FACTORS INFLUENCING THE INTENTION TO USE MOBILE SHOPPING ON SMARTPHONES AMONG MALAY AND NON-MALAYSIAN CHINESE STUDENTS IN IIUM

BY

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ABSTRACT

Despite the significant literature on mobile shopping in international settings, much more needs to be explored and investigated in the case of Malaysia. This study investigated the factors influencing the intention to use mobile shopping on smartphones among Malay and Chinese students in IIUM. It adopted a quantitative approach by conducting surveys among consumers in IIUM based on the extended Technology Acceptance Model (TAM). This research shows that perceived usefulness, perceived ease of use, perceived privacy, perceived trust, and perceived enjoyment are key determinants influencing consumers' attitude towards an intention to use mobile shopping. The questionnaire data are collected from 350 students in IIUM. Partial Least Squares (PLS) is employed to test the research model and hypotheses. The findings reveal that perceived usefulness, perceived ease of use, perceived trust, and perceived enjoyment have a direct and significant positive influence on attitude, while perceived privacy has an insignificant impact on attitude. Also, all independent variables used in this study have an indirect positive impact on the intention mediated by attitude, and only perceived privacy does not have a positive impact on intention mediated by attitude. Therefore, the findings indicate that perceived usefulness, perceived ease of use, perceived trust, perceived enjoyment and consumer's attitude are factors affecting the intention to use mobile shopping on smartphones among Malay and Chinese students in IIUM.

خلاصة البحث

على الرغم من توفر الكثير من الدراسات والبحوث العلمية الخاصة بالتسوق عبر الأجهزة المحمولة في العالم، إلا أنه لا يزال هناك العديد من الأشياء المتعلقة بموضوع التسوق التي يمكن استكشافها في ماليزيا. تهدف هذه الدراسة إلى استكشاف أهم العوامل التي تؤثّر على رغبة الطلبة الماليزيين والصينيين من الجامعة الإسلامية العالمية بماليزيا في استخدام الهواتف الذكية من أجل التسوق. كما تعتمد الدراسة على منهج كمي يستهدف من خلاله استقصاء مستهلكي الجامعة الاسلامية العالمية IIUM استنادًا على نموذج قبول التكنولوجيا الموسعة (TAM). توضح هذه الدراسة أن الفائدة المتوقعة، وسهولة الاستخدام المرجوة، والخصوصية المفترضة، والثقة المنتظرة، والاستخدام الممتع المتوقع تعد عوامل جوهرية تؤثر على موقف المستهلكين للتسوق عبر الأجهزة المحمولة. تم جمع بيانات الاستبيان من 315 طالبًا في الجامعة الإسلامية العالمية بماليزيا. كما تم اختبار نماذج الدراسة والفرضيات باستخدام المربعات الصغرى الجزئية (PLS). ومن النتائج المحصل عليها من هذه الدراسة هي أن الفائدة المتوقعة، وسهولة الاستخدام المرجوة، والثقة المنتظرة والاستخدام الممتع المتوقع لها تأثير إيجابي مباشر على موقف المستهلكين، في حين أن الخصوصية المفترضة ليس لها تأثير كبير على موقف المستهلكين. بالإضافة إلى ذلك، جميع المتغيرات المستقلة المستخدمة في هذه الدراسة لها تأثير إيجابي غير مباشر على الرغبة التي يفضلها المستهلكون، بل أن الخصوصية المفترضة ليس لها أي تأثير إيجابي عليها. لذلك، تشير نتائج الدراسة إلى أن الفائدة المتوقعة، وسهولة الاستخدام المرجوة، والثقة المنتظرة، والاستخدام المرجو، بالإضافة إلى موقف المستهلك، كلها عوامل تؤثر على رغبة الطلاب الماليزيين والصينيين في استخدام الهواتف الذكية في الجامعة الإسلامية العالمية بماليزيا IIUM.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Science (Marketing).

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

This chapter presents the background of the study and describes the current phenomena in mobile commerce usage as a means to increase business transactions, as well as improve the telecommunication industry. It also explains the current position of mobile shopping penetration in the region. This is followed by the statement of the problem, research objectives, research questions, and the significance and scope of the study. Lastly, the conceptual definitions of the key terms are given to provide clear guidelines for understanding the research topic.

1.2 RESEARCH BACKGROUND

Mobile commerce (m-commerce) is any activity involving the execution of currency transactions directly or indirectly through a wireless telecommunications network (Yang et al., 2015). With the development of wireless communication technologies, mobile commerce or m-commerce is regarded as a business model adopted by emerging markets. M-commerce is an extension of e-commerce, whereby the transactions of businesses are conducted in an Internet environment using mobile devices. M-commerce involves electronic transactions between buyers and sellers using mobile communication devices such as mobile phones, personal digital assistants, or laptop computers (Sari & Bayram, 2015). It is a new stage of e-commerce, with many unique

advantages and much potential such as time efficiency, universal use, and more personalisation (Zhang et al., 2012).

In the increasingly powerful environment of mobile technology, the maturity of mobile network technology and the Internet of things, as well as the widespread use of mobile devices, such as smartphones, laptops and tablets, provide mobile commerce with strong market potential and justifies its position as a new business model (Hampshire, 2016). Compared with e-commerce, m-commerce refers to transactions through the wireless connection of mobile devices and offers greater ubiquity and accessibility to the users (Mahapatra, 2016). Given that mobile commerce is accessed via the user's mobile devices, it has higher accessibility and personality than e-commerce (Marinkovic et al., 2017).

Moreover, mobile shopping is the future of shopping, and its primary gateway is mobile devices. Simply put, m-shopping equals m-commerce and is increasingly becoming the leading channel for shopping and changing consumer shopping habits. The opportunities presented by mobile shopping are reflected in the growth of mobile phones. The number of mobile phone users globally will surpass five billion in 2019, according to a study released by the Global System Mobile Association (GSMA). Mats Granryd, GSMA Director General stated that "Mobile is a global platform that today supports two-thirds of the world's population, delivering the connectivity and infrastructure that is powering new digital economies and addressing social-economic challenges".

Technological advancements offer opportunities for consumers to exercise their choice of shopping channel. As a shopping channel, m-shopping is one of the fastest-growing businesses today. It represents approximately 35 percent of all retail e-commerce transactions globally (Criteo, 2016). Consumers can execute transactions on

a smartphone instantaneously, anytime and anywhere as it is personal and handy (Hsieh, 2014). The new channel of purchase on smartphones refers to retail m-commerce. Lai et al. (2013) note that mobile shopping "empowers shoppers with the ability to gather information on the spot from multiple sources, check on product availability, special offers and alter their selection at any point along the path to purchase".

1.2.1 M-shopping in Malaysia

In Malaysia, although the development of m-commerce is still in its infancy, it has seen speedy growth in mobile Internet penetration. The Department of Statistic Malaysia in 2017 showed that 69.7 percent of the total population (32.0 million) were aged 15-64 years of whom 97.7 percent are using mobile phones. In December 2017, the number shot up to 3.5 million mobile online transactions. According to current trends to reflect these statistics, the consumer is looking for greater convenience than traditional shopping. Further, advanced information technology is a positive stimulus of purchase decisions which presents a huge opportunity to capitalise on technology as a business medium in this digital era (Wei et al., 2008).

According to the World Bank, Malaysia's 140 percent mobile penetration rate is leading Indonesia, Thailand and even the United States. Only Singapore and Vietnam in Southeast Asia has higher mobile penetration than Malaysia (Wong, 2014). From three major players, it has grown and increased to 20 mobile network operators (Table 1.1). The four major mobile network providers in Malaysia are Celcom, Digi, Maxis, and U Mobile. Overall, the total active mobile subscribers in Malaysia is 41,324,700. The majority of customers are using prepaid services compared to post-paid services (Goi, 2016). Hence, there is a significant telecommunications infrastructure to support

the growing number of Internet users and attract business to join the digital market (Dileep et al., 2015).

Table 1. 1 Mobile Network Operators in Malaysia

No.	Mobile Network Operators
1	ALTEL
2	Buzz me
3	Celcom
4	Clixster
5	DiGi
6	FRiENDi Mobile
7	Maxis
8	Merchantrade
9	MY Evolution
10	P1
11	Redone
12	Smart Pinoy
13	SpeakOut Wireless
14	TM
15	Telin Malaysia
16	Tron
17	TuneTalk
18	U Mobile
19	XOX COM
20	Yes 4G

Source: OpenSignal (2016)

From the marketers' perspective, these trends offer a personal touch, a scheme for commerce to m-commerce. Advanced mobile technologies and services have changed the interaction between retailers and customers for a better shopping experience and increase personal customer engagement. More than these, the rise of affiliate services and marketplaces help marketers to promote their products. Many marketing strategies on m-shopping lure consumers. Overall, consumers see m-shopping as a tool to help them to shop and pay. While marketers see this trend as a new opportunity to capitalise on this emerging trend (Mahapatra, 2017).

The introduction of mobile banking has also boosted the implementation and development of mobile shopping. Maybank is the first financial institution in Malaysia

to introduce m-banking services in 2002 through SMS services. Maybank moved a step further in 2006 to introduce M2U mobile and M2UMap in 2009 (Maybank, 2009). The introduction of mobile banking effectively improved operations and reduced transaction costs. Eight local financial institutions and five foreign financial institutions offer mobile banking in Malaysia (Table 1.2). Bank Islam Malaysia Berhad (BIMB) is a commercial bank that introduced mobile banking systems to its customers. By spreading mobile banking, BIMB motivates mobile consumption and increases the ubiquity of mobile banking. M-money is on a mission to change both the convenience and infrastructure in Malaysia of mobile payments (Wong, 2014).

Table 1.2 List of Banks Offering Mobile Banking Services

Bank	Status
Al Rajhi Banking & Investment Corporation (Malaysia) Berhad	Foreign bank
AmBank (M) Berhad	Local bank
Bank Islam Malaysia Berhad	Local bank
Bank Simpanan Nasional	Local bank
CIMB Bank Berhad	Local bank
Citibank Berhad	Foreign bank
Hong Leong Bank Berhad	Local bank
HSBC Bank Malaysia Berhad	Foreign bank
Malayan Banking Berhad (Maybank)	Local bank
OCBC Bank (Malaysia) Berhad	Foreign bank
Public Bank Berhad	Local bank
RHB Bank Berhad	Local bank
Standard Chartered Bank Malaysia Berhad	Foreign bank

Source: Bank Negara Malaysia (2017)

M-commerce market size was RM4.8 billion in 2016 and it is estimated to reach RM5.7 billion by 2020 (Mobile Economy, 2017). In terms of mobile shopping, 78 percent of mobile Internet users will choose online shopping, and more than 85 percent

of users spend at least RM500 per month (Cheng, 2017). If compared with traditional e-commerce, growth in 2011 only increased by 9 percent (Lee and Wong, 2016). Customer use of mobile phones focused on three main activities, which are SMS, voice calls and social networks (Table 1.3) (Wong, 2014). Electronic products are the most popular product categories purchased using mobile phones. This is followed by items such as fashion and accessories, food and beverage, health and beauty, and home products (Wong, 2014).

Table 1. 2 Smartphone Usage

No	Smartphone usage	Percentage (%)
1	‘	91%
2	Browse Internet	71%
3	Social network	69%
4	Voice calls	67%
5	Apps usage	54%
6	Emails	53%
7	Instant message	48%
8	Video clips	40%

Source: Wong (2014)

1.2.2 M-shopping in China

According to Jack Ma, founder of Alibaba, “In the US, e-commerce is just online shopping. In China, e-commerce is a lifestyle.” Alibaba went public on the New York Stock Exchange in September 2014 and raised $25 billion to become the largest initial public offering in history. It rises symbolises the breakneck growth of China's Internet and e-commerce sectors. In 2017, China had 731 million Internet users and 695 million mobile Internet users. They use the Internet more for entertainment and consumption - SMS, social network sharing, online gaming, movie, and video streaming and shopping - network (Ma, 2017). According to CHINADAILY (Xinhua, 2017), 64.9 percent of the

population was between the ages of 16 and 59 in 2017, which has brought tremendous changes to China's consumer market. According to the data released by the China Internet Network Information Centre (CNNIC), China Mobile payment has more than 500 million users. About 400 million users are shopping on smartphones, with revenue of 157.55 trillion yuan in 2016.

Due to major state investment in telecommunication infrastructure and a relatively underdeveloped physical retail sector, China has witnessed a boom in online retail, which offers consumers with a better variety, lower prices, and greater convenience. The convenience of mobile shopping and the maturity of the smartphone market where there are smarter smartphone brands created and with lower prices has stimulated and attracted customers to enjoy mobile shopping anytime and anywhere. This has made mobile commerce an important part of the Chinese economy. Currently, the huge potential market for m-payment has attracted various service providers in China to provide m-payment services. For example, Alipay, the most popular third-party online payment platform, recently released its Alipay Wallet. Tencent’s WeChat Pay also incorporated m-payment into its system. As of 2017, Alipay had more than 520 million users and the first 10 months of 2017, the volume of mobile payments transactions approximately $12.8 trillion (Cheng, 2017). In addition, China's three major mobile operators, China Mobile, China Telecom and China Unicom have all invested heavily in system upgrades. In July 2014, they jointly announced plans to build a national 4G network capable of providing fast mobile broadband to a billion users.

Mobile shopping and payments come hand in hand. The rising popularity of Chinese mobile payment systems has facilitated m-commerce. Since June 2010, the People's Bank of China has issued over 200 licences to non-financial institutions to provide third-party payment services and declared a national mobile payment standard.

These two developments have led to explosive growth in the Chinese mobile payments market, which reached $9 trillion in 2016, according to iResearch Consulting Group (Cheng, 2017).

One of the interesting characteristics of the Chinese market, for both academicians and practitioners, is that, although m-payment evolved from the convergence of payment and telecommunication industries (traditionally dominated by state-owned enterprises in China), it was private, third-party payment companies that developed m-payment platforms, which gained a competitive edge over state-owned enterprises (Jahangir & Begum, 2008). Many other third-party e-payment systems have emerged. The past several years witnessed the popularity of mobile commerce applications, such as mobile shopping, mobile travel service, online to offline (O2O) consumption, etc.

China has the world's largest mobile subscriber base: the number of mobile subscribers in China reached 1.44 billion as of February 2018 (Kielty, 2018). 4G is also developing robustly in China, and the number of 4G users reached over 888 million (Roth, 2018). At the same time, 5G has already been rolled out and will further boost the growth of mobile Internet usage. In light of these and other recent developments, for instance, a large number of mobile subscribers and mobile Internet users, by 2019, mobile users in China will spend nearly $1.5 trillion on mobile commerce, which will amount to nearly a quarter of the country’s retail market (eMarketer, 2016). It is evident that there are a huge market and growth potential in China.

1.3 STATEMENT OF THE PROBLEM

This study examines the smartphone user's intention to use mobile shopping on smartphones among students in IIUM. According to the latest data from Malaysian Communication and Multimedia Commission (MCMC, 2017), by the end of 2017, 50.3 percent of e-commerce traffic is from mobile phones compared with only 49.7 percent of computers, in which, m-commerce sales in 2014 were $204 billion and it is expected to reach as much as $626 billion in 2018 (Wong, 2016). In China, as reported by Euromonitor International (2016), 66 percent of digital purchases were executed through a mobile device, which equates to $450.3 billion in mobile-based purchases and accounts for 70 percent of goods of digital purchases. Based on the data provided above, Malaysia and China offer huge potential perspectives on the study of M-shopping adoptions. In Malaysia, along with the increased in the number of mobile subscribers, the network penetration rate is high, and the online payment market has great potential for development (Holmes et al., 2013). In comparison, China has a higher adoption of m-commerce than Malaysia. The widespread usage of M-shopping activities in Malaysia remains lower for consumers to conduct transactions for goods or services by using the mobile phone. After review from the resources, the key question faced by telecommunication providers is how to attract the potential customers into m-shopping adoption.

Therefore, this study is undertaken for the following reason:

Previous studies mostly focused on electronic commerce (Chong, Chan & Ooi, 2012; Alduaij & Amari, 2016; Marinkovic & Kalinic, 2017), and mobile commerce (Chang, Chen & Zhou, 2009; Hadadi & Almsafir, 2014; Duane, Oreilly & Andreev, 2014) adoption. Thus, this study focuses on the intention to use mobile shopping on a smartphone.

Most studies focused on the state and characteristics of mobile commerce (Thakur & Srivastava, 2013; Alduaij & Amari, 2016; Zhang, Zhu, & Liu, 2012). Hence, this study focuses on the influence of mobile shopping attitude and intention to use among smartphone users.

Previous studies have mostly focused on using TAM to analyse consumers, mobile shopping behaviour, using only analytics to perceived usefulness and perceived ease of use to analyse the mobile shopping status. (Holmes et al., 2013; Alduaij & Amari, 2016; Alshurideh, 2016). Therefore, this study focuses on the use of TAM's five expansion factors (perceived usefulness, perceived ease of use, perceived privacy, perceived trust and perceived enjoyment) to investigate the intentions to use mobile shopping on a smartphone.

In previous studies, researchers have focused on the mobile commerce usage in Malaysia only (Wong and Hiew, 2005; Eza & Ten, 2011) or China only (Lu & Yao et al., 2003; Liu, Zhenhua, et al., 2009; Liu & Li, 2010; Chong, 2013). In this study, we investigate the intention to use mobile shopping on smartphones among Malay and Chinese students in one sample.

Even though many studies investigated the different attitudes of consumers in mobile shopping (Holmes et al., 2013; Sari & Bayram, 2015), this study explores the relationship between consumers' attitude and consumer behavioural intention of using mobile shopping among Malay and Non-Malaysian Chinese smartphone users in IIUM.

Many studies also used TAM (Wu & Wang, 2005; Dai & Palvi, 2009; Rajabion, 2015; Hampshire, 2017) while only a few of them focused on the attitudes through TAM that influence the consumers' behavioural intention. Our study expands the variables in TAM by focusing on the effect of perceived usefulness, perceived ease of use, perceived privacy, perceived trust and perceived enjoyment on consumers' intention to use mobile

shopping on smartphones among Malay and Non- Malaysian Chinese students in IIUM. This study will also investigate the mediating effect of attitude on perceived usefulness, perceived ease of use, perceived privacy, perceived trust, and perceived enjoyment.

1.4 OBJECTIVES OF THE STUDY

The main objective of this study is to investigate the factors influencing the intention to use mobile shopping on smartphones among Malay and Non-Malaysian Chinese students in IIUM.

The specific objectives of this study are:

1. To determine the relationship between perceived usefulness and customers' attitude towards the intention to use m-shopping on smartphones among Malay and Non-Malaysian Chinese students in IIUM.
2. To determine the relationship between perceived ease of use and customers' attitude towards the intention to use m-shopping on smartphones among Malay and Non-Malaysian Chinese students in IIUM.
3. To determine the relationship between perceived privacy and customers' attitude towards the intention to use M-shopping on smartphones among Malay and Non-Malaysian Chinese students in IIUM.
4. To determine the relationship between perceived trust and customer's attitude towards the intention to use M-shopping on smartphones among Malay and Non-Malaysian Chinese students in IIUM.
5. To determine the relationship between perceived enjoyment and customers' attitude towards the intention to use m-shopping on smartphones among Malay and Non-Malaysian Chinese students in IIUM.