long-term Strategy of the National Economy by Sector | 20 |
| 2.2.2 The Service Sector under the Development Plans | 22 |
| 2.3 The Banking Sector | 24 |

| | |
|--|----|
| 2.3.1 Current Condition of Saudi Commercial Banks | 26 |
| 2.3.2 Issues and Challenges | 26 |
| 2.3.3 Future Prospects | 27 |
| 2.4 The Role of Telecommunication Sector in Banking Services | 28 |
| 2.5 Mobile Banking Services in Saudi Arabian Banks | 32 |
| 2.6 Conclusion | 37 |

CHAPTER THREE: LITERATURE REVIEW

| | |
|--|----|
| 3.1 Introduction | 38 |
| 3.1.1 Customer Usage and Intention Behaviour | 38 |
| 3.1.2 Customer Usage and Intention to Adopt Technology | 40 |
| 3.1.3 Customer Adoption Behaviour in Mobile Banking Environments | 42 |
| 3.2 Mobile Banking Services Adoption | 44 |
| 3.2.1 The History of E-banking Service | 45 |
| 3.2.2 Definition of Mobile Banking | 49 |
| 3.2.3 Types of Mobile Banking | 50 |
| 3.2.4 Benefits of Mobile Banking | 51 |
| 3.2.5 Factors Affecting Mobile Banking Services Adoption | 53 |
| 3.2.6 Research on Mobile Banking Services | 71 |
| 3.3 Customer Value Perceptions | 78 |
| 3.3.1 Definitions of Perceived Value | 78 |
| 3.3.2 Benefit Factors, Sacrifice Factors, and Perceived Value | 79 |
| 3.3.3 Value and Customer Behaviour | 82 |
| 3.3.4 Research on Perceived Value and Behavioural Intention | 85 |
| 3.3.5 Perceived Value to Explain Adoption Intention | 88 |
| 3.3.6 Perceived Value as a Mediator | 90 |
| 3.4 Gaps in the Research | 91 |
| 3.5 Conclusion | 93 |

CHAPTER FOUR: RESEARCH FRAMEWORK

| | |
|--|-----|
| 4.1 Introduction | 94 |
| 4.2 Theoretical Framework | 94 |
| 4.2.1 The Unified Theory of Acceptance and Use of Technology | 94 |
| 4.2.2 Mental Accounting Theory (MAT) | 100 |
| 4.2.3 The Hierarchy of Effects Model (HOE) | 103 |
| 4.3 Research Framework | 106 |
| 4.4 Research Hypotheses Development | 109 |
| 4.5 Conclusion | 116 |

CHAPTER FIVE: RESEARCH METHODOLOGY

| | |
|-------------------------------------|-----|
| 5.1 Introduction | 117 |
| 5.2 Philosophical Perspective | 117 |
| 5.3 Research Design | 120 |
| 5.3.1 Purpose of the Study | 121 |
| 5.3.2 Study Setting | 122 |
| 5.3.3 Type of Investigation | 122 |
| 5.3.4 Researcher's Intervention | 123 |
| 5.3.5 Time Horizon | 123 |
| 5.3.6 Unit of Analysis | 124 |
| 5.4 Instrument Development Process | 125 |
| 5.4.1 Measurement of Items | 126 |
| 5.4.2 Multi-item Scale | 127 |
| 5.4.3 Core Cqpwtwevuo" Ogcwtg o gpv | 128 |
| 5.5 Questionnaire Design | 136 |
| 5.5.1 Cover Letter | 136 |
| 5.5.2 Structure and Wordings | 137 |
| 5.5.3 Sequencing of Questions | 138 |
| 5.5.4 Questionnaire Instructions | 139 |
| 5.5.5 Questionnaire Translation | 140 |
| 5.5.6 Pre-testing Questionnaire | 141 |
| 5.6 Data Collection Method | 141 |
| 5.7 Sampling Design | 143 |

| | |
|---|-----|
| 5.8 Statistical Techniques | 148 |
| 5.8.1 Internal Consistency Reliability | 148 |
| 5.8.2 Assessment of Validity | 149 |
| 5.8.3 Structural Equation Modelling (SEM) | 151 |
| 5.9 Conclusion | 155 |

CHAPTER SIX: FINDING AND ANALYSES

| | |
|---|-----|
| 6.1 Introduction | 156 |
| 6.2 Part I: Descriptive Analyses | 156 |
| 6.2.1 Preparation and Screening of Data | 157 |
| 6.2.2 Assessment of Internal Consistency | 161 |
| 6.2.3 Internal Consistency of All Constructs | 164 |
| 6.2.4 Descriptive Statistics of Constructs | 164 |
| 6.3 Part II: Measurement Model | 173 |
| 6.3.1 Developing the Structural Equation Models | 173 |
| 6.3.2 Evaluation of the Measurement Model | 175 |
| 6.3.3 Reporting Fit Indices | 179 |
| 6.3.4 Convergent Validity | 182 |
| 6.3.5 Discriminant Validity | 183 |
| 6.4 Part III: Structural Model Fit and Hypothesis Testing | 185 |
| 6.4.1 Structural Model Fit | 185 |
| 6.4.2 Hypotheses Tests | 186 |
| 6.4.3 Testing Mediation | 194 |
| 6.5 Hypotheses Testing Results | 197 |
| 6.6 Conclusion | 199 |

CHAPTER SEVEN: DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

| | |
|---------------------------------------|-----|
| 7.1 Introduction | 200 |
| 7.2 Summary of Findings | 200 |
| 7.3 Discussion | 201 |
| 7.3.1 Findings Related to Objective 1 | 205 |
| 7.3.2 Findings Related to Objective 2 | 206 |

| | |
|---|-----|
| 7.3.3 Findings Related to Objective 3 | 207 |
| 7.3.4 Findings Related to Objective 4 | 212 |
| 7.3.5 Findings Related to Objective 5 | 213 |
| 7.4 Contributions and Implications | 215 |
| 7.4.1 Academic Contributions | 216 |
| 7.4.2 Implications for Practitioners | 219 |
| 7.4.3 Policy Contributions | 223 |
| 7.5 Limitations to the Research | 225 |
| 7.6 Recommendations for Future Research | 226 |
| 7.7 Concluding Remarks | 227 |
| REFERENCES | 230 |
| APPENDICES | 251 |
| BIODATA OF STUDENT | 289 |
| LIST OF PUBLICATIONS | 290 |

LIST OF TABLES

| Table | | Page |
|--------------|---|-------------|
| 2.1 | Real GDP, at 1999 Constant Prices | 22 |
| 2.2 | GDP by Sector, at Constant 1999 prices | 24 |
| 2.3 | Bank Branches Operating in Saudi Arabia by Provinces | 26 |
| 2.4 | Mobile Banking Services among Banks in Saudi Arabia | 36 |
| 3.1 | Types of Mobile Banking Services. | 52 |
| 3.2 | Research on Mobile Banking Services | 73 |
| 3.3 | Research on Perceived Value | 87 |
| 5.1 | Instrument for Mobile Phone Experience | 130 |
| 5.2 | Instrument for Awareness of Mobile Banking Services | 131 |
| 5.3 | Instrument for Performance Expectancy | 132 |
| 5.4 | Instrument for Effort Expectancy | 133 |
| 5.5 | Instrument for Perceived Cost | 134 |
| 5.6 | Instrument for Perceived Risk | 135 |
| 5.7 | Instrument for Perceived Value | 136 |
| 5.8 | Instrument for Behavioural Intentions | 137 |
| 5.9 | Questionnaire Methods for Data Collection | 143 |
| 5.10 | Bank Branches in Saudi Arabia as at the 31 st September 2011 | 148 |
| 6.1 | Summary of Screening Procedure | 161 |
| 6.2 | Summary of Demographic Profile of Respondents | 163 |
| 6.3 | Mean and Standard Deviation of Mobile Phone Experience | 166 |

| Table | Page |
|--|-------------|
| 6.4 Mean and Standard Deviation of Awareness of Mobile Banking Services | 167 |
| 6.5 Mean and Standard Deviation of Performance Expectancy | 168 |
| 6.6 Mean and Standard Deviation of Effort Expectancy | 169 |
| 6.7 Mean and Standard Deviation of Perceived Cost | 170 |
| 6.8 Mean and Standard Deviation of Perceived Risk | 171 |
| 6.9 Mean and Standard Deviation of Perceived Value | 172 |
| 6.10 Mean and Standard Deviation of Behavioural Intention | 173 |
| 6.11 Summary of Items Removed | 180 |
| 6.12 Goodness-of-Fit Indices for the Measurement Model | 181 |
| 6.13 Goodness-of-Fit Indices for the Measurement Model | 183 |
| 6.14 Measurement Properties of Total Model | 185 |
| 6.15 Summary of Model Fit Indices for SEM Model | 187 |
| 6.16 Structural Path Analysis Result | 189 |
| 6.17 Summary of Significant Paths | 196 |
| 6.18 Summary of Results | 199 |
| 7.1 Summary of Specific Objectives, Research Questions, Hypotheses and Results | 204 |

LIST OF FIGURES

| Figure | | Page |
|--------|--|------|
| 2.1 | Relative Contributions to GDP by Oil and Non-oil Sectors | 23 |
| 2.2 | Mobile Market Growth óActive Subscriptions (2001-2009) | 31 |
| 4.1 | The Unified Theory of Acceptance and Use of Technology | 96 |
| 4.2 | Hierarchy of Effects Model | 105 |
| 4.3 | The Research Model | 109 |
| 5.1 | Hypothetic-Deductive Approach | 120 |
| 6.1 | Flow Chart of Developing SEM Model | 175 |
| 6.2 | Confirmatory Factor Analysis for the Full Model | 177 |
| 6.3 | Confirmatory Factor Analysis for the Model | 179 |
| 6.4 | Structural Equation Model | 188 |

LIST OF APPENDICES

| Appendix | | Page |
|----------|---|------|
| A | Questionnaire Item Development | 253 |
| A1 | Questionnaire Item Development for Mobile Phone Experience | 253 |
| A2 | Questionnaire Item Development for Awareness of Mobile banking Services | 255 |
| A3 | Questionnaire Item Development for Performance Expectancy | 256 |
| A4 | Questionnaire Item Development for Effort Expectancy | 258 |
| A5 | Questionnaire Item Development for Perceived Cost | 260 |
| A6 | Questionnaire Item Development for Perceived Risk | 262 |
| A7 | Questionnaire Item Development for Perceived Value | 264 |
| A8 | Questionnaire Item Development for Behavioural Intention | 266 |
| B | Questionnaire | 268 |
| B1 | English Version of Questionnaire | 269 |
| B2 | Arabic Version of Questionnaire | 276 |
| C | Checking of Outliers | 283 |
| D | Assessment of Normality | 287 |
| E | Variance Explained (factor loading) | 288 |
| F | Variance Explained t-value (critical ratio- C.R) | 289 |

LIST OF ABBREVIATIONS

| | |
|--------------|---|
| AGFI | Adjusted Goodness-of-Fit Index |
| AMOS | Analysis of Moment Structures |
| AWA | Awareness of Mobile Banking Services |
| BIN | Behavioural Intention |
| CFA | Confirmatory Factor Analysis |
| CFI | Comparative-Fit-Index, |
| CITC | Communication and Information Technology Commission |
| EEX | Effort Expectancy |
| GFI | Goodness-of-Fit Index |
| HOE | Hierarchy of Effects Model |
| ICT | Information and Communications Technology |
| IFI | Increment Fit Index |
| M | Mean |
| MAT | Mental Accounting Theory |
| MEX | Mobile Phone Experience |
| NCITP | National Communications and Information Technology Plan |
| NFI | Normed Fit Index |
| PCO | Perceived Cost |
| PEX | Performance Expectancy |
| PRI | Perceived Risk |
| PVA | Perceived Value |
| RMSEA | Root Mean Square Error of Approximation |
| S.D. | Standard Deviation |
| SAMA | Saudi Arabia Monetary Agency |
| SEM | Structural Equation Modelling |
| SPSS | Statistical Package for Social Sciences |
| TLI | Tucker-Lewis coefficient Index |
| UTAUT | Unified Theory of Acceptance and Use of Technology |

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Preamble

This chapter presents an overview of the whole thesis. This includes the background of the study, the problem statement, and the research objectives. This chapter also introduces the reader to the research questions, the importance of the research and the scope of the study, and, subsequently, the definition of terminologies used in the study and the organisation of the thesis.

1.2 Background of the Study

The advancement of digital technology within the field of information and telecommunications has spurred the growth of markets throughout the world. As a result, businesses are hastening the pace of the information revolution by restructuring operations to exploit this online potential. For instance, Poon (2008) states that business-to-business (B2B), and business-to-customers (B2C) transactions are being completed either fully or in part via the Internet. The effects of this revolution are experienced in world markets such as the Saudi market, which is considered to be one of the largest IT markets in the Middle East region (Al-Ghaith, Sanzogni, & Sandhu, 2010). According to the Communication and Information Technology Commission (CITC) in Saudi Arabia, factors such as the reduced cost of Internet access and smart devices, broadband availability, growth in e-commerce, and the implementation of e-government applications have helped to increase Internet penetration by ten-fold, from approximately 1 million

Internet users in 2001 to a projected 15.8 million by the end of 2012 (Communication and Information Technology Commission [CITC], 2012).

Innovative mobile applications are also being developed in tandem with the aforementioned revolution. This has seen manufacturers making handsets that offer such wireless application platforms as WAP, GPRS, and 3G (Lee, McGoldrick, Keeling, & Doherty, 2003). These features have enabled mobile phone users to enjoy applications and services that had hitherto been a preserve only of those who owned personal computers. Now, however, the Internet is available to mobile users, along with all its versatile user application interfaces. Thus, the merging of mobile communications and the wireless Internet has given birth to m-commerce, typically defined as mobile commerce conducted via wireless applications (Anckar & D'Incau, 2002).

Consequently, researchers have reinvented the concept of e-commerce to include the capacity of mobile phones, which is now almost at the same level as that of personal computers (see e.g., Lee, Park, & Chung, 2009; Bouwman, Carlsson, Walden, & Molina-Castillo, 2008; Donner & Tellez, 2008). Mobile phones are more pervasive than personal computers, as evidenced by the fact that there are three times more mobile phone users than online PC users (Riivari, 2005). Furthermore, mobile applications have been cited as being more than just an extension of the more traditional computer user applications (Laukkanen, 2007; Laforet & Li, 2005). According to Anckar and D'Incau (2002) the value-creating characteristics of m-commerce can be classified according to five categories of needs: time critical, spontaneous, entertainment, efficiency and mobility-related needs. Such characteristics are giving businesses and individuals a chance to network in real time, and mean that mobile phone and m-commerce are an important

aspect of the information and communication industry, independent of the realm of personal computers. In essence, m-commerce has carved itself a new niche in the area of e-commerce counterpart (Qingfei, Shaobo, & Gang, 2008).

Moreover, the capacity of the modern-day mobile phone has shifted from being a device for transmitting voice messages to a device that also carries data and money (Puschel, Mazzon, & Hernandez, 2010). Accordingly, this newly defined commercial portal has opened doors for industrialists and other providers of goods and services, such as financial service providers, to redefine their operations. New innovations have to take the growing demand for mobile applications into account, as is the case for financial services providers around the world (Pedersen & Ling, 2002). Various financial institutions have thus been expending time and resources producing fresh and novel products and services designed for mobile platforms, known collectively as mobile banking services (also known as M-banking, SMS banking, m-banking, etc).

The genesis of mobile banking services is among a number of recent innovations that use mobile devices such as smart phones, cell phones or personal digital assistants (PDA) in delivering banking services (Laukkanen & Kiviniemi, 2010; Barati & Mohammadi, 2009). M-banking provides customers with the opportunity to carry out banking transactions using their mobile phones. Indeed, the ubiquity of mobile devices, coupled with swift data transmission technologies, enables users to transform their mobile phones into banking units anywhere and at any time (Cruz, Neto, Muñoz-Gallego, & Laukkanen, 2010).

The intention to use mobile banking among customers can be combined with mobile phone usage behaviour to establish how likely it is that customers will adopt mobile banking services. From the literature, it can be seen that many scholars (Ajzen, 1991; Davis, 1989) have shown that individual behaviour can be explained in terms of behavioural intention. Intention to adopt refers to the deliberate and purposeful aim of taking on a certain novel course of action; this information is linked in turn to the concept of intention. Intention to use or actual adoption is intimately related to intention. Customer intentions are also dependent on their understanding of product or service attributes, potential benefits offered by these products or services, perceived risk, and cost of acquisition (Upshaw, 1995). For the purpose of this research, intention to adopt is specifically considered in relation to mobile banking services.

The concept of mobile banking is relatively new and not yet recognised by customers in most parts of the world (Dewan & Dewan, 2010; Sulaiman, Jaffar, & Mohezar, 2007). This may in part explain the problem of why there is currently a sluggish rate of customer adoption and usage of mobile banking services (see e.g., Raleting & Nel, 2011; Laukkanen & Pasanen, 2008; Luarn & Lin, 2005). Efforts to introduce mobile banking services should be marketed to customers to raise awareness of the benefits these services provide, which may then lead to an increase in adoption and usage. (Zhou, Lu, & Wang, 2010; Kim, Chan, & Gupta, 2007) have called for more studies examining value perception among bank customers to identify its importance in driving their behaviour intention to use mobile banking services.

This thesis is based on treating behavioural intention as the key dependent variable in the context of mobile banking services in Saudi Arabia, with a focus on bank ewuvq ogtuø" dgjcxkqwtcn" kpvpgpvkqp" vq" cfqrv" o qdkng" dcpmkpi " ugtxkegu0" Vjwu." vjku" tgugetej" ck o u" vq" fgvgto kpg" vjg" hcevqtu" vj cv" kphnwgpeg" ewuvq ogtuø" kpvpgpvkqp" vq" cfqrv" o qdkle banking services in Saudi Arabia from a value perspective.

1.3 Problem Statement

Mobile technologies and services are often identified as a potentially powerful force for creating a variety of business opportunities. However, the advanced technology now available in mobile devices does not necessarily mean that customers will be eager to adopt new mobile banking services. Countries like Japan and South Korea are showing increased usage in mobile services, but statistics from Europe, North America and the Asia-Pacific region, including Australia and New Zealand, show otherwise. In fact, these countries are significantly lagging behind in usage of the latest mobile technology services (KPMG, 2009). A similar situation is found in Middle Eastern and Africa countries, a KPMG (2009) survey revealed that only 27 per cent of consumers in the Middle East/Africa region are currently utilising banking or payment services through mobile devices. However, there are no exact figures regarding mobile banking users in Saudi Arabia alone. Hence, it is important to identify the factors that promote or hinder the adoption of mobile services in Saudi Arabia.

In this context, it is necessary to consider the fact that the personalisation, ubiquity and location specificity of mobile services makes them unique and distinct from other information and communication technology services. However, diffusion rates for the

usage of mobile devices in countries like Saudi Arabia differ from those of countries such as Japan and South Korea, and the reasons for this need to be examined if Saudi Arabia hopes to enhance the usage rate of mobile devices for various commercial applications, including banking services. According to statistics, there is a great divide between the technical advancements that have been made in the telecommunications sector and ewuvq ogtuø"uegrvkecn"cvvkwfgu"vqyctfu" o qdkng"hkpcpekn"ugtxkegu"*EKVE."4229). Based on vjku"hkpfpki"."vjku"vjguku"yknn"ck o "vq"hwtvjgt"kpvguvki cvg"vjg"tgcuqp"hqt"ewuvq ogtuø"tgnwevcpeg" to adopt these services, especially among the Saudi populace.

Saudi Arabia, as developing economy, has increasingly embraced the capitalistic deregulation of commercial services, primarily as a result of joining the World Trade Organization (WTO) in 2005 (Al-Somali, Gholami, & Clegg, 2009). This has followed in line with the exponential globalisation of the information and telecommunications industry across the world. Contrary to this trend, however, the rate of adoption of mobile banking among Saudi bank customers remains disproportionately low (CITC, 2009; KPMG, 2009; Alsaab, 2009). Many studies on customer behaviour in terms of adoption of mobile banking services in banks have been carried out in developed economies, such as South Korea and Finland where collaboration between financial institutions and wireless telecommunications providers is well established. So far, however, limited empirical research has been undertaken in developing countries, especially in the Middle East (Alsaab, 2009). The development of mobile associated services has the capacity to kpvgitcvg"vjg"uqekcn"cpf"dwukpguu"fq o ckpu"qh" o qdkng"fgxkeg" wugtuø"nkxguø Generally, the key factor in determining the success of such services is convenience; but the issues of awareness, lack of confidence in e-systems, accessibility, and affordability also tend to

play an important role in developing economies. This provides further impetus for the type of research being proposed.

Previous research in the realm of information technology has tended to focus on innovation attributes and user characteristics, rather than on the value-driven qualities of ewuvq ogtuø" dgjcxkqwt" cpf"vjgkt" tgnvkvxg"ko rqtvcnce to understanding the adoption of e-services (Zhou, et al., 2010). However, the majority of the studies were conducted in the non-electronic context by adopting value as the key concept for predicting customer purchase decision making (Gupta & Kim, 2010). Moreover, although a number of factors have been suggested as important to understanding mobile banking adoption, very little attention has been given in the literature to exactly what constitutes value in terms of mobile banking services, and the role of awareness in fostering higher adoption rates. In fact, many studies have restated calls to examine the factors that can be used to predict the adoption behaviour of mobile phone banking (e.g., Wessels & Drennan, 2010; Laforet & Li, 2005; Luarn & Lin, 2005). Therefore, this study takes up those challenges by examining factors affecting behavioural intention to use mobile banking services and the value perceptions held by bank customers toward mobile banking services. The objectives of the present research are identified next.

1.4 Research Objectives

The objective of the research is to understand the problem identified above. To make this clearer an overall general objective, and specific objectives relating to each individual aspect of the study, are identified as follows:

General Objective

The general objective of this study is to determine the intention to adopt mobile banking as an e-financial service among customers of Saudi commercial banks.

Specific Objectives

- To examine the relationship between previous experience of mobile phone experience (i.e., previous experience of mobile phone use) and perceived benefit factors (performance expectancy and effort expectancy).
- To identify the relationships between awareness of mobile banking services and performance expectancy, effort expectancy and perceived risk of using these services.
- To examine the relationship between benefit factors (performance expectancy and effort expectancy) and sacrifice factors (perceived cost, perceived risk) with reference to: (a) perceived value; and (b) behavioural intention.
- To identify the relationship between perceived value and behavioural intention.
- To investigate if perceived value mediates the relationship between benefit factors (performance expectancy and effort expectancy) and sacrifice factors (perceived cost, perceived risk) within behavioural intention.

1.5 Research Questions

From the above objectives, research questions for this study have been formulated, and are presented below:

- 1) Is there any significant relationship between previous mobile phone experience and benefit factors (performance expectancy and effort expectancy)?

- 2) Is there any significant relationship between awareness of mobile banking services, and performance expectancy, effort expectancy and perceived risk of using these services?
- 3) Is there any significant relationship between benefit factors (performance expectancy and effort expectancy) and perceived value of using mobile banking services?
- 4) Is there any significant relationship between sacrifice factors (perceived cost, perceived risk) and perceived value of using mobile banking services?
- 5) Is there any significant relationship between benefit factors (performance expectancy and effort expectancy) and behavioural intention to use mobile banking services?
- 6) Is there any significant relationship between sacrifice factors (perceived cost, perceived risk) and behavioural intention to use mobile banking services?
- 7) Is there any significant relationship between perceived value and behavioural intention to use mobile banking services?
- 8) Does perceived value mediate the relationship between benefit factors (performance expectancy and effort expectancy) and behavioural intention to use mobile banking services?
- 9) Does perceived value mediate the relationship between sacrifice factors (perceived cost, perceived risk) and behavioural intention to use mobile banking services?

1.6 Scope of the Study

In the present day, mobile technology has become a necessity, rather than just being a tool for communication. As a result, the adoption of mobile technologies considered from a cognitive behavioural perspective has become a predominant trend in IT adoption and implementation research. As mentioned previously, the main objective of the current study is to investigate the factors that influence the adoption of mobile banking services in Saudi Arabia. This research is based on existing technology and innovation adoption theories, including the unified theory of acceptance and use of technology (UTAUT) model (Venkatesh, Morris, Davis, & Davis, 2003). The current study focuses on the factors that promote or hinder the adoption of mobile banking for potential customers. Therefore, this research considers the influence of factors such as awareness of mobile banking services, performance expectancy, effort expectancy, perceived risk and perceived cost associated with using these services are also investigated as possible explanations of perceived value and usage intention. Thus, the scope of this research extends to studying the influence of all these aspects of mobile banking services on customer usage intention.

To some extent, the scope of this study depends on the data gathered from bank customers in Saudi Arabia. The setting of the research, the Kingdom of Saudi Arabia, is a country with thirteen administrative regions. The population of interest is defined as bank customers who have a mobile phone (and who are currently non-users of mobile banking services) drawn from three major economic areas; namely, Jeddah, Al-Riyadh, and Dammam. In order to gather primary data, questionnaires were sent to banking customers

in commercial banks who do not use mobile banking services; since the study focuses on potential mobile banking customers, customers who are already using mobile banking services are excluded from the sampling population. Similarly, only those customers who could potentially be motivated to use mobile banking services are included in the sampling. Moreover, banks do not have the necessary setup to provide mobile banking services to their customers. The commercial/private banks operating in the Kingdom have already proven effective in providing e-banking services, and as such these banks present themselves as the best candidates for expanding the services they provide through mobile technology.

To summarise, the sample of this study is limited to potential adopters of mobile banking services from commercial banks in Saudi Arabia. The current research aims to identify the potential issues that may hinder the adoption of mobile technological services in the banking field, and to make some recommendations for both users and service providers to enable them to enhance the utility of the mobile banking services being provide to potential users.

1.7 Research Significance

As briefly mentioned earlier, recent developments in mobile technology have enabled users to convert their handsets from plain tools of communication, to versatile composite m-commerce gadgets. Nevertheless, only a handful of customers currently appear to be benefiting from the mobile banking applications that such technologies provide. Improving customer adoption behaviour of mobile banking would help expand the information and telecommunications sector, along with the financial services

industry. The results of this research will be able to assist academics, practitioners and policy makers to better understand the factors that affect adoption behaviour in relation to mobile banking services.

From an academic perspective, the research model presented is based on modifying UTAUT, and was subjected to empirical testing in the banking sector in Saudi Arabia. This model is potentially invaluable for researchers who are interested in electronic service markets, especially e-banking services. Generally speaking, the majority of existing literature in the area of e-banking services covers telephone banking or Internet banking (Wessels & Drennan, 2010). As mobile technology has become an increasingly vital element of mobile banking services there has been growing interest in understanding adoption behaviour processes and customer-perceptions involved in adoption behaviour. This has led to calls for more academic research to be conducted that could help advance knowledge of adoption behaviour in a mobile commerce context. The research model presented here could help fulfil this need by shedding light on customer behaviour in relation to mobile banking services; specifically, on how value perception together with the awareness of services available can affect the adoption intent of consumers, and the way this can be used to inform how electronic banking transactions are carried out. This research also draws upon the conception of awareness as constructed in the hierarchy of effect model (HOE), in order to examine the influence of awareness as an antecedent of perceived risk; a factor which has thus far been seldom researched.

Of the first efforts to integrate UTAUT with mental accounting theory (MAT) in order to

that is already available, a particular construct of value perception drawn from MAT is being proposed. The concept of value is used in numerous studies in non-electronic and behaviour in terms of the doubts that arose, especially in relation to mobile electronics services (Gupta & Kim, 2010). Thus, this study aims to offer an insight into mobile banking adoption intention behaviour using positive factors (performance expectancy and effort expectancy) alongside sacrifice factors (cost and risk). Lastly, the study also attempts to fill a gap in the literature by examining value perception as a mediating variable within the research model. As a result, this study may present a valuable point of departure for other studies in the subject area.

For practitioners involved in mobile banking services, the result of this study is not surprising. It will enable these banks to develop a strategic plan in order to market their products and services. It could also benefit organisations and firms that want to use similar facilities and technology to transfer money through mobile banking, including the developers of the services, or even entrepreneurs.

On the practical side, an initial investigation was conducted by the researcher with a number of Saudi bank managers to ascertain that there is a demand for this study. They support the need for this type of relevant information, on the basis that one needs to observe the behaviour of customers in order to provide better financial services and products. Thus, it is crucial for financial institutions to use the findings of this study to develop their competitive advantage around the salient factors identified in this research,

services can be defined as awareness of the existence of a mobile banking system and its benefits (Al-Somali, et al., 2009). According to Amin, Hamid, Lada, and Anis (2008), and Pikkarainen, Pikkarainen, Karjaluoto, and Pahnla (2004) the degree of awareness of mobile banking services can be measured by the amount of information they have about the services in question.

Performance Expectancy

Performance expectancy is defined by Venkatesh et al. (2003, p. 447) as the degree to which an individual believes that using the system will help him or her to attain gains in performance. A customer believes that using mobile banking will help him or her attain gains in performing banking tasks through mobile channels.

Effort Expectancy

Effort expectancy, as identified by Venkatesh et al. (2003, p. 450), is defined as the degree to which an individual believes that using the system will require a great amount of effort. Effort expectancy is a key factor in the technology adoption model (TAM), reflecting user perceptions of how easy it is to use some given technology.

Perceived Cost

Perceived cost refers to the perceived quantifiable cost of acquisition and use of technology (Koenig-Lewis, Palmer, & Moll, 2010). According to Koenig-Lewis et al. (2005, p. 880) definition, perceived financial cost can also be defined as the degree to which an individual believes that using the system will require a great amount of financial resources. Perceived cost is a key factor in the technology adoption model (TAM), reflecting user perceptions of how easy it is to use some given technology.

Perceived Risk

Previous research (Cunningham, 1967) has conceptualised perceived risk as a dual pronged phenomenon, involving uncertainty and consequences. A similar definition is introduced by Bauer (1967) and cited in Luo, Li, Zhang, and Shinm (2010, p. 225), and fghkpgu" rgtgkxgf" tkum" cu" õc" eq o dkpcvkqp" qh" wpegtvckpv{ " rnuw" ugtkqwupguu" qh" cp" qwveq o g" kpxqnxgf0ö

Perceived Value

Zeithaml (1988, p. 14) defines petegkxgf" xcnwg" cu" õvjg" eqpuw o gt)u" qxgtcmn" assessment of the utility of a product or service based on perceptions of what is received cpf" y jcv"ku" ikxgp0ö

Behavioural Intention

Dgjcxkqwtcn" kpvgpvkqp" ku" cp" kpfkckvkqp" qh" qpgou" tgcfkpguu" vq" rgthqt o " c" egtvckp" behaviour (Ajzen & Fishbein, 1980). According to Lin (2011), intention to adopt can be used to assess the likelihood of dcpmuø"ewuvq o gtu"cfqrvkpi" o qdkng"dcpmkpi"kp"vjg"hwvwtg0

1.9 Organisation of the Thesis

The thesis is divided into seven chapters. This first chapter provides the background of the study, followed by the problem statement, the research objectives, research questions, the significance of the research, the scope of the study, and a definition of terms used in the research. The remainder of the thesis is outlined as follows.

Chapter two describes the current status of the banking sector in Saudi Arabia. This chapter starts by describing the national economy of Saudi Arabia in relation to the ugtxkeguø sector under the Development Plans. Following this, the current condition of the banking sector, the issues and challenges it faces and its future prospects are discussed.

Finally, the role of the telecommunication sector in providing banking services and the present status of mobile banking services among banks in Saudi Arabia are explained.

Chapter three presents a review of the prior literature on issues which relate to the subject area of this study. This chapter is divided into three subsections. The first part focuses on how adoption intention behaviour can be used in order to shed light on actual usage and intention to use behaviour, followed by a brief explanation of the various models that are developed and used in describing the adoption of new technology among individuals. Customer technology adoption behaviour in a mobile banking environment is also outlined in this subsection. The second part covers the history, definition, types and benefits of mobile banking services. This part also focuses on studies that have investigated adoption of mobile banking services and the factors hindering or enhancing such adoption behaviour. The final part of this chapter discusses the concept of perceived value, its definitions, benefit and sacrifice factors as determinants of the perceived value of mobile banking services, and how perceived value explains behavioural intention.

Chapter four outlines the theoretical framework used in this study. The chapter explains the theoretical foundations of this study, based on three theories; namely, the unified theory of acceptance and use of technology, mental accounting theory, and the hierarchy of effects model. It also discusses how the research model and hypotheses of the study were developed.

The research methodology of the study is presented in chapter five. To begin with, the choice of research design is examined. After this, the formulation of the research instrument, its measurement items, its scales, and its validity and reliability are detailed.

The chapter also describes the sampling design, data collection and data analysis methods employed in the study.

In chapter six, the empirical results of the study are analysed. First, the researcher uses descriptive statistics to summarise the data. Second, the hypothesis of the thesis is tested using two step structural equation modelling, and the results of this are presented.

Finally, chapter seven is dedicated to the discussion of these results and the final conclusions of the study. Specifically, it offers a summary of the key research findings and a discussion of the implications, contributions, and limitations of the study, as well as possible areas for potential future research and improvement.

REFERENCES

- Adams, D. A., Nelson, R. R., & Todd, P. A. (1992). Perceived Usefulness, Ease of Use, and Usage of Information Technology: A Replication. *MIS Quarterly*, 16(2), 227-247.
- Adler, N. J. (1983). Management Studies Involving Culture. *Journal of International Business Studies*, 14(Fall), 29-47.
- Agrawal, R., & Prasad, J. (1999). Are Individual Differences Germane to the Acceptance of New Information Technologies?. *Decision Sciences*, 30 (2), 361-391.
- Ajzen, I. (1991). The Theory of Planned Behaviour. *Organizational Behaviour and Human Decision Processes*, 50(2), 179-211.
- Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour*. Englewood Cliffs, NJ: Prentice-Hall.
- Al-Ghaith, W., Sanzogni, L., & Sandhu, K. (2010). Factor Influencing the Adoption and Usage of Online Services in Saudi Arabia. *The Electronic Journal of Information Systems in Developing Countries*, 40(1). Retrieved from <http://www.ejisdc.org/ojs2/index.php/ejisdc/article/viewFile/620/303>
- Al-Muharrami, S. (2009). The Competition and Market Structure in the Saudi Arabia Banking. *Journal of Economic Studies*, 36(5), 446-460.
- Al-Qeisi, K. I. (2009). *Analyzing the Use of UTAUT Model in Explaining an Online Behaviour: Internet Banking Adoption* (Doctoral dissertation, Brunel University). Retrieved from <http://bura.brunel.ac.uk/handle/2438/3620>
- Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An Investigation into the Acceptance of Online Banking in Saudi Arabia. *Technovation*, 29, 130-141.
- Alba, J. W., & Hutchinson, J. W. (1987). Dimensions of Consumer Expertise. *Journal of Consumer Research*, 13(3), 411-454.
- Alsaab, S. A. (2009). *SMS Banking in Saudi Arabia* (Master's thesis, University Utara Malaysia). Retrieved from <http://etd.uum.edu.my/1706/>
- Amin, H., Hamid, M., Lada, S., & Anis, Z. (2008). The Adoption of Mobile Banking in Malaysia : The Case of Bank Islam Malaysia Berhad (BIMB). *International Journal of Business and Society*, 9(2), 43-53.

- Amin, H., Hamid, M. R. A., Tanakinjal, G. H., & Lada, S. (2006). Undergraduate Attitudes and Expectations for Mobile Banking. *Journal of Internet Banking & Commerce*, 11(3). Retrieved from <http://www.arraydev.com/commerce/JIBC/2006-12/JIBC2.htm>
- Amin, H., & Ramayah, T. (2010). SMS Banking: Explaining The Effects of Attitude , Social Norms and Perceived Security and Privacy. *The Electronic Journal on Information Systems in Developing Countries*, 41(2). Retrieved from <https://www.ejisdc.org/ojs2/index.php/ejisdc/article/view/638/315>
- Anckar, B., & D'Incau, D. (2002). Value Creation in Mobile Commerce: Finding from a Consumer Survey. *The Journal of Information Technology Theory and Application*, 4(1), 43-64.
- Anderson, J. (2010). M-banking in Developing Markets: Competitive and Regulatory Implications. *INFO journal*, 12(1), 18-25.
- Anderson, J., & Schwager, P. (2004). SME Adoption of Wireless LAN Technology: Applying the UTAUT Model. *Proceedings of the Southern Association for Information Systems*, 7, 39- 43.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-step Approach. *Psychological Bulletin*, 103(3), 411-423.
- Anderson, J. C., & Narus, J. A. (1998). Business Marketing: Understand What Customers Value. *Harvard Business Review*, 76(6), 53-67.
- Anyasi, F. I., & Otubu, P. A. (2009). Mobile Phone Technology in Banking System: Its Economic Effect. *Research Journal of Information Technology*, 1(1). Retrieved from <http://www.maxwellsci.com/print/rjit/1-5.pdf>
- Barati, S., & Mohammadi, S. (2009, Oct). *An Efficient Model to Improve Customer Acceptance of Mobile Banking*. Paper presented at the World Congress on Engineering and Computer Science, San Francisco, USA.
- Barnes, S. J., & Corbitt, B. (2003). Mobile Banking: Concept and Potential. *International Journal of Mobile Communications*, 1(3), 273-288.
- Baron, R.M., & Kenny, D.A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic and Statistical Considerations. *Journal Personality Social Psychology*, 51, 1173-1182.
- Barry, T., & Howard, D. (1990). A Review and Critique of the Hierarchy of Effects in Advertising. *International Journal of Advertising*, 9(2), 121-135.

- Barsh, J., Crawford, B., & Grosso, B. (2000). How E-tailing Can Rise from the Ashes. *Mckinsey Quarterly*, 3, 98-109.
- Batchelor, B. (n.d.). The History of E-Banking. Retrieved from http://www.ehow.com/about_5109945_history-ebanking.html
- Beiginia, A. R., Besheli, A. S., Soluklu, M. E., & Ahmadi, M. (2011). Assessing the Mobile Banking Adoption Based on the Decomposed Theory of Planned Behaviour. *European Journal of Economics, Finance and Administrative Sciences*, (28), 7-15.
- Belkhamza, Z., & Wafa, S. A. (2009). The Effect of Perceived Risk on the Intention to Use E-commerce: The Case of Algeria. *Journal of Internet Banking and Commerce*, 14(1). Retrieved from <http://www.arraydev.com/commerce/jibc/>
- Bentler, P.M., & Bonnet, D.C. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88(3), 588-606.
- Bhatnager, A., Misra, S., & Rao, H. R. (2000). On Risk, Convenience, and Internet Shopping Behaviour. *Communications of the ACM*, 43(11), 98-105.
- Bollen, K.A. (1990). Overall fit in covariance structure models: Two types of sample size effects. *Psychological Bulletin*, 107(2), 256-59.
- Bolton, R. N., & Drew, J. H. (1991). A Longitudinal Analysis of the Impact of Services Changes on Customer Attitudes. *Journal of Marketing*, 55(January), 1-9.
- Bouwman, H., Carlsson, C., Walden, P., & Molina-Castillo, F. J. (2008). Trends in Mobile Services in Finland 2004-2006: From Ringtones to Mobile Internet. *The Journal of Policy, Regulation and Strategy for Telecommunications, Information and Media*, 10(2), 75-93.
- Bradburn, N., Sudman, S., & Wansink, B. (2004). *Asking Question: The Definitive Guide to Questionnaire Design for Market Research, Political Polls, Social and Health Questionnaire*. San Francisco: John Wiley and Sons.
- Brady, M. K., Knight, G. A., Cronin, J. J., Hult, G. T., & Keillor, B. D. (2005). Removing the Contextual Lens: A Multinational, Multi-setting Comparison of Service Evaluation Models. *Journal of Retailing*, 81(3), 215-230.
- Brislin, R. (1976). Comparative Research Methodology: Cross-cultural Studies. *International Journal of Psychology*, 11(3), 215-229.
- Brocka, B., & Bruce, S. (2003). *Quality Management: Implementing the Best Ideas of the Masters*. Homewood, IL: Business One Irwin.

- Brown, I., Cajee, Z., Davies, D., & Stroebel, S. (2003). Cell Phone Banking: Predictors of Adoption in South Africa. *International Journal of Information Management*, 23, 381-394.
- Bryman, A., & Bell, E. (2011). *Business Research Methods* (3rd ed.). New York, NY: Oxford University Press.
- Burrell, G., & Morgan, G. (1979). *Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life*. Aldershot, Hants, England: Ashgate Publishing.
- Byrne, B. M. (1994). *Structural Equation Modeling with EQS and EQS/Windows: Basic Concepts, Applications, and Programming*. California: Sage.
- Byrne, B. M. (2010). *Structural Equation Modelling in AMOS: Basic Concepts, Applications and Programming*. New Jersey: Lawrence Erlbaum Associates Publisher.
- Byun, S., & Feinberg, R. A. (2007). Understanding Consumer Acceptance of Mobile Technology for Financial Service Delivery. *American Marketing Association*, 81-82.
- Carter, L., & Belanger, F. (2005). The Utilization of E-Government Services: Citizen Trust, Innovation and Acceptance. *Information Systems Journal*, 15, 5-25.
- Center Department of Statistic & Information. (2007). Riyadh: Saudi Arabia. Retrieved from <http://www.cdsi.gov.sa/>
- Center Department of Statistic & Information. (2009). Riyadh: Saudi Arabia. Retrieved from <http://www.cdsi.gov.sa/>
- Center Department of Statistic & Information. (2010). Riyadh: Saudi Arabia. Retrieved from <http://www.cdsi.gov.sa/>
- Chau, P. Y. K. (1996). An Empirical Assessment of a Modified Technology Acceptance Model. *Journal of Management Information Systems*, 13, 185-204.
- Chen, Z., & Dubinsky, A. J. (2003). A Conceptual Model of perceived Customer Value in E-commerce: A Preliminary Investigation. *Psychology & Marketing*, 20(4), 323-347.
- Choi, K. S., Cho, W. H., Lee, S., Lee, H., & Kim, C. (2004). The Relationships Among Quality, Value, Satisfaction and Behavioural Intention in Health Care Provider Choice: A South Korean Study. *Journal of Business Research*, 57, 913-921.

- Ejwpi." P0." ("Myqp." U0" L0" *422; +0" Vjg" Ghhgevu" qh" Ewuvq ogtuø" Oqdkng" Gzrgtkgpeg" cpf" Technical Support on the Intention to Use Mobile Banking. *CyberPsychology & Behaviour*, 12(5), 539-543.
- Churchill, G. A. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research*, 16(February), 64-67.
- Churchill, G. A. (1995). *Marketing Research: Methodological Foundations* (6th ed.). Fort Worth, TX: The Dryden Press.
- Communication and Information Technology Commission (CITC) (2009). *Annual Report 2009*. Riyadh: Saudi Arabia. Retrieved from <http://www.citc.gov.sa>
- Communication and Information Technology Commission (CITC) (2012). *Annual Report 2012*. Riyadh: Saudi Arabia. Retrieved from <http://www.citc.gov.sa>
- Compeau, D. R., & Higgins, C. A. (1995). Computer Self-Efficacy: Development of a Measure and Initial Test. *MIS Quarterly*, 19(2), 189-211.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and Analysis Issues for Field Setting*. Chicago: Rand McNally.
- Crabbe, M., Standing, C., Standing, S., & Karjaluoto, H. (2009). An Adoption Model for Mobile Banking in Ghana. *International Journal of Mobile Communications*, 7(5), 515-543.
- Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Method Approaches* (3rd ed.). Thousand Oaks, California: SAGE Publications, Inc.
- Cronin, J., Brady, M., Brand, R., Hightower, R., & Shemwell, D. (1997). A Cross-sectional Test of the Effect and Conceptualization of Service Value. *Journal of Services Marketing*, 11(6), 375-391.
- Cronin, J., Brady, M., & Hult, G. (2000). Assessing the Effects of Quality, Value, and Customer Satisfaction on Consumer Behavioural Intentions in Service Environments. *Journal of Retailing*, 76(2), 193-218.
- Cronin, M. J. (1997). *Banking and Finance on the Internet*. New York, NY: John Wiley and Sons.
- Etw|"."R0."Pgvq."N0."Owpq|-Gallego, P., & Laukkanen, T. (2010). Mobile Banking Rollout in Emerging Markets: Evidence from Brazil. *The International Journal of Bank Marketing*, 28(5), 342-371.

- Cunningham, S. M. (1967). The Major Dimensions of Perceived Risk. In D.F. Cox (Ed.), *Risk Taking and Information Handling in Consumer Behaviour* (PP. 82-108). Boston: Harvard University Press.
- Czaja, R., & Blair, J. (2005). *Designing Survey: A Guide to Decisions and Procedures*. London: Sage Publications.
- Davis, F. (1989). Perceived Usefulness, Perceived Ease of Use, and Use Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.
- Davis, F., Bagozzi, R., & Warshaw, P. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982-1003.
- Dawes, J. (2008). Do Data Characteristics Change According to the Number of Scale Points Used? An Experiment Using 5-Point, 7-Point and 10-Point Scales. *International Journal of Market Research*, 50(1), 61-77.
- Day, G., & Fahey, L. (1988). Valuing Market Strategies. *Journal of Marketing*, 52(July), 45-57.
- De Vaus, D. (2001). *Research Design in Social Research*. London: Sage Publications.
- Deng, Z., Lu, Y., & Chen, Z. (2007). *Exploring Chinese User Adoption of Mobile Banking*. Paper presented at the Wuhan International Conference on E-Business, Wuhan, China.
- Dewan, S. M., & Dewan, A. M. (2010). *Modelling Choice of Mobile Technology for M-Banking*. Paper presented at the International Conference on Industrial Engineering and Operations Management, Dhaka, Bangladesh.
- Dewan, S. M., Low, G., Land, L., & Dewan, A. M. (2009, Dec). *Consumer Choice Model of Mobile Banking*. Paper presented at the Australasian Conference on Information Systems, Melbourne, Australia.
- Dholakia, R. R., & Dholakia, N. (2004). Mobility and Markets: Emerging Outlines for M-commerce. *Journal of Business*, 57(12), 1391-1396.
- Dodds, W. B., & Monroe, K. B. (1985). The Effect of Brand and Price Information on Subjective Product Evaluations. *Advances in Consumer Research*, 12(1), 85-90.
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). The Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research*, 28(3), 307-319.

- Donner, J., & Tellez, C. A. (2008). Mobile Banking and Economic Development: Linking Adoption, Impact, and Use. *Asian Journal of Communication, 18*(4), 318-322.
- Eggert, A., & Ulaga, W. (2002). Customer Perceived Value: A Substitute for Satisfaction in Business Market. *Journal of Business and Industrial Marketing, 17*, 107-118.
- Elmore, P. F., & Beggs, D. L. (1975). Salience of Concepts and Commitment to Extreme Judgments in Response Pattern of Teachers. *Education, 95*(4), 325-334.
- Fang, X., Chan, S., Brzezinski, J., & Xu, S. (2005). Moderating Effects of Task Type on Wireless Technology Acceptance. *Journal of Management Information Systems, 22*(3), 123-157.
- Featherman, M. S., & Pavlou, P. A. (2003). Predicting E-services Adoption: A Perceived Risk Facets Perspective. *International Journal of Human-Computer Studies, 59*, 451-474.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American Customer Satisfaction Index: Nature, Purpose and Findings. *Journal of Marketing, 60*(October), 7-18.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research, 18*(February), 39-50.
- Fowler, F. J. (2002). *Survey Research Methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Gaski, J. F. (1989). Interrelations Amongst a Channel Entity's Power Sources: An Impact of the Exercise of Reward and Coercion on Expert, Referent and Legitimate Power Sources. *Journal of Marketing Research, 23*(1), 62-77.
- Gefen, D., & Straub, D. W. (2000). The Relative Importance of Perceived Ease of Use in IS Adoption: A study of Ecommerce Adoption. *Journal of the Association for Information Systems, 1*(8). Retrieved from <http://www.cis.gsu.edu/dstraub/Courses/MGS%209940/2007/Tim-Mathieu-Betrice%20choice.pdf>
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A Simple Guide and Reference 11.0 Update* (4th ed.). Boston: Allyn & Bacon.

- Goyal, V., Pandey, U., & Batra, S. (2012). Mobile Banking in India: Practices, Challenges and Security Issues. *International Journal of Advanced Trends in Computer Science and Engineering*, 1(2), 56-66.
- Grabner-Krauter, S., & Faullant, R. (2008). Consumer Acceptance of Internet Banking: The Influence of Internet Trust. *International Journal of Bank Marketing*, 26(7), 483-504.
- Green, P. E., Tull, D. S., & Albaum, G. (1988). *Research for Marketing Decisions*. Eaglewood Cliffs, Prentice Hall.
- Gu, J. C., Lee, S. C., & Suh, Y. H. (2009). Determinants of Behavioural Intention to Mobile Banking. *Expert Systems with Applications*, 36, 11605-11616.
- Gupta, S. (2013). The Mobile Banking and Payment Revolution. *European Financial Review*, (February ó March), 3-6. Retrieved from <http://www.hbs.edu/faculty/Pages/item.aspx?num=44356>
- Gupta, S., & Kim, H. W. (2007). The Moderating Effect of Transaction Experience on the Decision Calculus in On-Line Repurchase. *International Journal of Electronic Commerce*, 12, 127-158.
- Gupta, S., & Kim, H. W. (2010). Value-Driven Internet Shopping: The Mental Accounting Theory Perspective. *Psychology & Marketing*, 27(1), 13-35.
- Hair, J., Blake, W., Babin, B., & Anderson, R. (2010). *Multivariate Data Analysis* (7th ed.). New Jersey: Prentice-Hall.
- Han, C., & Yang, S. (2010). Value-based Adoption of Mobile Banking Service: A Multi-Channel Perspective. *Proceedings of the International Conference on Information Networks and Automation*, 2, 506-510. doi : [10.1109/ICINA.2010.5636459](https://doi.org/10.1109/ICINA.2010.5636459)
- Harris, W. (2008, 04 June). How Mobile Banking Works. Retrieved from <http://money.howstuffworks.com/personal-finance/online-banking/mobile-banking.htm>
- Harrison, T. (2000). *Financial Services Marketing*. Wiltshire: Prentice Hall.
- Hartwick, J., & Barki, H. (1994). Explaining the Role of User Participation in Information System Use. *Management Science*, 40(4), 440-465.
- Henderson, J. M., & Quandt, R. E. (1958). *Microeconomic Theory: A Mathematical Approach*. New York: McGraw Hill.

- Herr, P. M., Kardes, F. R., & Kim, J. (1991). Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessibility-Diagnosticity Perspective. *Journal of Consumer Research*, 17(4), 454-462.
- Hinkin, T. R. (1995). A Review of Scale Development Practices in the Study of Organisations. *Journal of Management*, 21, 967-988.
- Ho, S.H., & Ko, Y. Y. (2008). Effects of Self-service Technology on Customer Value and Customer Readiness: The Case of Internet Banking. *Internet Research*, 18 (4), 427-446.
- Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit. *The Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Horna, J. (1994). *The Study of Leisure*. Oxford: Oxford University Press.
- Howcroft, B., Hamilton, R., & Hewer, P. (2002). Consumer Attitude and the Usage and Adoption of Home-based Banking in the United Kingdom. *International Journal of Bank Marketing*, 20(3), 111-121.
- Hoyer, W., & Macinnis, D. (2009). *Consumer Behaviour* (5th ed.). South-Western: Cengage Learning.
- Hoyle, R. H. (1995). The Structural Equation Modelling Approach. In Rick. H. H. (ed), *Structural Equation Modelling: Concepts, Issues and Applications* (pp. 1-15). Thousand Oaks, CA: Sage.
- Informa. (2005). *Mobile Content and Services: Worldwide Market Analysis & Strategic Outlook*. London: Informa Telecoms & Media.
- James, L. R., Mulaik, S. A., & Brett, J. (1982). *Causal Analysis: Models, Assumptions and Data*. Beverly Hills, CA: Sage.
- Jayawardhena, C., & Foley, P. (2000). Changes in the Banking Sector: The Case of Internet Banking in the UK. *Internet Research*, 10(1), 19-31.
- Jiang, J. J., Hsu, M. K., Klein, G., & Lin, B. (2000). E-commerce User Behaviour Model: An Empirical Study. *Human Systems Management*, 19(4), 265-276.
- Johnson, L. (2011, July 18). Consumer Awareness Reigns as Main Factor in Mobile Banking: Study. *Mobile Commerce Daily*. Retrieved from <http://www.mobilecommercedaily.com/2011/07/18/consumer-awareness-reigns-as-main-factor-in-mobile-banking-study>

- Jones, I. (1997). Mixing Qualitative and Quantitative Methods in Sports Fan Research. *The Qualitative Report*, 3(4). Retrieved from <http://www.nova.edu/ssss/QR/QR3-4/jones.html>
- Jöreskog, K., & Sörbom, D. (1993). *LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language*. Chicago, IL: Scientific Software International Inc.
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision Under Risk. *Econometrica*, 47, 263-291.
- Kerlinger, F. N. (1986). *Foundations of Behavioural Research*. Forth Worth, Texas: Harcourt Brace Jovanovich College Publishers.
- Kesh, S., Ramanujan, S., & Nerur, S. (2002). A Framework of Analyzing E-commerce Security. *Information Management and Computer Security*, 10(4), 149-158.
- Kim, G., Shin, B., & Lee, H. G. (2009). Understanding Dynamics Between Initial Trust and Usage Intentions of Mobile Banking. *Information Systems Journal*, 19, 283-311.
- Kim, H. W., Chan, H. C., & Gupta, S. (2007). Value-based Adoption of Mobile Internet : An Empirical Investigation. *Decision Support System*, 43, 111-126.
- Kim, K., Prabhakar, B., & Park, S. (2009). Trust, Perceived Risk and Trusting Behaviour in Internet Banking. *Asia Pacific Journal of Information Systems*, 19(3). Retrieved from <http://apjis.or.kr/pdf/MIS019-003-1.pdf>
- Kleijnen, M., Ruyter, K. d., & Wetzels, M. (2007). An Assessment of Value Creation in Mobile Service Delivery and the Moderating Role of Time Consciousness. *Journal of Retailing*, 83(1), 33-46.
- Kleijnen, M., Wetzels, M., & Ruyter, K. d. (2004). Consumer Acceptance of Wireless Finance. *Journal of Financial Services Marketing*, 8(3), 206-217.
- Kline, R. B. (2010). *Principles and Practice of Structural Equation Modelling* (3rd ed.). New York: The Guildford Press.
- Knutsen, L., Constantiou, I. D., & Damsgaard, J. (2005). Acceptance and Perceptions of Advanced Mobile Services: Alterations During a Field Study. Proceeding of the the International Conference on Mobile Business, 326 - 332. doi: [10.1109/ICMB.2005.13](https://doi.org/10.1109/ICMB.2005.13)
- Koenig-Lewis, N., Palmer, A., & Moll, A. (2010). Predicting Young Consumers' Take up of Mobile Banking Services. *The International Journal of Bank Marketing*, 28(5), 410- 432.

- Komulainen, H., Mainela, T., Tahtinen, J., & Ulkuniemi, P. (2004, Sep). *Exploring Customer Perceived Value in a Technology Intensive Service Innovation*. Paper presented at the IMP Conference, Copenhagen, Denmark.
- Koo, C., & Wati, Y. (2010). "Vqyctf"cp"Wpfgtuvcpfkpi"qh"vjg"Ogfkcvkpi"Tqng"qh"õVtwuvö" in Mobile Banking Service: An Empirical Test of Indonesia Case. *Journal of Universal Computer Science*, 16(13), 1801-1824.
- Kotler, P. (2002). *Marketing Management* (Millenium Edition). Boston: Person Custom.
- KPMG. (2009). *Consumers and Convergence III: Consumer Taking Charge, International survey report*, 1-36. Retrieved from www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/Consumers-and-Convergence-III.pdf
- Krejcie, R., & Morgan, D. (1970). Detemining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30, 607-610.
- Kwak, B. H., Jun, W., Gruenwold, L., & Hong, S. k. (2002). A Study on the Evaluation Model for University Libraries in Digital Environments. *Lecture Notes in Computer Science*, 2458, 204-217.
- Laforet, S., & Li, X. (2005). Consumers' Attitudes towards Online and Mobile Banking in China. *The International Journal of Bank Marketing*, 23(5), 362 - 380.
- Lamb, C. W., Hair, J. F., & McDaniel, C. (2008). *Essentials of Marketing* (7th ed.). South-Western: Cengage Learning.
- Lapierre, J. (2000). Customer Perceived Value in Industrial Contexts. *Journal of Business & Industrial Marketing*, 15, 122-140.
- Laukkanen, T. (2007). Internet Vs Mobile Banking: Comparing Customer Value Perceptions. *Business Process Management Journal*, 13(6), 788-797.
- Laukkanen, T., & Kiviniemi, V. (2010). The Role of Information in Mobile Banking Resistance. *The International Journal of Bank Marketing*, 28(5), 372-388.
- Laukkanen, T., & Pasanen, M. (2008). Mobile Banking Innovators and Early Adopters: How they Differ from other Online Users?. *Journal of Financial Services Marketing*, 13(2), 86-94.
- Lavidge, R. C., & Steine, G. A. (1961). A Model for Predictive Measurements of Advertising Effectiveness. *Journal of Marketing*, 25, 59-62.

- Lee, C. P., Mattila, M., & Shim, J. P. (2007). An Exploratory Study of Information Systems Resistance: The Case of Mobile Banking Systems in Korea and Finland. *AMCIS 2007 Proceedings*. Paper 448.
- Lee, K. S., Lee, H. S., & Kim, S. Y. (2007). Factors Influencing the Adoption Behaviour of Mobile Banking: A South Korean Perspective. *Journal of Internet Banking & Commerce*, 12(2), 1-9.
- Lee, M., McGoldrick, P., Keeling, K., & Doherty, J. (2003). Using ZMET to Explore Barriers to the Adoption of 3G Mobile Banking Services. *International Journal of Retail & Distribution Management*, 31(6), 340-348.
- Lee, Y., Park, J., & Chung, N. (2009). An Exploratory Study on Factors Affecting Usage Intention toward Mobile Banking: A Unified Perspective Using Structural Equation Modeling. *Society for Marketing Advances Proceedings*;2009, 347-359.
- Li, J. P., & Kishore, R. (2006). How Robust is the UTAUT Instrument? A Multigroup Invariance Analysis in the Context of Acceptance and Use of Online Community Weblog Systems. *Proceedings of the 2006 ACM SIGMIS CPR conference on computer personnel research*, 347-359.
- Li, W., & McQueen, R. J. (2008). Barriers to Mobile Commerce Adoption: An Analysis Framework for a Country-level Perspective. *International Journal of Mobile Communications*, 6(2), 231-257.
- Lin, B., & Jones, C. A. (1997). Some Issues in Conducting Customer Satisfaction Survey. *Journal of Marketing Practice: Applied Marketing Science*, 3(1), 4-13.
- Lin, H. F. (2011). An Empirical Investigation of Mobile Banking Adoption: The Effect of Innovation Attributes and knowledge-Based Trust. *International Journal of Information Management*, 31(3), 252-260.
- Lin, H., & Wang, Y. (2005). Predicting Consumer Intention to Use Mobile Commerce in Taiwan. *Proceeding of the the International Conference on Mobile Business*, 406 - 412. doi: [10.1109/ICMB.2005.80](https://doi.org/10.1109/ICMB.2005.80)
- Lissitz, R. W., & Green, S. B. (1975). Effect of the Number of Scale Points on Reliability: A Monte Carlo Approach. *Journal of Applied Psychology*, 60(1), 10-13.
- Littler, D., & Melanthiou, D. (2006). Consumer Perceptions of Risk and Uncertainty and the Implications for Behaviour Towards Innovative Retail Services: The Case of Internet Banking. *Journal of Retailing and Consumer Services*, 13(6), 431-443.

- Liu, G., Huang, S., & Zhu, X. (2008). User Acceptance of Internet Banking in an Uncertain and Risky Environment. *Proceedings of the International Conference on Risk Management & Engineering Management*, 381-386. doi: [10.1109/ICRMEM.2008.82](https://doi.org/10.1109/ICRMEM.2008.82)
- Lu, J., Yu, C., Liu, C., & Yao, J. E. (2003). Internet Research: Technology Acceptance Model for Wireless Internet. *Electronic Networking Applications and Policy*, 13(3), 206-222.
- Luarn, P., & Lin, H.-H. (2005). Toward an Understanding of the Behavioural Intention to Use Mobile Banking. *Computers in Human Behaviour*, 21(6), 873-891.
- Luo, X., Li, H., Zhang, J., & Shinm, J. P. (2010). Multi-dimensional Trust and Multi-faceted Risk in Initial Acceptance of Emerging Technologies: An Empirical Study of Mobile Banking. *Decision Support System*, 49, 222-234.
- MacLean, S., & Gray, K. (1998). Structural Equation Modelling in Market Research. *Journal of the Australian Market Research Society*, 6, 17-32.
- MacMillan, I. C., & McGrath, R. (1997). Discovering New Points of Differentiation. *Harvard Business Review*, 75(4), 133-145.
- Malhotra, N. K. (1996). *Marketing Research: An Applied Orientation* (2nd ed.). Upper Saddle River, N.J: Prentice Hall.
- Mallat, N., Rossi, M., & Tuunainen, V. (2004). Mobile Banking Service. *Communication of the ACM*, 47(5), 42-46.
- Mathieu, J. E., & Taylor, S. R. (2006). Clarifying conditions and decision points for mediational type inferences in organizational behavior. *Journal of Organizational Behavior*, 27, 1031-1056.
- Mattila, M. (2004). Factors Affecting the Adoption of Mobile Banking Services. *Journal of Internet Banking & Commerce*, 8. Retrieved from <http://www.arraydev.com/commerce/JIBC/0306-04.htm>.
- McDonald, R.P., & Ho, M. H. (2002). Principles and practice in reporting statistical equation analyses. *Psychological Methods*, 7(1), 8-64.
- McNeill, P., & Townley, C. (1986). *Fundamentals of Sociology* (2nd ed.). London, UK: Stanley Thornes.
- Michael, A., & Salter, B. (2006). *Mobile Marketing: A Cheiving Competitive Advantage through Wireless Technology*. Oxford, UK: Elsevier Ltd.

- Miles, J., & Shevlin, M. (2007). A time and a place for incremental fit indices. *Personality and Individual Differences*, 42(5), 869-74.
- Milfont, T. L., & Fischer, R. (2010). Testing measurement invariance across groups: Applications in cross-cultural research. *International Journal of Psychological Research*, 3(1), 111-121.
- Mishkin, F. S. (2007). *The Economics of Money, Banking and Financial Markets* (8th ed.). London, UK: Addison Wesley.
- Mitchell, V. W. (1999). Consumer Perceived Risk: Conceptualizations and Models. *European Journal of Marketing*, 33(1/2), 163-195.
- Mobile Marketing Association (MMA) (2009). *Mobile Banking Overview*. Retrieved from <http://www.mmaglobal.com>
- Monnette, D. R., Sullivan, T. J., & Dejong, C. R. (2005). *Applied Social Research: A Tool for the Human Services* (6th ed.). USA: Thomson Book.
- Monroe, K. B. (1990). *In Pricing: Making Profitable Decision*. New York: McGraw Hill.
- Moon, J. W., & Kim, Y. G. (2001). Extending the TAM for a World-Wide-Web Context. *Information & Management*, 38(4), 217-230.
- Mousumi, F., & Jamil, S. (2010). Push Pull Services Offering SMS Based M-Banking System in Context of Bangladesh. *International Arab Journal of e-Technology*, 1(3), 79-88.
- Mulaik, S. A., James, L. R., Alstine, J. V., Bennet, N., Lind, S., & Stilwell, C.D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin*, 105(3), 430-45.
- Nau, D. S. (1995). Mixing Methodologies: Can Bimodal Research be a Viable Post-Positivist Tool?. *The Qualitative Report*, 2(3). Retrieved from <http://www.nova.edu/ssss/QR/QR2-3/nau.html>
- Nicholson, S. (2004). A Conceptual Framework for the Holistic Measurement and Cumulative Evaluation of Library Services. *Journal of Documentation*, 60, 164-182.
- The Ninth Development Plan (2010 - 2014). (2009). *Ministry of Economy and Planning*. Riyadh: Saudi Arabia. Retrieved from <http://www.mep.gov.sa>
- Nor, K. M., Sutanonpaiboon, J., & Mastor, N. H. (2010). Malay, Chinese, and internet banking. *Chinese Management Studies*, 4(2), 141-153.

- Nunnally, J. C. (1978). *Psychometric Theory*. New York: McGraw-Hill.
- Oliver, R. L. (2009). *Satisfaction: A Behavioural Perspective on the Consumer* (2nd ed.). London: M.E.Sharpe.
- Oshlyansky, L., Cairns, P., & Thimbleby, H. (2007). Validating the Unified Theory of Acceptance and Use of Technology (UTAUT) Tool Cross-Culturally [Electronic version]. Retrieved from http://www-users.cs.york.ac.uk/~pcairns/papers/Oshlyansky_HCI07.pdf
- Pagani, M. (2004). Determinants of Adoption of Third Generation Mobile Multimedia Services. *Journal of Interactive Marketing*, 18(3), 46-59.
- Rcig." E0." (" Nwfkpi." [0" *4225+0" Dcpm" Opcigtuo" Fktgev" Octmgvkpi" Fkng o o cu" ó Customeruø" Cvvkwfgu" cpf" Rwteljcu" Kpvgpvkqp0" *International Journal of Bank Marketing*, 21(3), 147-163.
- Palda, K. S. (1966). The Hypothesis of a Hierarchy of Effects: A Partial Evaluation. *Journal of Marketing Research*, 3, 13-24.
- Pavlou, P. A. (2003). Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*, 7(3), 101-134.
- Pedersen, P., & Ling, R. (2002). Mobile End-User Service Adoption Studies: A Selective Review. *Scandinavian Journal of Information Systems*. Retrieved from http://ikt.hia.no/perrep/pedersen_ling.pdf
- Petrick, J. F. (2004). The Roles of Quality, Value, and Satisfaction in Predicting Cruise Passengers' Behavioural Intentions. *Journal of Travel Research*, 42(4), 397-407.
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnla, S. (2004). Consumer Acceptance of Online Banking: An Extension of the Technology Acceptance Model. *Internet Research*, 14(3), 224-235.
- Poon, W.-C. (2008). Users' Adoption of E-banking Services: The Malaysian Perspective. *Journal of Business & Industrial Marketing*, 23(1), 59-69.
- Pousttchi, K., & Schurig, M. (2004). *Assessment of Today's Customer Requirements from the View of Customer Requirements*. Paper presented at the Hawaii International Conference on System Sciences, Big Island, Hawaii,.
- Pura, M. (2005). Linking Perceived Value and Loyalty in Location Based Mobile Services. *Managing Service Quality*, 15(6), 509-538.

- Puschel, J. I., Mazzon, J. A., & Hernandez, J. M. (2010). Mobile Banking: Proposition of An Integrated Adoption Intention Framework. *The International Journal of Bank Marketing*, 28(5), 389-409.
- Qingfei, M., Shaobo, J., & Gang, Q. (2008). Mobile Commerce User Acceptance Study in China : A Revised UTAUT Model. *Tsinghua Science and Technology*, 13(3), 257-264.
- Quaddus, M., & Hofmeyer, G. (2007). An Investigation into the Factors Influencing the Adoption of B2B Trading Exchanges in Small Businesses. *European Journal of Information Systems*, 16, 2026215.
- Raleting, T., & Nel, J. (2011). Determinants of Low-income Non-wugtuø"Cwkwvfg"vqyctfu" WIG Mobile Phone Banking: Evidence from South Africa. *African Journal of Business Management*, 5(1), 212-223.
- Ramady, M. A. (2009). Evolving Banking Regulation and Supervision: A Case Study of the Saudi Arabian Monetary Agency (SAMA). *International journal of Islamic and Middle Eastern Finance and Management*, 2(3), 235-250.
- Riivari, J. (2005). Mobile Banking: A powerful New Marketing and CRM Tool for Financial Services Companies All Over Europe. *Journal of Financial Services Marketing*, 10(1), 11-20.
- Riquelme , E. H., & Rios , E. R. (2010). The Moderating Effect of Gender in the Adoption of Mobile Banking. *The International Journal of Bank Marketing*, 28(5), 328-341.
- Roscoe, J. T. (1975). *Fundamental Research Statistics for the Behavioural Sciences*. New York: Holt, Rinehart & Winston.
- Rubin, N., Nakayama, K., & Shapley, R. (1996). Enhanced Perception of illusory Contours in the Lower Versus Upper Visual Hemifields. *Science*, 271, 6516653.
- Salkind, N. J. (2000). *Exploring Research*. Saddle River,NJ: Prentice Hall.
- Saudi Arabia Monetary Agency (SAMA) (2010). *E-banking Rules*. Riyadh: Saudi Arabia. Retrieved May 20, 2011, from http://www.sama.gov.sa/RulesRegulation/Rules/Pages/E_banking_Rules.pdf
- Saudi Arabia Monetary Agency (SAMA) (2013). *Quarterly Statistical Bulletin: 2nd Quarter 2013*. Riyadh: Saudi Arabia. Retrieved from <http://www.sama.gov.sa/ReportsStatistics/statistics/Pages/QuarterlyStatistics.aspx>
- Sandhusen, R. L. (2000). *Marketing* (3rd ed.). USA: Barron's Educational Series.

- Saracevic, T. (2004, Sep). *Evaluation of Digital Libraries: An overview*. Paper presented at the Workshop on the evaluation of Digital Libraries, New Brunswick, NJ USA.
- Sarantakos, S. (2005). *Social Research* (3rd ed.). Palgrave Macmillan, Hampshire: The Macmillan Press.
- Sathye, M. (1999). Adoption of Internet Banking by Australian Consumers: An Empirical Investigation. *International Journal of Bank Marketing*, 17(7), 324-334.
- Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students* (4th ed.). Essex, England: Prentice Hall.
- Schaupp, L. C., & Carter, L. (2005). E-voting: From Apathy to Adoption. *The Journal of Enterprise Information Management*, 18(5), 586-601.
- Schlevogt, K. A. (1998). *The Art of Chinese Management? An Empirical Study of the Nature, Causes and Outcomes of Organisational Structure and Management Practices in Companies from Selected Cities in Mainland China*. (Unpublished PhD's thesis). University of Oxford, Oxford.
- Schriesheim, C. A., Powers, K. J., Gardliner, C. C., & Lankau, M. J. (1993). Improving Construct Measurement in Management Research: Comments and a Quantitative Approach for Assessing the Theoretical Content Adequacy of Paper and Pencil Survey Type Instruments. *Journal of Management*, 19(2), 385-417.
- Schwab, D. P. (1980). Construct Validity in Organisational Behaviour. In L. L. Cummings & B. M. Staw, (Eds.), *Research in Organizational Behaviour* (Vol. 2, pp. 3-43). Greenwich, C.T: JAI Press.
- Sekaran, U., & Bougie, R. (2009). *Research Methods in Business: A Skill Building Approach* (5th ed.). UK: John Wiley & Sons Inc.
- Sharma, S., Mukherjee, S., Kumar, A., & Dillon, W.R. (2005). A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *Journal of Business Research*, 58(1), 935-43.
- Sheth, J. N., Newman, B. I., & Gross, B. L. (1991). Why We Buy What We Buy: A Theory of Consumption Values. *Journal of Business Research*, 22, 157-170.
- Shrivastava, M. P., Pandey, P. K., & Vidyarthi, V. P. (2007). *Banking Reforms and Globalisation*. New Delhi: APH.
- Singh, S., Chhatwal, S. S., Yahyabhoj, T. M., & Heng, Y. C. (2002, Jun). *Dynamics of Innovation in E-Banking*. Rcrgt"rtgugpvfg"cv"vjg"GEKU." I fc um."Rqncpf0

- Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Consumer Trust, Value, and Loyalty in Relational Exchanges. *Journal of Marketing*, 66, 15-37.
- Sorournejad, S., & Kharazian, M. (2007). *Adoption of Customers of M-banking Services : Iranian Perspective*. Paper presented at the International Student Conference, Izmir University of Economics, Izmir, Turkey.
- Spiteri, J., & Dion, P. (2004). Customer Value, Overall Satisfaction, End-user Loyalty, and Market Performance in Detail Intensive Industries. *Industrial Marketing Management*, 33, 675-687.
- Steiger, J.H. (1990). Structural model evaluation and modification. *Multivariate Behavioral Research*, 25, 214-12.
- Stone, E. (1978). *Research Methods in Organisational Behaviour*. London: Scott, Foresman and Company.
- Sulaiman, A., Jaffar, N. I., & Mohezar, S. (2007). An Overview of Mobile Banking Adoption Among the Urban Community. *International Journal of Mobile Communications*, 5(2), 157-168.
- Suoranta, M. (2003). *Adoption of Mobile Banking in Finland* (Doctoral dissertation, University of Jyväskylä, Finland). Retrieved from <https://jyx.jyu.fi/dspace/handle/123456789/13203>
- Suoranta, M., & Mattila, M. (2004). Mobile Banking and Consumer Behaviour: New Insights into the Diffusion Pattern. *Journal of Financial Services Marketing*, 8(4), 354-366.
- Sweeney, J. C. (2003). Customer Perceived Value. In J. R. McColl-Kennedy (Ed.), *Services Marketing: A Managerial Approach* (pp. 135-166). Brisbane, Australia: John Wiley & Sons.
- Sweeney, J. C., Soutar, G. N., & Johnson, L. W. (1999). The Role of Perceived Risk in the Quality-Value Relationship: A Study in a Retail Environment. *Journal of Retailing*, 75(1), 77-105.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). Boston: Allyn and Bacon.
- Tan, M., & Teo, T. (2000). Factors Influencing the Adoption of Internet Banking. *Journal of the Association for Information Systems*, 1(5). Retrieved from <http://m.tech.uh.edu/faculty/conklin/IS7033Web/7033/Week14/Internetbanking.pdf>
- Taylor, S., & Todd, P. (1995a). Assessing IT Usage: The Role of Prior Experience. *MIS Quarterly*, 19(2), 561-570.

- Taylor, S., & Todd, P. (1995b). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*, 6(2), 144-176.
- Teo, T. S., & Pok, S. H. (2003). Adoption of WAP-enabled Mobile Phones Among Internet users. *The International Journal of Management Science*, 31(6), 483-498.
- Thaler, R. H. (1985). Mental Accounting and Consumer Choice. *Marketing Science*, 4, 199-214.
- Thaler, R. H. (1999). Mental Accounting Matters. *Journal of Behavioural Decision Making*, 12, 183-206.
- Tibenderana, P., Ogao, P., Ikoja-Odongo, J., & Wokadala, J. (2010). Measuring Levels of End-User Acceptance of Mobile Learning. *International Journal of Education and Development using Information and Communication Technology*, 6(2), 33-54.
- Tiwari, R., & Buse, S. (2007). *The Mobile Commerce Prospects: A Strategic Opportunities in the Banking Sector*. Hamburg: Hamburg University Press.
- Toften, K., & Olsen, S. (2004). The Relationship among Quality, Cost, Value and Use of Export Market Information: An Empirical Study. *Journal of International Marketing*, 12(2), 104-132.
- Tremblay, P. F., & Gardner, R. C. (1996). On the Growth of Structural Equation Modeling in Psychology Journals. *Structural Equation Modeling*, 3, 93-104.
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38(1). Retrieved from <http://link.springer.com/article/10.1007%2FBF02291170>
- Tull, D. S., & Hawkins, D. I. (1987). *Marketing Research: Measurement and Method* (3rd ed.). New York: Macmillan.
- Upshaw, L. B. (1995). *Building Brand Identity: A strategy for Success in a Hostile Marketplace*. New York: John Wiley & Sons.
- Vaughn, R. (1980). How Advertising Works: A Planning Model. *Journal of Advertising Research*, 20, 27-33.
- Vaughn, R. (1986). How Advertising Works: A Planning Model revisited. *Journal of Advertising Research*, 26, 57-66.
- Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 45(2), 186-204.

- Venkatesh, V., & Morris, M. G. (2000). Why Don't Men Ever Stop to Ask for Directions? Gender, Social Influence, and their Role in Technology Acceptance and Usage Behaviour. *MIS Quarterly*, 24(1), 115-139.
- Venkatesh, V., Morris, M. G., & Ackerman, P. L. (2000). A Longitudinal Field Investigation of Gender Differences in Individual Technology Adoption Decision-Making Processes. *Organizational Behaviour and Human Decision Processes*, 83(1), 336-60.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425-478.
- Vijayasathya, L. R. (2002). Internet Taxation, Privacy and Security: Opinions of the Taxed and Legislated. *Quarterly Journal of Electronic Commerce*, 3(1), 53-71.
- Wang, Y. S., Lin, H. H., & Luarn, P. (2006). Predicting Consumer Intention to Use Mobile Service. *Information Systems Journal*, 16(2), 157-179.
- Wang, Y. S., Wang, Y., M, Lin, H. H., & Tang, T. I. (2003). Determinants of User Acceptance of Internet Banking: An Empirical Study. *International Journal of Service Industry Management*, 14(5), 501-519.
- Wessels, L., & Drennan, J. (2010). An Investigation of Consumer Acceptance of M-banking. *The International Journal of Bank Marketing*, 28(7), 547-568.
- Wessels, W. J. (2000). *Economics* (3rd ed.). New York: Barron's Educational Series.
- Wheaton, B., Muthen, B., Alwin, D., & Summers, G. (1977). Assessing reliability and stability in panel models. *Sociological Methodology*, 8(1), 84-136.
- Whitney, L. (2009, June 16). Online Banking is Booming. Retrieved from http://news.cnet.com/8301-1001_3-10265409-92.html
- Winley, G. (2011). Factors Associated with the Use of Personal Internet Banking in Thailand. *Journal of Electronic Commerce in Organizations*, 9(2), 15-40.
- Wood, C. M., & Scheer, L. K. (1996). Incorporating Perceived Risk Into Models of Consumer Deal Assessment and Purchase Intent. *Advances in Consumer Research*, 23(1), 309-404.
- Wu, J. H., & Wang, S. C. (2005). What Drives Mobile Commerce?: An Empirical Evaluation of the Revised Technology Acceptance Model. *Information & Management*, 42, 719-729.
- Yang, A. S. (2009). Exploring Adoption Difficulties in Mobile Banking Services. *Canadian Journal of Administrative Sciences*, 26, 136-149.

- Yeow, P., Yuen, Y., & Tong, D. (2008). User Acceptance of Online Banking Service in Australia. *Communications of the IBIMA*, 1, 191-197.
- Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52(July), 2-22.
- Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to Explain Mobile Banking User Adoption. *Computers in Human Behaviour*, 26(4), 760-767.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business Research Methods* (8th ed.). Thousand Oaks, CA: Thomson/South-Western.