

**FACTORS INFLUENCING THE INTENTION TO USE THE E-TICKETING  
SYSTEM FOR INTERNATIONAL FLIGHTS AMONG MALAYSIAN AIR  
TRAVELLERS'**

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Sincerely,

Chee Kheong

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## **ABSTRAK**

Masa kini, sektor pengangkutan udara menghadapi cabaran dari segi ekonomi yang tidak stabil dan bencana alam sedunia. Antara cabaran yang dihadapi dalam sektor pengangkutan ini adalah bukan sekadar peningkatan harga minyak dalam beberapa tahun kebelakangan ini, malahan memberi kesan kepada peningkatan kos operasi. Teknologi informasi masa kini memainkan peranan yang penting dengan penggunaan strategi “e-bussiness” bagi meringankan beban yang dihadapi. Ia dapat membantu dalam mengurangkan kos operasi terutama dalam penggunaan tempahan secara “online”.

Kajian ini memfokuskan kesan kepada pengangkutan udara Malaysia terhadap penggunaan sistem “E-Ticketing” dari segi kemudahan, risiko, keupayaan, dan kos kewangan. Sikap perantara juga dikaji bagi mengenalpasti samada terdapat sebarang kesan sikap pengantara terhadap penggunaan “E-ticketing”.

Kajian ini telah dibuat di “Penang International Airport” dengan 181 responden yang pernah mendengar tentang “E-ticketing” dan menggunakan sistem tersebut. Analisis regresi berganda telah digunakan untuk menganalisis data yang dikutip. Keputusan kajian menunjukkan bahawa objektif dari segi kemudahan dan risiko yang rendah hipotesis disokong. Namun begitu, segi keupayaan, kos kewangan dan sikap pengantara hipotesis tidak disokong.



## **ABSTRACT**

Airline industries today face stiff competition in light of dynamic changing economic climate and global disaster. Challenges facing by airline industries such as but not limited to the consistent rising in crude oil price for the past few years and increase in operating cost. Information technology plays a significant role in supporting its e-business strategies to remain competitive. It contributes significantly to cost reduction, especially through the Internet booking.

This study focus on factors that influence Malaysian air traveller intention to use E-ticketing, such as perceived ease of use, perceived risk, perceived capability, and perceived financial cost, a mediator of attitude also included to test any mediating effect of attitude influence intention to use E-ticketing.

A survey study was carried out at Penang International Airport, 181 respondents were used to analyst as sample size. Multiple regression analysis was used to test the model and hypotheses. The survey results indicate that perceived ease of use and perceived risk are supported. In the other hand perceived capability, perceived financial cost, and attitude are not supported.

## **Chapter 1**

### **INTRODUCTION**

#### **1.0 Introduction**

Over the last few years, Internet users have exponentially increased globally. According to Malaysian Communications and Multimedia Commission (MCMC), Malaysia has an Internet usage penetration of 47.8% of its population in 2007. The gaining popularity of Internet usage is basically due to affordable of broadband internet access in Malaysia and many activities can be done for online users, such as online gaming, online chatting, online shopping and etc. According to UCLA Center for Communication Policy (2001), online shopping has become the third most popular internet activity, immediately following e-mail/ instant messaging and web browsing. It is even more popular than seeking out entertainment information and news, two commonly thought of activities when considering what internet users do when online. Online shopping refers to the business transactions via the Internet.

Internet transactions within Malaysia accounted for a mere 4% of the total value of the travel and tourism industry in 2005, which showing a good growth opportunities in the future. It has also revolutionized the airline industry by introducing paperless ticket or more famously known as E-ticketing (Electronic Ticketing). E-ticketing brings many benefits to the airline operators and also travellers. However, many air travellers are reluctant to use E-ticketing, due to many reasons such as: perceived ease of use (Shih, 2004), security concern

(Athiyaman, 2002), perceived financial cost (Lawton and Solomko, 2005) and etc. For example, a study of Hong Kong consumers have embraced the web but appear reluctant to buy airline tickets online, suggesting that perceptions of risk outweigh perceived convenience (Kolsaker et al, 2004). As such, research is needed to identify the factors determining travellers' acceptance toward E-ticketing in Malaysia domain.

## **1.1 Background**

E-tickets substitute the paper-based flight coupons by an electronic ticket image that is stored in the airline's database. With an e-ticket details of the passengers' journey are stored in an airline database, and are retrieved using a unique look-up code. This means that there is no need to issue a physical ticket to the traveller, instead the code can be delivered via the Internet or over the phone.

E-ticketing, the new way of issuing and delivering tickets is becoming prevalent and is employed by many airline companies in an effort to reduce the costs that go to printing tickets. The International Aviation Transport Association (IATA), which represents close to 300 airlines, and almost all international air traffic, is currently focusing to get airlines fully on board with electronic ticketing. Their hoped-for deadline for saying "buh-buy" to paper tickets is May 31, 2008, which is already a delay from the original deadline of 31 Dec, 2007. The proposed deadline from IATA may be an ambitious date given the fact that there are many airlines still in progress to resolve the regional gaps. In line with IATA new rule, Malaysia national carrier Malaysia Airlines (MAS) has allocated 200 million over 3 years

(2007 - 2010) to migrate to a fully E-ticketing system for all its flights. In addition, based on SITA's 8<sup>th</sup> Annual Airline IT Trends Survey, there has been growth in Asia Pacific airlines selling E-tickets, from 22% in 2005 to 50% in 2006.

E-ticketing has been introduced to reduce costs and improves traveller's experiences. Dr. Amin Khan, senior general manager national carrier Malaysia Airline (MAS) claims that E-ticketing helps in a cost reduction of up to RM70 million per year for MAS and it would save RM20 per ticket issued. E-ticketing involves the digitalization of tickets and allows airline companies to eliminate the use of paper tickets. In a move to add value for travellers and boost its online ticket bookings, MAS will soon make its lowest international fares available only through its website. One of the most effective solutions for increasing business values, attracting more customers, and increasing customer satisfaction is to provide internet-based low-fare air travel tickets. MAS is targeting RM450million (US\$129) worth of online sales this year (2007). Last year, the airline recorded over RM120 million worth of online sales. MAS's commercial director, Dato' Rashid Khan said, "Online transactions are the way to go especially as we move towards electronic ticketing this year where physical or paper tickets will no longer be issued".

Table 1.1 and 1.2 Tables below show the airlines of Malaysia and other airlines around the region which are ready with E-ticketing travel option either for domestic or international flights.

**Table 1.1 Airlines of Malaysia: Which offering E-ticketing (domestic or international)**

<b>Airline</b>	<b>Frame</b>	<b>Operates</b>	<b>E-ticketing</b>
AirAsia	Budget airline	Domestic and international (regional routes) flights	√
Athena Air Service	NIL	Domestic and international (limited to Jakarta and Surabaya, Indonesia only) flights	X
Berjaya Air	NIL	Domestic and international (limited to Singapore and Koh Samui, Thailand)	X
Firefly (airline)	Budget airline	Domestic and international (limited to Thailand)	√
Hornbill Skyways	Helicopter service	Operating in towns and rural area in Sarawak, Malaysia	X
Layang Layang Aerospace	NIL	Regional airlines (Limited to off-shore islands area around Sabah)	X
MASwings	NIL	Rural Air Services in East Malaysia	X
Malaysia Airlines	National airline	Domestic and International routes	√
Malaysia Airlines Kargo	Cargo airline	International cargo service routes	X
Sabah Air	NIL	Surrounding Sabah sight seeing service	X
Transmile Air Services	Cargo airline	Domestic and international cargo services	X

**Table 1.2 Airlines around the region: Which offering E-ticketing**

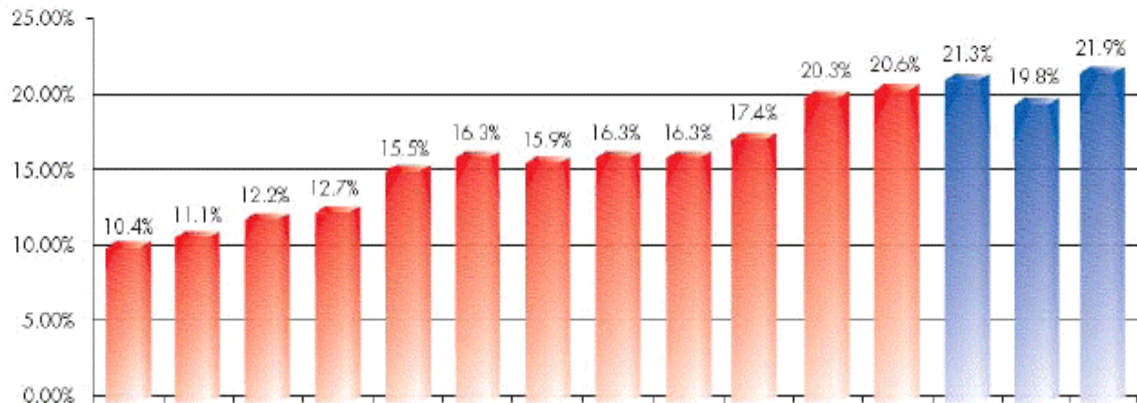
<b>Country</b>	<b>Airline</b>	<b>Frame</b>	<b>Operates</b>	<b>E-ticketing</b>
Singapore	Singapore airline	National airline of Singapore	International routes	√
Taiwan	China Airlines	Foundation belongs to the government of the Republic of China	Domestic and international flight services	√
Hong Kong	Cathay Pacific Airways	Based in Hong Kong	One of the five airlines awarded five-star rating from Skytrax. Offering international flighting routes	√
Japan	Japan airline	Airline of Japan	International and domestic flight services	√
Thailand	Thailand airway international	National air carrier of Thailand	Domestic and international flight services	√
Indonesia	Garuda international	Indonesia	Domestic and international flight services	√

From the travellers' point of view, the main benefits are the stress-free nature of paperless tickets, as the travellers do not need to carry a paper ticket, which mean that the tension of misplacing a ticket is eliminated. Additionally, with the increasing use of E-ticketing, passengers will have more choice of check-in options, either through the self service check-in kiosk located at the airport, the normal check in counters and online check in through airlines websites. MAS planned to install its own check in kiosk at KLIA (Kuala Lumpur International Airport) by the third quarter of year 2007.

E-ticketing adoption exploded during 2004, with the number of e-tickets issued through the Abacus system increasing 195% (to 2.86 million) over 2003' total of 973,000. Singapore led e-ticket adoption (up 193% in year 2003 and 9,349% in year 2002) ahead of Taiwan (140%/ 1,737%) and Hong Kong (185%/ 3,817%). Between January 2004 and March 2005, the proportion of e-tickets grew from 10.4% to almost 22% of all Abacus tickets issued. In the first three months of 2005, e-ticketing averaged 111% growth over the same period in 2004.

Figure 1.1 Shows the growth trend of electronic ticketing issue at Asia-Pacific region between Jan 2004 – March 2005.

Electronic Ticketing: Percentage of Total Tickets Issued



**Figure 1.1. Asia-Pacific Travel Continues on Growth Trail**

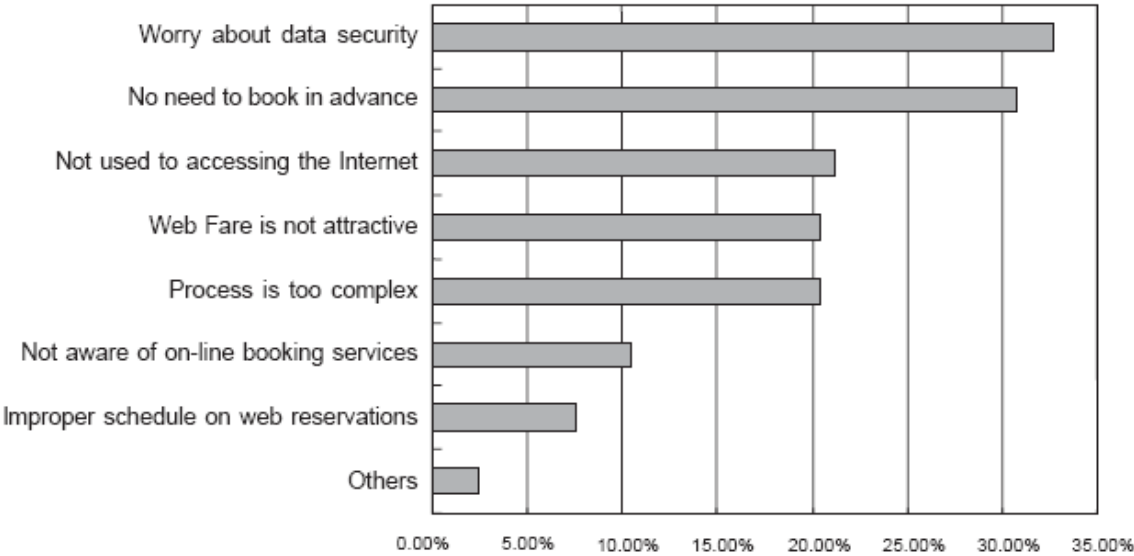
**(Source: Pacific Asia Travel Association, pata.org)**

With a growing number of people buying online, the Internet has revolutionised distribution channels and changed the way companies do business, which includes the travel industry. The majority of airline companies have made strategic decisions to bypass intermediaries and target consumers directly through the Internet i.e. E-ticketing. Airline companies use the Internet not only as a valuable marketing tool to provide a low-cost medium for advertising and promotion, but also as a channel of communication to generate additional sales (Yu, 2008).

However, with the potential growth, there is one problem that needs to be solved. According to Forrester Research (2006), most travellers in Asia-Pacific region limit their online activities to planning, rather than booking (Yu, 2008).



According to Shon et al. (2003), some travellers are not willing to purchase items over the Internet due to credit card security issues. Other potential travellers do not use computers and therefore are not even connected to the Internet. As such, in the airlines context, traditional tour agents are still attractive to those that do not have credit cards, do not trust the transaction mechanism on the Internet, and are not familiar with computers. Figure 1.2 below show the major reasons for not buying tickets on websites carried out in year 2001 among Taiwanese air travellers.



**Figure 1.2. Major reasons for not buying tickets on websites**

**(Source: Shon et al., 2003)**

**1.2 Problem Statement**

Despite Internet is gaining acceptance and adoption in developed countries, transactions over the Internet remained small in Malaysia. According survey from Travel and Tourism

Malaysia, Malaysians are wary of online purchases due to rise in the reports in “*phishing*” attacks, identity theft, computer viruses, and unauthorized access to credit data. The Internet remained only as an alternative medium for information gathering rather than a multipurpose tool in Malaysia.

According to the Malaysian Communications and Multimedia Commission’s – Household use of the internet survey 2005, Malaysian Internet users online activities, online purchases is one of the lowest out of online activity there are merely 2% of it while Email usage is the highest in the report of 74%. That led us to some indication that Malaysian still very conservative in Internet transaction.

Therefore the challenge of identifying, attracting and retaining customers in the online market as well as the issue of understanding travellers’ perception is becoming a critical success factor. Thus this research studies the factors that may lead to Malaysian traveller’s usage intention of E-ticketing. The focus of this research is on the factors affecting the intention to use E-ticketing through attitude developed towards intention to use, which is believed could increase or decrease intention to use of E-ticketing.

### **1.3 Research Objective**

The objective of this research is to study the factors influencing traveller’s intention in using E-ticketing for international flight. Malaysian was been first introduced to E-ticketing by Malaysia budget airline Air Asia which fully implement E-ticketing travel system for

domestic flight. Since year 2007 Air-Asia has been actively expand their route portfolio to international flight. This study will discuss on the findings and explain the behavioural of Malaysian travellers that influence their intention to use E-ticketing for international flight.

Specifically, this study intends to:-

1. Examine the effect of perceived usefulness on the intention to use E-ticketing on international flight.
2. Examine the effect of perceived ease of use on the intention to use E-ticketing on international flight.
3. Examine the effect of perceived ease of use via perceived usefulness towards intention to use E-ticketing on international flight.
4. Examine the effect of perceived risk on the intention to use E-ticketing on international flight.
5. Examine the effect of perceived capability on the intention to use E-ticketing on international flight.
6. Examine the effect of perceived financial cost on the intention to use E-ticketing on international flight.
7. Examine the effect of attitude on the intention to use E-ticketing on international flight.

#### **1.4 Research Questions**

This study intends to answer a few questions:-

1. Does perceived usefulness influence the intention to use E-ticketing on international flight?
2. Does perceived ease of use influence the intention to use E-ticketing on international flight?
3. Does perceived ease of use having direct/ indirect relationship (via usefulness) on intention to use Intention to use E-ticketing on international flight?
4. Does perceived risk influence the intention to use E-ticketing on international flight?
5. Does perceived capability influence the intention to use E-ticketing on international flight?
6. Does perceived financial cost influence the intention to use E-ticketing on international flight?
7. Does attitude contribute to the use intention to E-ticketing on international flight?

### **1.5 Definitions of Key Terms**

The following are the key words and phrases used in this research with its definitions within the context of this document.

- i. International Travellers – Passenger who use air travel as a transport to travel from origin country to foreign country
- ii. Air Passenger with Electronic ticket – e-ticket exists only as a digital record in the airline computers, passenger usually print out a copy of their receipt which contains the record locator or reservation number and the e-ticket number used to represent the purchase of a seat on a passenger airline

- iii. Perceived Usefulness (PU) – The degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989).
- iv. Perceived ease of use (PEOU) – The degree to which a person believes that using a particular system would be free from effort (Davis, 1989).
- v. Perceived risk (PR) – Is the subjective judgement that people make about the characteristics and severity of a risk.
- vi. Perceived capability (PC) – is an impression that one is capable of performing in a certain manner or attaining certain goals.
- vii. Perceived financial cost (PFC) – The Wallis Report 1997 (Sathye, 1999) stated that the technology must be reasonably priced relative to alternatives for customer to adopt.
- viii. Attitude (AT) – Is a hypothetical construct that represents an individual's like or dislike for an item.
- ix. Intention (INT) – In performing an action is their specific purpose in doing so, the end or goal they aim at, or intend to accomplish.

## **1.6 Significance of Study**

This study intends to provide some insights on the intention to use E-ticketing. This study would be significant for airline companies to understand the underlying factors that could increase the intention to use E-ticketing, which will lead to actual usage.

World airlines face challenges adjusting flight charges to their customers in view of crude oil price per barrel has reached the records high of USD87.22 end of Nov 2007, based

on Energy Information Administration, official Energy Statistics from the U.S. Government. The use of E-ticketing has bring benefits to many areas, firstly environmental friendly by reducing the use of paper, secondly the cost saving from printing paper ticket can in turn to reducing the air travelling cost, and thirdly the airlines company can wisely use the records of E-tickets in enhancing the customer loyalty program.

With the understanding of acceptance towards E-ticketing, airline companies could better plan their marketing strategies and pay careful attention to the area to be improved for better return on investment in setting up the E-ticketing infrastructure.

### **1.7 Organization of Remaining Chapters**

This report consists of five chapters. Chapter one consists of introduction and overview of the study which includes background of the study, problem statement, research objectives and questions, significance of the study, definition of key terms and organization of chapters.

Chapter 2 presents the review of literatures that has been undertaken with regards to E-ticketing. The theoretical frameworks and formulation of hypotheses are also discussed in the same chapter.

The third chapter explains the research methodology which includes research design, sample collection, measurement of variables and the method of data analysis. Results and findings are presented in chapter 4.

Finally, chapter 5 provides a discussion, implication and conclusion of the study. The limitation of the study as well as suggestions for future research is also included in chapter 5.

## **Chapter 2**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

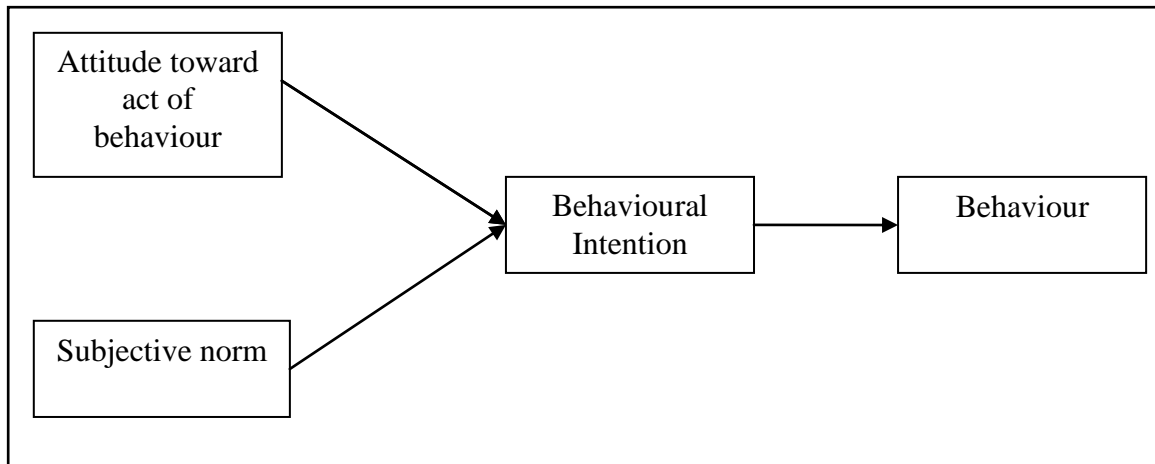
In this chapter we will review the theories adopted for this studies such as TRA, TAM, TPB and follow with literature concerning the intention to use E-ticketing. The research framework will be presented and the hypotheses development will be discussed.

#### **2.1. The Model (Theoretical Foundations)**

##### *2.1.1 Theory of Reasoned Action (TRA)*

According to TRA model (Ajzen and Fishbein, 1980), an individual's performance in a specific behaviour is determined by his/her behavioral intention, which themselves are jointly determined by individual attitudes and subjective norms. The framework of TRA is depicted in Figure 2.1.





**Figure 2.1 Theory of Reasoned Action**

**Source: Ajzen and Fishbein (1975)**

TRA says that a person's behaviour is determined by their attitude towards the outcome of that behaviour and by the opinions of the person's social environment. Attitudes are defined as the positive or negative feelings of an individual toward a specific behaviour, and these are influenced by individual beliefs. Ajzen and Fishbein (1980) proposed that a person's behaviour is determined by his intention to perform the behaviour and that this intention is, in turn, a function of his attitude toward the behaviour and his subjective norm. TRA suggests that a person's behaviour performed by combination of three components which is beliefs, attitude and intentions.

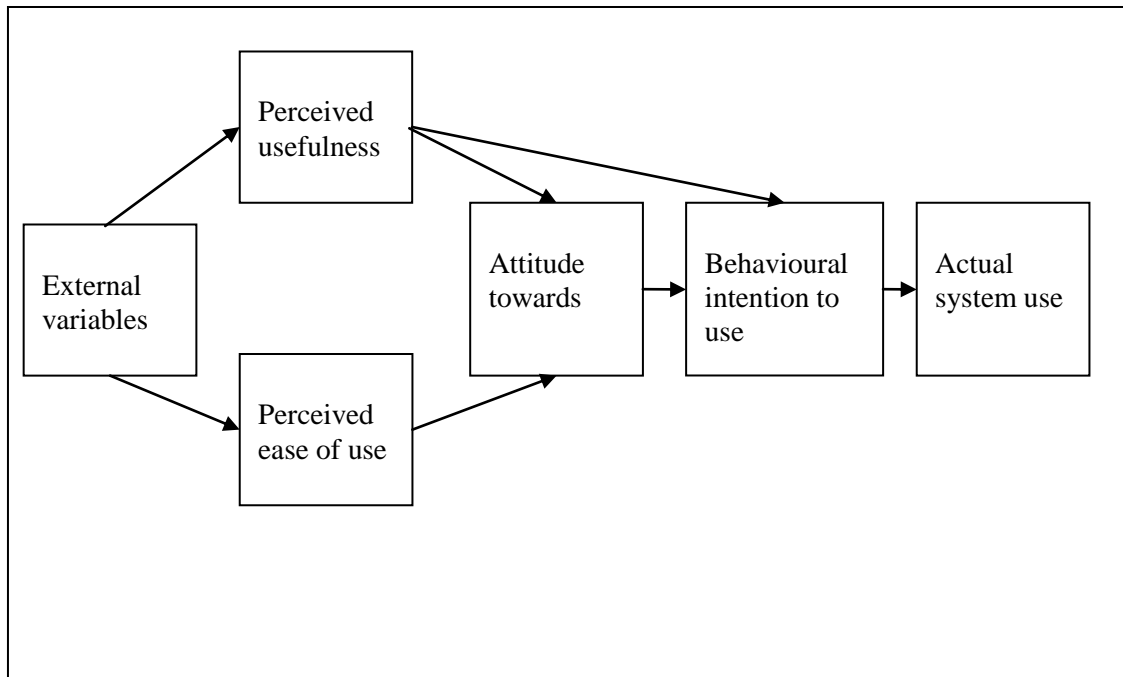
TRA model have been used as the basis of numerous Information Technology or Information System acceptance studies (Leonard et al., 2004; Shih, 2004; Kim et al., 2007).

### *2.1.2 Technology Acceptance Model (TAM)*

Building upon TRA, Davis (1989) proposed the TAM to explain and predict user acceptance on information technology (IT) and information system (IS). Specifically, TAM was developed for explaining and predicting individual acceptance of computer technology (Davis, 1989; Davis et al, 1989).

In TAM, an individual's intention to use a technology can be explained jointly by his or her perception on the usefulness and ease of use of the technology. The inclusion of perceived usefulness and ease of use as mediating variables of attitude in the model is supported theoretically and empirically (Keil et al, 1995; Taylor and Todd, 1995; Szajna, 1996; Shih, 2004). It also forms the basis for this study.

Davis (1989) defined perceived usefulness (PU) as, "the degree to which a person believes that using a particular system would enhance his/her job performance" and defined perceived ease of use (PEOU) as, "the degree to which a person believes that using a particular system would be free of effort". Within TAM, PU is a major factor and PEOU is secondary factor in determining system usage. The framework of TAM is depicted in Figure 2.2.



**Figure 2.2 Technology Acceptance Model**

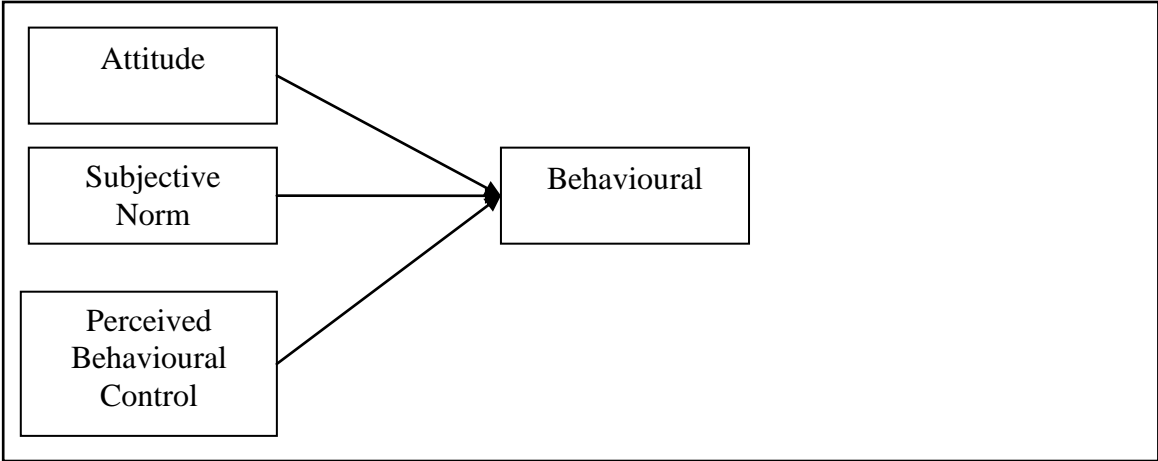
**Source: Davis et. al. (1989)**

Moreover, Davis (1989) suggested that PEOU has a positive, indirect effect on system usage through PU. Empirical studies of TAM have shown that usage of IS is determined by user behavioural intentions, which are jointly determined by user PU and attitudes toward using the IS. Attitude at the same time is determined by PU and PEOU. Many IT/IS studies have been conducted based on the TAM, since PU and PEOU are two general beliefs suited in predicting IS usage (Shih, 2004; Kim et al., 2007).

### *2.1.3 Theory of Planned Behaviour (TPB)*

Theory of planned behaviour (TPB) is adapted based on TRA due to certain limitations, which has to do with the incompleteness of volitional control of behaviour (Ajzen, 1991). The

original framework of TPB is depicted in Figure 2.3. According to TPB, an individual's behaviour can be explained by his or her behavioural intention, which is influenced by attitude, subjective norms, and perceived behavioural control (Ajzen, 1985; Ajzen, 1991). TPB accounts for situations in which an individual lacks substantial control over the targeted behaviour.



**Figure 2.3 Theory of Planned Behavior**

**Source: Mathieson (1991)**

Traveller intention to use E-ticketing is jointly determined by his or her: (1) positive or negative evaluation on using the technology; (2) perception of the availability skills for using the technology (3). Relationships among these constructs have been found significant in literature (Mathieson, 1991; Taylor and Todd, 1995; Harrison, et al., 1997; Chau and Hu, 2001).

## **2.2 Review of Literature**

### *2.2.1 Intention to Use E-ticketing*

Intention is defined as the “strength of conscious plan to perform the targeted behaviour” (Harrison et al., 1997), and should be the best predictor of behaviour if nothing else in the environment has occurred to cause changes. To study air travellers’ acceptance toward E-ticketing, their “intention to use” rather than actual behaviour is chosen as the dependent variable for both theoretical and practical reasons.

Theoretically, according to Gattiker (1990), technology acceptance is viewed as an individual’s psychological state with regard to his or her voluntary or intended use of a particular technology. Considerable studies report a strong and significant causal link between behavioural intention and targeted behaviour (Yu, et al. 2005; Sheppard, et al., 1998; Venkatesh and Davis, 2000).

Practically, E-ticketing has not been widely adopted by most travellers in Malaysia for international flight. As such, Agarwal and Prasad (1998) argue that given a survey-based research design, intentions are more appropriate than actual usage as “they are measured contemporaneously with beliefs”.

Many researchers had tried to study the significant factors influencing traveller’s intention to use E-ticketing, such as: trust, familiarity and attitude (Wan and Che, 2004);

perception of the Internet, self-efficacy, customer's domain specific innovativeness and wired-lifestyle (Li and Buhalis, 2006).

Therefore, using behavioural intention as a dependent variable to study individual technology acceptance is theoretically justifiable (Mathieson, 1991; Chau and Hu, 2001; Leonard et al., 2004).

### *2.2.2 Perceived Usefulness*

Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). Accordingly, perceived usefulness of E-ticketing can be defined as the existence of advantages perceived by travellers using E-ticketing.

Previous studies have emphasized that perceived usefulness has consistently been shown to be a strong determinant of behavioural intention (Davis, 1993; Igbaria et al, 1989; Venkatesh, and Davis, 2000). Besides that, a review of relevant literature reveals that perceived usefulness is an influential determinant of attitude in the technology acceptance model (Davis, 1989; Davis et al., 1989; Keil et al., 1995; Taylor and Todd, 1995; Szajna, 1996). According to the postulates and empirical results of TAM, the original PU is positively correlated with user attitudes toward an IS and its use (Mathieson, 1991; Shih, 2004).

Two of the main motivations why consumers use the internet are for its potential time-savings (Rowley, 2000; Heung, 2003) and convenience (Foucault and Scheufele, 2002; Chen and Chang, 2003; Heung, 2003; Rose et al., 2003; Rodri'guez, 2002, cited by Ryan et al., 2003). According to Yan and Harmen (2006), convenience concerns psychological cost and other forms of non-monetary costs such as time, effort and stress (Cassill et al., 1997; Aylott and Mitchell, 1998).

In line with Berry et al.'s (2002) conceptualization of service convenience, shopping convenience can be defined as a reduction of the opportunity costs of effort and time involved in shopping activities. Compared with in-store shopping, online shopping offers greater convenience by making shopping possible from anywhere, at anytime. Moreover, the online shopping service provides consumers with the opportunity of saving time by making visits to a traditional retail stores. According to Athiyaman (2002), E-ticketing is a time saving method of purchase and "response time" advantage of the Internet.

From the airlines company point of view, E-ticketing enhances their efficiency. According to Hsiu and Kevin (2003), the efficiency attribute is based on the notion that transaction times can be reduced over traditional person-to-person exchanges when utilizing Internet self-service technologies (ISST). Electronic kiosks being utilized to speed up transactions in airline ticketing and other industries are prime examples of this attribute at work.

In addition, with the adoption of E-ticketing, travellers are able to enjoy the provision of extensive information, lower price, discounts and cost saving due to the emergence of the electronic market (Heung, 2003). June and Ant (2005) also highlights that adoption of E-ticketing will enhance the flexibility and effectiveness of using electronic ticketing due to the inheriting availability and mobility of Internet.

However, usability is one of the biggest challenges issues in adopting E-ticketing. Research indicates new challenges in usability design. It has been observed that waiting on the internet causes impatience and frustration on the part of the e-consumer (Eisenberg, 2002; Ananova, 2002; Ewalt, 2002), abandonment of web sites (Kaufman-Scarborough and Lindquist, 2002), and negative attitudes to online retailers (Rose and Straub, 2001). It is also widely accepted among internet users, practitioners, academics and web designers that the internet is often painfully slow (Dellaert and Kahn, 1999; Rose and Straub, 2001; Ryan et al., 2003; Weinberg et al., 2003). Waiting is such a common feature of internet use that there are even books packed with weird and wonderful ways to fill the internet waiting time (Bowman, 2002).

Besides that, slow downloading web pages have been linked to inhibiting “flow” on the web (Rettie, 2001; Van Beveren et al., 2003) and decreasing the e-consumer’s trust in the web site (Yoon, 2002). Download speed has been identified as one of the main features of web site usability, which in turn is a key determinant of web site quality (Lohse and Spiller, 1999). Furthermore, download time has also been identified as a key factor in achieving the optimum levels of web site interactivity (Stewart and Pavlou, 2002; Chen and Chang, 2003; Liu, 2003; Song and Zinkhan, 2003).



Yan and Harmen (2006) also highlights that online shopping also has its inconveniences. For example, many households still do not have access to the internet from home (ONS, 2002b) and first-time online customers have to familiarize themselves with the system and set-up an account.

### *2.2.3 Perceived Ease of Use*

Perceived ease of use is defined as “the degree to which a person believes that using a particular system would be free of physical and mental efforts” (Davis, 1989). This construct is central to the TAM (Davis, 1989) and has been used in many technology-based studies. Davis claimed that an application that is perceived to be easier to use is more likely to be accepted by users.

One of the earliest works that studies the concept of ease of use is Goodwin (1987), who argues that the effective functionality of a system, i.e., perceived usefulness, depends on its usability. With the passage of time, Davis (1993) suggests that perceived ease of use may actually be a prime causal antecedent of perceived usefulness. Extensive researches over the past decades also provide evidence of the significant effect perceived ease of use has on usage intention, whether affecting perceived usefulness directly or not (Davis, 1989; Davis et al, 1989; Keil et al, 1995; Szajna, 1996; Taylor and Todd, 1995; Shih,2004).