

**AN EMPIRICAL INVESTIGATION OF SMARTPHONE  
TECHNOLOGY ACCEPTANCE AMONG UNIVERSITI  
UTARA MALAYSIA STUDENTS**

**SASITHARAN A/L DAYANAN**

**MASTERS OF SCIENCE  
UNIVERSITI UTARA MALAYSIA  
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**By**

**SASITHARAN A/L DAYANAN**

**Thesis Submitted to  
Othman Yeop Abdullah Graduate School of Business,  
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## ABSTRACT

This study investigated smartphone technology acceptance among Universiti Utara Malaysian (UUM) students by using the Technology Acceptance Model (TAM). The rapid diffusion of computer technology into smartphone increases smartphone penetration among Universiti Utara Malaysia students. The aim of this study was to determine the relationship of Perceived Ease of Use (PEU) and Perceived Usefulness (PU) as independent variables, and Attitude (ATT) and Behavioural intention (BI) as dependent variables on Smartphone Technology Acceptance among Universiti Utara Malaysia students. In addition, in this research Gender was used as a moderator to test the relationship between Attitude (ATT) and Behavioural intention (BI). In order to collect data a total of 500 questionnaires were distributed to (UUM) final year and postgraduate students in three colleges COB, CAS and COLGIS. The hypothesis results showed that there was a significant relationship among the four variables except Gender. This was because Gender failed to moderate in explaining the relationship between Attitude (ATT) and Behavioural intention (BI). On the other hand the statistical result showed that there was partial mediation effect of Perceived Usefulness (PU) on the relationship between Perceived Ease (PEU) of Use and Attitude (ATT) on Smartphone Technology Acceptance among Universiti Utara Malaysian students. Furthermore the researcher found that there was a significant relationship between both the dependent variables - Attitude (ATT) and Behavioural intention (BI) on smartphone technology acceptance among UUM students. The overall finding showed that technology advancement and breakthrough design of smartphone technology are the key factors that attract Universiti Utara Malaysia students to accept smartphone technology. On the other hand, usefulness and ease of use of the smartphone technology play important roles in influencing (UUM) students to have the intention to use smartphone technology in accomplishing their personal tasks. This is because the usefulness of smartphone technology with promising results makes (UUM) students rely heavily on this device.

**Keywords:** Smartphone technology, Technology Acceptance Model, Malaysia.

## ABSTRAK

Kajian ini menyiasat aspek penerimaan teknologi telefon pintar di kalangan pelajar Universiti Utara Malaysia (UUM) dengan menggunakan Teori Model Penerimaan Teknologi (TAM). Perkembangan fungsi teknologi telefon pintar yang setanding dengan teknologi komputer mewujudkan permintaan tinggi terhadap telefon pintar di kalangan pelajar UUM. Kajian ini bertujuan untuk menentukan hubungan antara Kesedaran Kemudahan (PEU) dan Kesedaran Kebergunaan (PU) yang berfungsi sebagai pemboleh ubah bebas, serta Sikap (ATT) dan Niat Tingkah Laku (BI) sebagai pemboleh ubah bersandar terhadap penerimaan teknologi telefon pintar di kalangan pelajar Universiti Utara Malaysia. Di samping itu, jantina (Gender) digunakan sebagai moderator untuk menentukan hubungan antara Sikap (ATT) dan Niat Tingkah Laku (BI). Untuk mengumpul data, sejumlah 500 borang soalselidik telah diedarkan kepada mahasiswa sarjana muda tahun akhir dan pascasarjana merangkumi tiga buah kolej utama di UUM iaitu COB, CAS dan COLGIS. Hasil analisis hipotesis menunjukkan terdapat hubungan signifikan antara empat pemboleh ubah yang dinyatakan kecuali jantina. Ini disebabkan hasil analisis menunjukkan bahawa jantina (Gender) gagal menerangkan hubungan antara Sikap (ATT) dan Niat Tingkah Laku (BI). Selain itu, terdapat kesan pengantaraan separa aspek Kesedaran Kebergunaan (PU) antara Kesedaran Kemudahan (PEU) dan Sikap (ATT) terhadap penerimaan teknologi telefon pintar di kalangan pelajar UUM. Secara keseluruhannya, hasil kajian menunjukkan bahawa kemajuan teknologi dan reka bentuk telefon pintar merupakan faktor utama yang mempengaruhi penerimaan teknologi telefon pintar di kalangan pelajar Universiti Utara Malaysia (UUM). Selain itu, Kesedaran Kebergunaan (PU) dan Kesedaran Kemudahan (PEU) juga memainkan peranan penting bagi mereka untuk bergantung sepenuhnya pada peranti ini.

**Kata kunci:** Teknologi telefon pintar, Teori Model Penerimaan Teknologi, Malaysia.

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## **LIST OF ABBREVIATION**

<b>ATT</b>	Attitude
<b>BI</b>	Behavioural Intention
<b>CAS</b>	College of Arts and Sciences
<b>CA</b>	Cronbach's Alpha
<b>COB</b>	College of Business
<b>COLGIS</b>	College of Law, Government and International Studies
<b>DV</b>	Dependant Variable
<b>FA</b>	Factor Analysis
<b>ICT</b>	Information and Communication Technology
<b>IT</b>	Information Technology
<b>IV</b>	Independent Variable
<b>MBL</b>	Mobile Based Learning
<b>MCMC</b>	Communication and Multimedia Commission
<b>MIS</b>	Management Information System
<b>MBWA</b>	Mobile Broadband Wireless Access
<b>PBC</b>	Perceived Behavioral Control
<b>PC</b>	Personal Computer
<b>PCA</b>	Principal Component Analysis
<b>PDA</b>	Personal Digital Assistant

<b>PEOU</b>	Perceived Ease of Use
<b>PU</b>	Perceived Usefulness
<b>RA</b>	Relative Advantage
<b>RO</b>	Research Objective
<b>RQ</b>	Research Question
<b>SD</b>	Standard Deviation
<b>SE</b>	Self Efficacy
<b>SN</b>	Subjective Norm
<b>SPSS</b>	Statistical Package for Social Science
<b>TAM</b>	Technology Acceptance Model
<b>TAM2</b>	Extension Technology Acceptance Model
<b>TPB</b>	Theory of Planned Behavior
<b>TRA</b>	Theory of Reasoned Action
<b>UTAUT</b>	Unified Theory of Acceptance and Use of Technology
<b>UUM</b>	Universiti Utara Malaysia
<b>UMTS</b>	Universal Mobile Telecommunications System
<b>W-Lan</b>	Wireless Local Area Network

# CHAPTER ONE

## INTRODUCTION

### 1.0 Background of Study

Since Apple launched its first iPhone in 2007, it raised smartphone ownership among general consumer professionals and students. This also accounted for the increase in demand for smartphones (Jongepier, 2011). Mobile revolution was converting both developed and developing countries from using ordinary mobile phone to smartphone (Wong, 2012). Mak, Nickerson & Isaac (2009) postulated that user's education level is one of the factors that influenced the acceptance and attitude towards mobile phone usage. According to Balakrishnan & Yeow (2007) young people show higher satisfaction level regarding smartphone functions than older people. Kuss & Griffiths, (2011) stated that the dramatic spread of smartphone make young people turn out to be addictive towards social networking sites (SNS) that creates negative psychological outcomes such as relationship problems, poorer academic performance and decreased real-life community involvement. One of such groups of people who highly depend on smartphone technology is student and this dependency has increased the continuous use and patronage of smartphones which also influences future purchase (Ting, Lim, Patanmacia, Low & Ker, 2011). Jacob & Isaac (2008) stated that the increasing number of smartphone sales in recent years was due to the highest contributors from university students. Thus the Technology Acceptance Model (TAM) used in this study to identify factors influencing the acceptance of smartphones technology among Universiti Utara Malaysia students.



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