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**THE MEDIATING EFFECT OF ATTITUDE ON DIRECT AND INDIRECT  
DETERMINANTS OF INTERNET BANKING USAGE IN MALAYSIA**

**By**

**AHMAD KAMAL SINDIN**



**UUM**  
Universiti Utara Malaysia

**Thesis Submitted to  
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In Partial Fulfillment of the Requirement for the Doctor of Business Administration**



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## ABSTRACT

Internet banking in Malaysia has been in existence for more than two decades. However, there is still lack of studies in discovering the aspects of attitude and behavior of the retail banking customers towards the adoption of the internet banking services. Therefore, this study aims to investigate the determinants of the internet banking usage from the angle of attitude and behavior of these customers in the internet banking usage. This study employed the Technology Acceptance Model by Davis as the underpinning theory and further enhanced it to the Extended Technology Acceptance Model by taking into account factors such as trust, internet self-efficacy, and subjective norm as the additional predictors of internet banking usage via the mediating effect of attitude towards usage. The study setting was based on five top commercial banking in Malaysia and systematic random sampling of data collection was done through households via self-administered questionnaire and analysis was done by using the structural equation modelling as the statistical tool. The findings show that perceived ease of use and attitude have a positive significant effect on internet banking usage while perceived usefulness and internet self-efficacy have a positive impact on attitude. The findings further reveal that perceived usefulness and internet self-efficacy mediate through attitude on the internet banking usage while trust, perceived ease of use, and subjective norm do not mediate through attitude on the internet banking usage. These results are immeasurably valuable to practitioners for managing and executing their marketing strategy. Furthermore, it contributes and enriches knowledge pertaining to the predictors of internet banking usage.

**Keywords:** Internet banking usage, trust, internet self-efficacy, subjective norm, Malaysian retail banking.

## ABSTRAK

Perbankan internet di Malaysia telah wujud lebih dua dekad yang lalu. Walau bagaimanapun, masih terdapat kekurangan rangkuman kajian dalam mencari aspek-aspek sikap dan tingkah laku pelanggan perbankan runcit ke arah penggunaan perkhidmatan perbankan internet. Oleh itu, kajian ini menyiasat faktor-faktor penentu penggunaan perbankan internet dari sudut sikap dan tingkah laku pelanggan dalam penggunaan perbankan internet. Kajian ini menggunakan teori *Technology Acceptance Model* oleh Davis sebagai teori asas dan dipertingkatkan kepada *Extended Technology Acceptance Model* dengan mengambil kira faktor kepercayaan, efikasi-kendiri internet dan norma subjektif sebagai peramal tambahan bagi penggunaan perbankan internet melalui kesan pengantara sikap terhadap penggunaan. Kajian ini dijalankan terhadap lima buah bank perdagangan utama di Malaysia dan menggunakan persampelan rawak sistematik bagi pengumpulan data yang dilakukan ke atas isi rumah melalui borang soal selidik tadbir kendiri dan dianalisis dengan menggunakan *structural equation modelling* sebagai alat statistik. Hasil kajian menunjukkan bahawa kemudahan penggunaan dan sikap mempunyai kesan yang positif terhadap penggunaan perbankan internet, manakala kebergunaan dan efikasi-kendiri internet memberikan kesan positif ke atas sikap. Hasil kajian juga mendedahkan bahawa kebergunaan dan efikasi-kendiri internet dapati mempunyai hubungan dengan sikap terhadap penggunaan perbankan internet, manakala kepercayaan, kemudahan penggunaan, dan norma subjektif tidak mempunyai hubungan dengan sikap terhadap penggunaan perbankan internet. Dapatan kajian ini adalah sangat berharga kepada pengamal untuk mengurus dan melaksanakan strategi pemasaran mereka. Tambahan pula, dapatan ini juga dapat menyumbang dan memperkayakan pengetahuan yang berkaitan dengan ramalan penggunaan perbankan internet.

**Kata kunci:** Penggunaan perbankan internet, kepercayaan, internet efikasi-kendiri, norma subjektif, perbankan runcit Malaysia.

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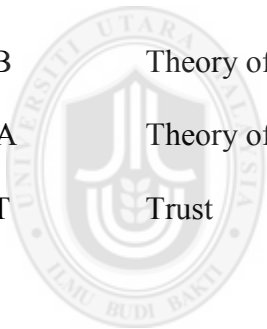
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## LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness of Fit Index
AMOS	Analysis of Moment Structures
ATU	Attitude
AVE	Average Variance Extracted
AVR	Automated Voice Response
BIS	Banking Information System
BNM	Bank Negara Malaysia
CDFNorm	Cumulative Distributions Function
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
DOI	Diffusion of Innovation Theory
DTPB	Decomposed Theory of Planned Behaviour
ECT	Expectation Confirmation Theory
ETAM	Extended TAM
GFI	Goodness of Fix Index
IBU	Internet Banking Usage
ICT	Information communication technology
ISE	Internet Self-Efficacy
MCMC	Malaysian Communications and Multimedia Commission
MI	Modification Indices
MOF	Ministry of Finance
NFI	Normed Fit Index
PEMANDU	Performance Management & Delivery Unit (Malaysia)
PEU	Perceived Ease of Use

PU	Perceived Usefulness
PwC	PricewaterhouseCooper's
RMSEA	Root Mean Square Error of Approximation
SD	Standard Deviation
SEM	Structural Equation Modelling
SN	Subjective Norm
SPSS	Statistical Package for Social Science
TAM	Technology Acceptance Model
TAM 2	Technology Acceptance Model 2
TAM 3	Technology Acceptance Model 3
TLI	Tucker Lewis Index
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TST	Trust



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# CHAPTER 1

## INTRODUCTION

### 1.0 Chapter Overview

The first chapter of this research introduces the issue of internet banking in Malaysia from brick and mortar banking to an online banking. Further, it discusses the research background of the study, problem statement, research questions, research objectives, significance and contribution of the study, scope of the study, definitions of terminologies and lastly organization of the thesis.

### 1.1 Background of the Study

The internet and information communication technology (ICT) has changed landscape of all industries including medical, agricultural, tourism, businesses and banking in Malaysia likewise, all around the world. Internet and ICT have transformed banking industry from a “manual system” of banking operations to full computerisation in all aspects of its operations. The computerisation affects opening and maintenance of an array of services, ranging from savings account, current account, remittances and transfer of funds, fixed deposit, investment account, trade finance and loan processing. This improvement has to certain extent, made the transactions cheaper, easier, efficient, and effective.

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