

**THE ANTECEDENTS OF INTERNET BANKING SERVICE ADOPTION IN JORDAN:
USING DECOMPOSED THEORY OF PLANNED BEHAVIOUR**

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**BY
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ABSTRACT

Although Internet banking services have been widely adopted in developed countries, there is still low usage in developing countries such as Jordan. There is a limited empirical research on Internet banking services in this country despite being a necessity to adopt research on Internet banking service. Among the aims of this quantitative research are to empirically determine the significant antecedents of Internet Banking Service Adoption (IBSA), antecedents of attitude, antecedents of subjective norm and antecedents of perceived behaviour control as well as to explain how the Decomposed Theory of Planned Behaviour (DTPB) is being used in determining the antecedent of IBSA in Jordan. The research framework consists of sixteen (16) latent variables, twelve (12) exogenous variables and four (4) endogenous variables. Using an adopted survey instrument, seventy-eight items (7-point-likert scale) is used and one variable is adapted in the process of collecting the pertaining data. Out of the 700 samples in four universities located in three areas (South, Middle and North), 517 respondents (76% response rate) were eventually used to further analyze the data using mainly Structural Equation Modelling (SEM) to investigate causal and mediating relationships between latent variables. The findings of the research reveal that attitude, subjective norm and perceived behaviour control are significant and positive antecedents of the IBSA. It also indicates that perceived usefulness, trialability, trust and awareness are significant as well as positive antecedents in terms of attitude of customers toward IBSA, while perceived risk is significant and a negative antecedent of attitude toward IBSA. It is found that, however, perceived ease of use and compatibility are insignificant antecedents of attitude toward IBSA. The results of the findings indicate that subjective norm has two significant antecedents - family influence and mass media influence. It also shows that self-efficacy and government support seem to be significant and positive antecedents of perceived behaviour control whereas technology support is insignificant. It can be concluded that DTPB is found to be a good and suitable underpinning theory to explain IBSA antecedents in Jordan by achievement of model goodness of fit for the GOF index. The research study also discusses past empirical findings and its practical applications and implications for Jordanian contexts.

Keywords: Internet Banking Service Adoption (IBSA), Decomposed Theory of Planned Behaviour (DTPB), Jordan and Structural Equation Modelling (SEM)

ABSTRAK

Walaupun perkhidmatan perbankan Internet sudah digunakan di kebanyakan negara-negara maju, penggunaannya masih sedikit di negara seperti Jordan. Terdapat amat sedikit penyelidikan empirikal di negara-negara ini sungguhpun ianya satu keperluan utama dalam menjalankan penyelidikan terhadap perkhidmatan perbankan Internet (IBSA). Di antara tujuan penyelidikan kuantitatif adalah untuk mengenalpasti antecedent Pengambilan Perkhidmatan Perbankan Internet (IBSA), antecedent tingkahlaku, antecedent norma subjektif and antecedent persepsi kawalan tingkahlaku dan menerangkan bagaimana Teori Decomposed Perancangan Tingkahlaku Reput (Decomposed Theory of Planned Behaviour DTPB) digunakan dalam mengenal pasti antecedent IBSA di Jordan. Kerangka penyelidikan mengandungi enam belas pembolehubah tersembunyi (latent), dua belas pembolehubah luar (exogenous) dan empat (4) angkubah dalaman (endogenous). Dengan menggunakan instrument tinjauan, tujuh puluh lapan (skala likert tujuh mata) digunakan dan satu pembolehubah yang diadaptasikan dalam proses kutipan data yang relevan. Dari 700 sampel dari empat buah university yang terletak di tiga kawasan (Selatan, Pertengahan dan Utara), 517 responden sahaja yang digunakan untuk menganalisa secara khususnya Structural Equation Modelling (SEM) dalam menyiasat sebab dan hubungan perantara di antara pembolehubah tersembunyi. Hasil dapatan kajian mendapati tingkahlaku, norma subjektif and kawalan tingkahlaku persepsi adalah penting dan antecedent positif terhadap IBSA. Kajian juga menunjukkan kegunaan persepsi, percubaan (trialability), kepercayaan dan kesedaran adalah antecedent positif dari sudut tingkahlaku pelanggan terhadap IBSA, sementara risiko persepsi adalah positif dan antecedent negatif berkaitan dengan tingkahlaku terhadap IBSA. Namun, didapati juga bahawa persepsi kesenangan kegunaan dan kesesuaian adalah antecedent yang tidak signifikan dari segi tingkahlaku terhadap tingkahlaku terhadap IBSA. Keputusan kajian menunjukkan bahawa norma subjektif mengandungi dua antecedent – pengaruh keluarga dan pengaruh media masa. Ianya juga menunjukkan bahawa kebolehan sendiri dan sokongan kerajaan adalah signifikan dan antecedent positif persepsi kawalan tingkahlaku manakala sokongan teknologi adalah tidak signifikan. Dapat dirumuskan bahawa DTPB didapati baik dan teori yang sesuai untuk menerangkan antecedent IBSA di Jordan melalui pencapaian kebaikan padanan model iaitu indeks GOF. Kajian ini juga membincangkan dapatan-dapatan dari kajian empirikal lepas serta aplikasi praktikal dan implikasi dalam konteks Jordan.

Kata kunci: Internet Banking Service Adoption (IBSA), Decomposed Theory of Planned Behaviour (DTPB), Jordan dan Structural Equation Modelling (SEM)

PUBLICATIONS FROM THIS RESEARCH

The following papers have been produced from the research reported in this thesis:

1. **AL-Majali, M. & NIK Mat, K.** (2010). Applications of planned behaviour theory (TPB) on internet banking services adoption (IBSA) in Jordan: Structural Equation Modeling (SEM) Approach. *China-USA Business Review and Chinese Business Review*. 9(12)
2. **AL-Majali, M. & NIK Mat, K.** (2010). Application of decomposed theory of planned behaviour on internet banking adoption in Jordan. *Journal of Internet Banking and Commerce*. 15 (2)1-7
3. **AL-Majali, M. & NIK Mat, K.** (2010). Success factors for the internet banking services adoption (IBSA) in Jordan: Structural Equation Modeling (SEM) Approach. International Conference of Organizational Innovation (ICOI). Siam University, Thailand. August 4-6, 2010.
4. **AL-Majali, M. & NIK Mat, K.** (2010). Application of planned behaviour theory (TPB) on internet banking services adoption (IBSA) in Jordan: Structural Equation Modeling (SEM) Approach. The 2010 International Conference on Innovation and Management (IAM). G Hotel Penang, Malaysia, July 7-10, 2010.
5. **AL-Majali, M. & NIK Mat, K.** (2010). Diffusion of internet banking service in Jordan: Decomposed Theory of Planned Behaviour (DTPB). RICTD 2010 – The 3rd National Conference on Rural ICT Development EDC UUM Sintok, Kedah, MALAYSIA, 23-25 November 2010.
6. **AL-Majali, M., NIK Mat, K. & AL-Muala** (2010). The diffusion of internet banking services among Jordanian consumers. The 2011 International Conference on Asia Pacific Business Innovation & Technology Management (APBITM). January 23-25, 2011, Bali, Indonesia.

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LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness-of-Fit Index
AMOS	Analysis of Moment Structures
ABJ	Association Banks of Jordan
ATT	Attitude
AVE	Average Variance Extracted
Awar	Awareness
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
Comp	Compatibility
CR	Critical Ratio
Cr	Composite reliability
DDS	Data Descriptive Statistics
DOI	Diffusion of Innovation
DOS	Department of Statistics
DTPB	Decomposed Theory of Planned Behaviour
EFA	Exploratory Factor Analysis
FM	Family Influence
GFI	Goodness-of-Fit Index
GOF	Goodness of Fit
GS	Government Support
IBS	Internet Banking Service
IBSA	Internet Banking Service Adoption
IBSAI	Internet Banking Service Adoption Intention
ICT	Information Communication Technology
IFI	Incremental Fit Index
IREX	International Research & Exchanges Board
IS	Information System
IT	Information Technology
ITU	International Telecommunication Union
MHE	Ministry of Higher Education & Scientific Research in Jordan
MIBSA	Internet Banking Service Adoption (MIBSA)
MM	Mass Media Influence
MPD	Ministry of Political Development
ML	Maximum Likelihood
NFI	Normed Fit Index
NP	Number of employee in each region
NS	Number of sample to be distributed
PBC	Perceived Behaviour Control
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
RM	Revised Model
RMSEA	Root Mean Square Error of Approximation
Rsk	Risk
Self	Self-Efficacy
SEM	Structural Equation Modeling
SMC	Squared Multiple Correlation
SN	Subjective Norm
SPSS	Statistical Package for Social Science
SRMR	Standardized Root Mean Residual
SSC	Social Security Corporation
T	Total of the employees in all universities
TAM	Technology Acceptance Model
TLI	Tucker-Lewis Index
TPB	Theory of Planned Behaviour
Tril	Trialability

TRA	Theory of Reasoned Action
Trus	Trust
TS	Technology support
UK	United Kingdom
USA	United States of America
VE	Variance Extracted
WOT	World Trade Organization
WLS	Weighted Least Squares
WWW	World Wide Web
X ²	Chi-square
x ² /df	Chi-square per degree of freedom ratio

CHAPTER ONE

INTRODUCTION

1.0 PREFACE

This chapter presents the research issues, background of the study, the problem statement, formulates the research questions, objectives and justifications. This chapter also gives a brief explanation of the study's significance for academics, customers, banks and organizations, the scope of study and definition of key terms. Finally, it concludes with a presentation of the research organization of this thesis.

1.1 INTRODUCTION

The world has witnessed many changes these days with the evolution of Information Technology (IT); this explosion of IT affects all industrial sectors, especially the service sectors. In recent years, the banking industry has undergone rapid technological changes and developments. IT has introduced new business standards and is increasingly playing a significant role in changing the face of the banking industry. Some of that technology, such as the internet, wireless technology and global straight-through processing, have created a paradigm shift in the banking industry from traditional banks to virtual banking, allowing the industry to face global competition from banks around the world and to gain larger market shares in order to satisfy the needs of customers (Sharma, 2009).

The changes in the banking industry, new entrants and actors on the conventional banking environment, and globalization of the line of business and service innovations,

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