

## Modeling roles of subjective norms and eTrust in customers' acceptance of airline B2C eCommerce websites

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### ABSTRACT

Airline companies have increasingly employed electronic commerce (eCommerce) for strategic purposes, most notably in order to achieve long-term competitive advantage and global competitiveness by enhancing customer satisfaction as well as marketing efficacy and managerial efficiency. eCommerce has now emerged as possibly the most representative distribution channel in the airline industry. In this study, we describe an extended technology acceptance model (TAM), which integrates subjective norms and electronic trust (eTrust) into the model, in order to determine their relevance to the acceptance of airline business-to-customer (B2C) eCommerce websites (AB2CEWS). The proposed research model was tested empirically using data collected from a survey of customers who had utilized B2C eCommerce websites of two representative airline companies in South Korea (i.e., KAL and ASIANA) for the purpose of purchasing air tickets. Path analysis was employed in order to assess the significance and strength of the hypothesized causal relationships between subjective norms, eTrust, perceived ease of use, perceived usefulness, attitude toward use, and intention to reuse. Our results provide general support for an extended TAM, and also confirmed its robustness in predicting customers' intention to reuse AB2CEWS. Valuable information was found from our results regarding the management of AB2CEWS in the formulation of airlines' Internet marketing strategies.

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### 1. Introduction

Traditionally, travel products have largely been handled in the distribution network activated by travel agencies (Buttle & Bok, 1996). The same customer needs are currently satisfied via a variety of distribution systems, including the computerized reservation system (CRS), the global distribution system (GDS),<sup>3</sup> or videotext and teletex systems utilized in in-house mode for their own operations (Copeland, 1991; Copeland & McKenney, 1988). The emergence of the Internet and the increasing growth of electronic commerce

(eCommerce) in the mid-1990s rendered business-to-business (B2B) and business-to-customer (B2C) relationships more interactive and applicable for travel-related businesses. This facilitated alterations in customer behaviors and attitude regarding travel products via integrative and mutually supportive means for information exchange (O'Connor & Frew, 2000; Werthner & Klein, 1999).

The first appearance of eCommerce between the airline companies and the customers was in the dissemination of frequent flyer programs (FFPs), beginning in the mid-1980s. This performed a crucial function in providing airlines with detailed customer information. The data from FFPs developed from the modification and completion of initial customer records was an important determinant in successful relationship marketing and customer relations management (CRM) for airline companies, which provided a foundation for today's eCommerce (Chen, Gillenson, & Sherrell, 2002).

The development of the Internet, which significantly increased the use of eCommerce by airline companies during the mid-1990s, performed a crucial function in reducing distribution costs, in that it helped lower the ratio of fixed costs in the cost structure. The strategic application of eCommerce became necessary for airline

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<sup>3</sup> GDS refers to the total computerized system covering the worldwide networks such as SABRE, AMADEUS, GALILEO, and WORLDSPAN, which support integrated reservations related to customers' travel arrangements, including airline reservations, airfare determinations, hotel & rent car reservations, and other travel-related services (cf., Buhalis & Licata, 2002; Copeland, 1991; Copeland & McKenney, 1988; WTO, 1995).

companies in order to achieve long-term competitive advantage, global competitiveness, customer satisfaction, and to enhance marketing efficacy and managerial efficiency (Tsai, Huang, & Lin, 2005). Nowadays, eCommerce conducted over the Internet has become not only the most representative distribution channel for airline industries, but it is also one of the most important factors in determining firms' competitive advantage.

eCommerce conducted through websites can be understood in the context of conventional customer behavior theories, as well as a variety of customer behavioral characteristics in utilizing and applying computer hardware and software. Taking into account that customers partake voluntarily in Internet shopping, Davis' (1986) *technology acceptance model* (TAM) can prove to be a useful research model to explain the internal and external motivations that initiate shopping behavior on websites. Although a great deal of research has been conducted concerning Internet marketing in the airline industry (e.g., Jarach, 2002), electronic tickets (eTickets; e.g., Shon, Chen, & Chang, 2003), and the application of new technology (e.g., Buhalis, 2004), only a minimal number of studies have utilized the concept of eCommerce for airline companies on the basis of customers' voluntary involvement.

Another purchasing behavior issue associated with eCommerce websites for the airline industry is online transaction security, which may persuade customers to stay with traditional tour agents, primarily for purchase safety concerns (Shon et al., 2003). This implies that customers may be reluctant to purchase airline B2C eCommerce websites (AB2CEWS) if they are dubious about the security of eCommerce, specifically on the AB2CEWS. That is, a definite belief regarding the security of the websites may significantly affect customer's purchasing behavior, whereas a possible perceived risk may increase a customer's intention to postpone or avoid the decision to purchase. The parent companies of the South Korean airlines are relatively large companies, and therefore the majority of customers may feel safe about their transactions with these companies, as they have modest reputations as big enterprises. This study operationalized customers' security perceptions on the AB2CEWS as a construct of electronic trust (eTrust), in order to determine the manner in which customers' security concerns, and lack thereof, could influence their acceptance of AB2CEWS.

Traditionally, customer behavior theory has suggested that customers may be influenced significantly by their perceived opinions of referents, including family, friends, and colleagues, and the degree of this influence varies among products and brands. In the airline industry, customers are capable of adjusting their purchase intention on the basis of other individuals' negativism or positivism regarding website transactions. In this study, we have employed subjective norms (i.e., others' influence on a person's behavior) of independent individuals in voluntary environments as another construct by which customers' acceptance of AB2CEWS could be assessed.

The principal objective of this study is to assess the causal determinants of customers' acceptance of AB2CEWS, on the basis of the TAM and the corresponding surveys administered to South Korean users of AB2CEWS. Our results demonstrated the acceptance of AB2CEWS from the perspective of eCommerce users through *subjective norms* and *eTrust*, which are the *external variables* in the TAM. In this study, Davis' (1986) TAM was adopted as the underlying theoretical framework, due to its position as one of the most influential extant research models designed to explain user's technology acceptance behavior (Cheng, Lam, & Yeung, 2006; Huh, Kim, & Law, in press; Kim, Lee, & Law, 2008; Lee, Kim, & Lee, 2006). The objectives of this study, in more detail, are as follows:

- (1) to examine the casual relationships of the TAM's variables (i.e., perceived ease of use, perceived usefulness, attitude toward use, and intention to reuse) in the customers' acceptance of AB2CEWS;
- (2) to assess the impacts of subjective norms and eTrust as external variables of the TAM on the variables of the TAM in customers' acceptance of AB2CEWS; and
- (3) to provide practical implications for the marketing managers and the practitioners who prepare strategic plans and implement effective tools to enhance the productivity or performance of airline B2C eCommerce through AB2CEWS.

## 2. Literature review and hypotheses

### 2.1. The technology acceptance model (TAM)

The TAM, which was proposed initially by Davis (1986), has been extensively utilized by researchers and practitioners in order to predict and explain users' acceptance of information technology (IT) or IT-related applications (Davis, Bagozzi, & Warshaw, 1989; Lam, Cho, & Qu, 2007). The TAM adopted Fishbein and Ajzen's (1975) theory of reasoned action (TRA) as a basis for specifying its casual sequence: *beliefs* (i.e., *perceived ease of use* and *perceived usefulness*) → *attitude* → *behavioral intention*. Here, *perceived ease of use* and *perceived usefulness* are the two principal constructs believed to predict users' attitude and behavioral intention. Davis (1989, p. 320) defined *perceived ease of use* as "the degree to which a person believes that the use of a particular system would be free of effort," whereas *perceived usefulness* is defined as "the degree to which a person believes that the use of a particular system would enhance his or her job performance." A number of previous studies on the TAM have proposed similar conclusions regarding the positive relationship among the TAM's perceived ease of use, perceived usefulness, attitude, and behavioral intention. Behavioral intention was considered to have been determined by an individual's attitude and its perceived usefulness (Davis et al., 1989; Luarn & Lin, 2005), whereas attitude is determined by both the perceived ease of use and the perceived usefulness (Adams, Nelson, & Todd, 1992; Agarwal & Prasad, 1997; Huh et al., in press; Kaplanidou & Vogt, 2006; Kim et al., 2008). Perceived ease of use has been suggested in many studies to positively affect the perceived usefulness (Davis, 1989; Kim, Lee, & Lee, 2002; Kim et al., 2008; Morosan & Jeong, 2008; Wöber & Gretzel, 2000).

Customers' buying behavior through AB2CEWS is a variant of transaction behavior in the context of online shopping, which is considered to be a new form of service innovation (Verhoef & Langerak, 2001). In voluntary environments, such as B2C eCommerce, customers' beliefs regarding these transactions are crucial for the gathering of information regarding purchasing behavior, and in this regard, the TAM may prove a useful research model for the prediction of customers' acceptance of AB2CEWS. Perceived ease of use when customers consider an AB2CEWS purchase represents the degree to which AB2CEWS is perceived to be easy to understand, learn, or operate. The development of more user-friendly technologies, and issues associated with transaction security should evidently be of primary concern by airline companies before they take further actions (Alamdari, 2002; Shon et al., 2003). As AB2CEWS are equipped with a well-designed user interface, customers are generally likely to believe that purchases through AB2CEWS are relatively effort-free. With regard to perceived usefulness, Shin (2004) suggested that consumers preferred to evaluate their online shopping performance in terms of the associated benefits and costs, including the maximization of convenience and the minimization of transaction time. In the context of airline product purchases through AB2CEWS, attitude refers to general customers' feelings of favorableness or unfavorableness toward the use of AB2CEWS.

In summary, if airline companies focus on building AB2CEWS that are user-friendly and allow users to learn how to easily use them, by providing conveniences such as highly visible buttons,

suggestive images, and easy-to-follow reservation engines, users will be more likely to perceive convenience, usefulness, and positive attitude. Additionally, customers will enhance positive feelings and attitude and the intention to use AB2CEWS, if they provide a perception of highly useful transaction grounds (i.e., efficient, credible, and rich in context) to customers, which includes characteristics including efficiency, speed, and detailed information regarding air schedules and fares, travel information, and tourist destinations. On the basis of the aforementioned discussion and TAM-related theoretical framework, the following hypotheses were extended for further empirical validation of the customer acceptance model in the AB2CEWS:

- H1:** Perceived ease of use exerts a positive impact on perceived usefulness of AB2CEWS.
- H2:** Perceived ease of use exerts a positive impact on attitude toward use of AB2CEWS.
- H3:** Perceived usefulness exerts a positive impact on attitude toward use of AB2CEWS.
- H4:** Perceived usefulness exerts a positive impact on intention to reuse AB2CEWS.
- H5:** Attitude toward use exerts a positive impact on intention to reuse AB2CEWS.

## 2.2. External variables of the technology acceptance model (TAM)

Subjective norms have been extensively considered in many of the models traditionally utilized to assess the adoption of eCommerce, including Fishbein and Ajzen's (1975) TRA (e.g., Gentry & Calantone, 2002), Ajzen's (1991) theory of planned behavior (TPB) (e.g., Bhattacharjee, 2000; Huh et al., in press; Lin, 2007; Wu, 2006), and their subsequent development into Taylor and Todd's (1995) decomposed theory of planned behavior (DTPB) (e.g., Huh et al., in press; Lin, 2007). These models include subjective norms as an antecedent of behavioral intention, which represents the individual's motivation to act according to the opinions of people that are relevant to him/her. The TAM by itself does not explicitly include any subjective norms variable.

Since 1990, a great number of studies have extended the TAM by adding *external variables* into the model in order to enhance the understanding of user acceptance behavior. In accordance with this, certain recent studies have extended the TAM into the context of web-based eCommerce, by including subjective norms (e.g., Herrero Crespo & Rodríguez Del Bosque Rodríguez, 2008; Zhang, Prybutok, & Koh, 2006), web security (e.g., Cheng et al., 2006), and eTrust (e.g., Corbitt, Thanasankit, & Yi, 2003; Gefen & Straub, 2003), in an effort to assess possible connections to behavioral intention. As is shown in Table 1, however, only a few of the TAM (including an extended TAM as well as a revised TAM) studies have been conducted in the domain of the hospitality and tourism industry since 2000; nonetheless, the TAM has received substantial attention from researchers and practitioners in IT and IT-related fields over the past decade.

This study assesses the roles of subjective norms and eTrust as external variables of the TAM in the acceptance of AB2CEWS by independent customers in voluntary environments, in which subjective norms are the social factor and eTrust is an individual factor. Social factors have been determined to impact user behavior (Lee, Qu, & Kim, 2007; Taylor & Todd, 1995; Venkatesh & Davis, 2000), and individual factors have proven necessary to understand online shopping behavior, as the acceptance of Internet shopping sites such as AB2CEWS is essentially an individual decision (Gefen & Straub, 2003).

Although Internet shopping sites are generally the direct correspondents for consumer transactions in eCommerce websites, a type of parent company to the original company can be considered as an indirect correspondent of the transactions by consumers.

The reputation (i.e., social influences/subjective norms) of the parent companies, in this case, can provide a cue for the evaluation of the reliability value of the sites to the consumers when they visit Internet shopping sites (Jarvenpaa, Tractinsky, Saarinen, & Vitale, 1999). Recently, Internet shopping sites, which have parent companies in large manufacturing firms, huge distribution companies, or portal sites, construct a trust of their sites by providing trustworthiness of parent companies to consumers through the background of their parent companies, accompanied by pre-established reputations and scale effects (Doney & Cannon, 1997). This scale and reputation of the parent companies also influences consumer behavior in shopping websites via indirect routes of various referents, when they disseminate positive or negative word-of-mouth (WOM) communications.

In the context of the airline industry, it can be noted that the public reputation of airline companies' websites can influence customers' behavior regarding eCommerce with the parent companies. Additionally, the effect of consumers' referents can be a factor in consumers' eCommerce behavior, as when the size of the company increases, there may exist various referents who can significantly influence consumers, in conjunction with the WOM effect. In South Korea, as stated previously, customers' trust in the payment settlement system and in the security of the airline product is relatively high in regard to Internet eCommerce, principally because the parent companies of the airlines' (i.e., KAL and ASIANA) are extremely large enterprises. In this regard, this study utilized eTrust and subjective norms as external variables of the TAM, so as to elucidate their possible effects on the airline product purchasing behaviors through the AB2CEWS.

### 2.2.1. Subjective norms and user acceptance of eCommerce

According to Fishbein and Ajzen (1975), *subjective norms* refer to "perceived pressures on a person to perform a given behavior and the person's motivation to comply with those pressures." Thus, subjective norms reflect how the customer is affected by the perception of some significant referents (e.g., family, friends, and colleagues, among others) of his/her behavior (Schofield, 1975). Numerous studies in psychology have theorized that subjective norms are an important determinant of perceived usefulness (e.g., Yi, Jackson, Park, & Probst, 2006) and behavioral intention (e.g., Herrero Crespo & Rodríguez Del Bosque Rodríguez, 2008; Lin, 2007; Taylor & Todd, 1995; Yi et al., 2006). As stated previously, the TRA identified subjective norms and attitude as determinants of behavioral intention (Davis et al., 1989), whereas the original TAM did not include subjective norms in its model.

IT usage can be derived from an individual's will to partake in such an action, which implies that a user's perception may affect the decision as to whether or not to participate. Many studies have determined that subjective norms positively influence an individual's technology usage behavior (Venkatesh & Davis, 2000). Although a study conducted by Werthner and Klien (1999) dropped subjective norms from the original TAM, in Venkatesh and Davis's (2000) TAM<sup>2</sup>, subjective norms were included in an effort to enhance the understanding of user's adoption behavior.

The innovation diffusion theory (IDT) by Rogers (2003) demonstrated that subjective norms and the interpersonal communication networks performed significant functions in the

<sup>4</sup> Venkatesh and Davis (2000) proposed an extended model of TAM, TAM2, which included subjective norms, image, job relevance, output quality, and result demonstrability. However, TAM2 examined their effects of only on perceived usefulness, instead of incorporating them into the nomological network of TAM. TAM2 examined the moderating role of experience effect on the relationship between subjective norms and perceived usefulness, between subjective norms and use intention. In addition, TAM2 examined the moderating role of voluntariness effect on the relationship between subjective norms and use intention.

**Table 1**  
Previous empirical studies on the TAM in the hospitality and tourism sectors

Authors	Context	External variables	Findings
Wöber and Gretzel (2000)	Marketing decision support system	Experience Task	Ease of use → usage Ease of use → usefulness Usefulness → usage Experience → attitude Experience → ease of use Task → usefulness
Lee et al. (2006)	Computerized reservation system	Task fit Career fit Organization fit	Perceived usefulness → intention to use Perceived ease of use → intention to use Task fit → perceived usefulness Career fit → perceived usefulness Organization fit → perceived usefulness Organization fit → intention to use
Kaplanidou and Vogt (2006)	Websites of destination marketing organizations	Accessibility Motivating visuals Trip information functionality Internet use Online trip-planning experience Previous visit to the website Previous visit to the destination Connection type	Motivating visuals → website usefulness Motivating visuals → intention to travel Trip information functionality → website usefulness Connection type → accessibility Website usefulness → Intention to travel Previous visit to the website → intention to travel Previous visit to the destination → intention to travel
Lam et al. (2007)	IT in upscale hotels	Task-technology fit Self-efficacy Subjective norm	Perceived IT beliefs → attitude Perceived IT beliefs ↔ task-technology fit Task-technology fit → attitude Self-efficacy → attitude Self-efficacy → behavioral intention Subjective norm → behavioral intention
Kim et al. (2008)	Hotel front office system	Information quality System quality Service quality Perceived value	Information quality → perceived usefulness System quality → perceived ease of use System quality → perceived usefulness Service quality → perceived ease of use Perceived ease of use → perceived usefulness Perceived ease of use → attitude toward use Perceived usefulness → attitude toward use Perceived usefulness → actual use Perceived value → attitude toward use Attitude toward use → actual use
Morosan and Jeong (2008)	Hotel reservation websites	Perceived playfulness	Perceived ease of use → perceived usefulness Perceived ease of use → perceived playfulness Perceived usefulness → attitude toward use Perceived ease of use → attitude toward use Perceived playfulness → attitude toward use Perceived playfulness → intention to use Attitude toward use → intention to use

Note: Perceived IT beliefs in Lam et al.'s (2007) study were measured on perceived usefulness, perceived compatibility, and perceived trial ability.  
Source: Huh et al. (in press).

adoption decision. The development of IT has perpetuated a tremendous change in the distribution system for airline products, such that the resultant cost-effective structure provides a sizeable advantage to both the existing large airline companies and to the customers.

Customers' purchasing behaviors vary in accordance with the degree of trust in Internet transaction, possible purchase changes in referents, and the resultant WOM effects. In particular, in the context of B2C eCommerce, individuals' intention regarding service acceptance for eCommerce are shaped not only by interpersonal influences (from family, friends, and colleagues, etc.), but also by the opinions of industry experts, as disseminated by the mainstream media (Bhattacharjee, 2000; Lin, 2007; Pavlou, 2003). This study took as axiomatic that the opinions or WOM of others could be considered as the basis for users' feelings regarding the utility of B2C eCommerce in the airline industry. That is to say, referents' (such as family, friends, or colleagues) opinions regarding specific airline websites are presumed to influence customers' perceptions of the utility, attitude, and intention to reuse AB2CEWS.

**H6:** Subjective norms exert a positive impact on perceived usefulness of AB2CEWS.

**H7:** Subjective norms exert a positive impact on attitude toward use of AB2CEWS.

**H8:** Subjective norms exert a positive impact on intention to reuse AB2CEWS.

### 2.2.2. *eTrust and user acceptance of eCommerce*

Across a variety of fields, including sociology, social psychology, and organization behavior, trust has different meanings, as it is a complex and abstract concept (Corbitt et al., 2003; Gefen, Karahanna, & Straub, 2003). In the context of social psychology, trust is defined as "the belief that other people will react in predictable ways." According to Pavlou (2003), trust is "a belief that one may rely upon a promise made by another." In the context of eCommerce, Gefen (2000) summarized *eTrust* as "a general belief in an online seller that results in behavioral intention." This is the combination of trustworthiness, integrity, and benevolence which

increases behavioral intention via reduced risk among inexperienced potential consumers (Jarvenpaa et al., 1999). Accordingly, beliefs regarding eTrust include online consumers' beliefs and expectations regarding the trust-related characteristics of the online seller (Gefen et al., 2003). Online consumers tend to desire that the online seller be willing and capable of reacting to consumer interests, to maintain honesty in transactions, and to be capable of delivering ordered goods and/or services as promised. With regard to eTrust, transactions security on the Internet has received a considerable amount of attention in theory and practice, both directly in the form of safe and accurate transfers of money or payment-credit information, as well as indirectly in the form of transaction risks–transaction costs (Liao & Cheung, 2001). According to Shon et al. (2003), the issue of online transaction security was the primary concern that persuaded customers to stay with traditional tour agents.

Many researchers have emphasized the importance of eTrust in the development of long-term relationships between businesses and customers (Gefen, 2000; Hoffman, Novak, & Peralta, 1998). The nature of the Internet makes it an almost ideal medium for transactions. The global reach of the Internet has also made trust a crucial element of eCommerce (Horton, Buck, Waterson, & Clegg, 2001). Trust is crucial in cases in which it is practically impossible to fully regulate business agreements and is, consequently, necessary to rely on one party to fulfill their obligations and not engage in opportunistic behavior (Yousafzai, Pallister, & Foxall, 2003). Trust is not only a short-term issue, but is also the most significant long-term barrier for realizing the potential of B2C eCommerce (Gefen, 2000). In addition, the analysis of trust with regard to eCommerce should be considered in regard to both firms and individuals. The technology itself, the Internet, must be an object of trust (Shankar, Urban, & Sultan, 2002) in order for AB2CEWS to prosper.

Recently, several empirical studies concerning eCommerce have attempted to evaluate trust in the context of the TAM (e.g., Corbitt et al., 2003; Gefen, 2000; Gefen et al., 2003; Pavlou, 2003). Based on a comprehensive literature review, this study integrated eTrust into the research model to focus on the inherent relationships between eTrust and the TAM' variables. Here, the perceived ease of use (Gefen et al., 2003; Koufaris & Hampton-Sosa, 2004) and perceived usefulness (Koufaris & Hampton-Sosa, 2004) appeared to be important determinants in the formation of perceived eTrust, which again influenced overall attitude (Jarvenpaa et al., 1999). Additionally, consumers' perceived eTrust in the transaction system for eCommerce in the airline industry affects their voluntary acceptance of airline B2C eCommerce, as they may want to complete transactions securely and to maintain the privacy of their personal information. As stated previously, the size of the airline industry is fairly large, and so customers can maintain a high level of trust in the settlement system and the assurance of the airline product when they consider eCommerce through Internet B2C websites. The reputation of AB2CEWS may also play a significant role in the acceptance of AB2CEWS by customers who are involved in a direct transaction with airline companies. In this study, the following hypotheses have been proposed in the context of AB2CEWS, based on the aforementioned review about the logical background of eTrust and the TAM variables:

**H9:** eTrust exerts a positive impact on attitude toward use of AB2CEWS.

**H10:** eTrust exerts a positive impact on intention to reuse AB2CEWS.

Via the logical extension of the data uncovered in our literature review, the research model used in this study was established, which incorporates the relevant constructs developed in prior studies into the comprehensive models shown in Fig. 1 (AB2CEWS

acceptance model). The research model adopted the relationship proposed in the original TAM (Davis, 1986): “beliefs (i.e., perceived ease of use and perceived usefulness) → attitude → behavioral intention”; coupled with the roles of *subjective norms* and *eTrust* in terms of the acceptance of AB2CEWS. The 10 resultant hypotheses were developed using the suggested research model.

### 3. Method

#### 3.1. Measures

In order to remain consistent with prior studies, measures were adopted or transferred from previous IT acceptance, eCommerce, online shopping, original TAM, extended TAM, and other previous studies and associated theories. The appendix provides a detailed summary of the multiple-item scales utilized in this study, which employ a multiple-item approach for the measurement of the constructs. 24 total measures were utilized in order to capture the various latent constructs, in which responses were measured by a 5-point Likert-type scale (1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*).

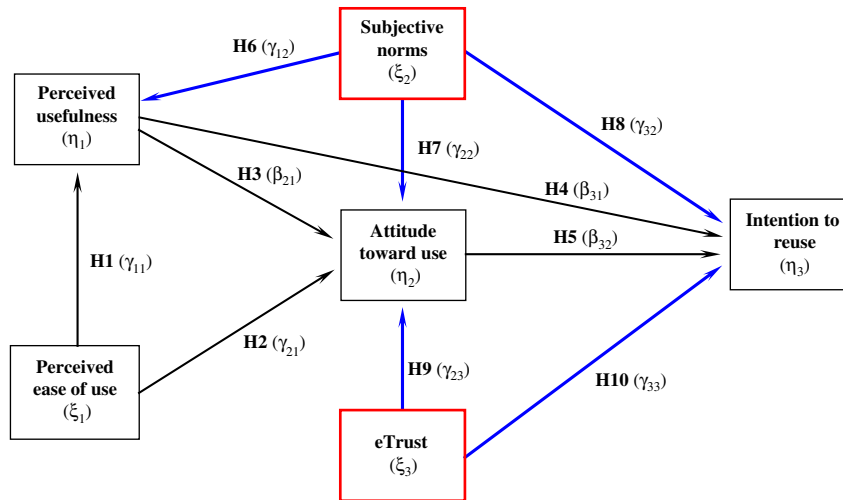
In order to validate the instrument, five Korean professors and two directors of Web marketing in Korean airline companies assessed the relevance of the instruments for AB2CEWS users. Some modifications were made to the questionnaire, on the basis of the comments collected throughout this pilot study. After the pilot study, a pre-test was conducted on 40 randomly selected subjects with experience in purchasing eTickets or other air-associated products via AB2CEWS. Feedback was acquired with regard to the length of the instrument, the format of the scales, content validity, and question clarity. On the basis of that feedback, minor modifications were performed, whereupon a final questionnaire was developed and administered to a group of 30 randomly selected AB2CEWS users. During the pre-test period, the clarity was confirmed, and no changes were made to the questionnaire. The reliability coefficients for the constructs ranged between 0.74 (perceived usefulness) and 0.93 (subjective norms), which exceeded the recommended level of 0.70 (Nunnally, 1978).

#### 3.2. Sample and data collection

The survey was administered to customers with experience in using B2C eCommerce directly from airline company websites. Experience with B2C eCommerce means that a customer purchased eTickets or other air-related products, such as Airtel Pak<sup>5</sup>, via the Internet. This study acknowledged that this type of experience might help respondents provide more reliable and valid information than would a survey in which the participants had no prior experience, and thus gave answers based solely on their own perceptions. The samples included travelers at the Incheon International Airport (IIA) who were traveling abroad with two representative South Korean airline companies. Only Korean nationals were included in this study, because foreigners may not have adequate experience with the AB2CEWS of Korean airline companies (i.e., KAL: <http://kr.koreanair.com> and ASIANA: <http://www.flyasiana.com>) or their travel-related products.

In order to identify customers who had received information regarding air-related products or air tickets and had subsequently purchased products from the AB2CEWS, the survey was administered at both the check-in counter and the special counter for

<sup>5</sup> Airtel Pak refers a kind of tour package product originally initiated by airline companies, which includes only air ticket and hotel accommodations in a destination. This may appeal to travelers who want free scheduling with reduced expense in their travel itinerary.



Note: Perceived ease of use ( $\xi_1$ ), perceived usefulness ( $\eta_1$ ), attitude toward use ( $\eta_2$ ), and intention to reuse ( $\eta_3$ ) are the original TAM (Davis, 1986)'s variables, subjective norms ( $\xi_2$ ) and eTrust ( $\xi_3$ ) are the external variables of the TAM.

Fig. 1. AB2CEWS acceptance model.

mileage customers of FFPs. In general, customers who purchased air-related products from the AB2CEWS did not possess a tangible ticket. Rather, they had eTickets which showed their flight schedules. The distribution channel of the air tickets was complex and diverse, and thus this study controlled the survey to include customers who received tickets at the airport. In this fashion, ineffective respondents were eliminated from the survey. In an effort to induce high response rates as well as reliable responses, a monetary incentive was given to the respondents. A self-administered questionnaire was utilized to collect the data.

This study utilized quota sampling, because random sampling of a substantial size was prohibitively difficult, under the research design of this study. In order to avoid a bias to any specific airline company, this study allocated 300 questionnaires to each of the airline companies. In total, 600 questionnaires were distributed to the selected samples, of which 540 (90.0%) were completed by the respondents. 495 (82.5%) questionnaires were finally adopted for further data analysis, after eliminating any questionnaires that had not been properly completed. Table 2 summarizes the descriptive statistics of the analyzed samples.

### 3.3. Data analysis

Path analysis was conducted and the path coefficients were estimated in this study via analysis of moment structures (AMOS) 4.0 (Arbuckle, 1999). Path analysis tests model paths and model fit, which allows for the simultaneous testing of a number of hypothesized causal relationships involving multiple dependent variables. This analysis method permits systematic constraints on causal relationships among variables, such that models can be tested only for the hypothesized paths (Yavas, Karatepe, Avci, & Tekinkus, 2003). In this study, path analysis was assessed in terms of overall model goodness of fit, explanatory power, and postulated casual links.

## 4. Results

### 4.1. Measurement model

The proposed research model was analyzed in two steps, such that the measurement model was initially examined and the path analysis was followed (Anderson & Gerbing, 1988; Fornell & Larcker, 1981). In order to assess the uni-dimensionality of each

scale, both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), coupled with reliability analysis, were employed in this study (Table 3). Here, the reliability test was utilized in order to verify the consistency of the measurement scale for each construct, and to purify the results via a reliability coefficient. The coefficients of Cronbach's alpha for 6 constructs were in excess of 0.70, ranging from 0.79 to 0.95, which are acceptable for the study (Nunnally, 1978). It should be noted that one item (PEOU2) measuring for the perceived ease of use was dropped, owing to its weak contribution to the aiming construct with a low squared multiple correlation (SMC) (below 0.40) (Bollen, 1989). The results of the EFA for the remaining items supported the

Table 2  
Characteristics of the respondents

Characteristics	Frequency (N = 495)	
	N	%
<i>Gender</i>		
Male	302	61.0
Female	193	39.0
<i>Age</i>		
Less than 30	166	33.5
30–39	192	38.8
40 or older	137	27.7
<i>Education level</i>		
2-Year college or below	190	38.4
University graduate	206	41.6
Graduate school	99	20.0
<i>Occupation</i>		
Self-employed or proprietor	73	14.7
Administrative or clerical	168	33.9
Professional	87	17.6
Service employee	51	10.3
Student	49	9.9
Homemaker	46	9.3
Others	21	4.2
<i>Monthly income (US\$)</i>		
Less than \$2000	134	27.0
\$2000–\$2999	175	35.4
\$3000–\$3999	77	15.6
\$4000–\$4999	58	11.7
\$5000 or more	51	10.3

**Table 3**  
Assessments of measurement model

Constructs and measurement items	Standardized loadings	CRs	AVE	CCR	SMCs	$\alpha$	Factor loadings
Subjective norms (SN; $\xi_2$ )			0.90	0.96		0.95	
SN1	0.89	36.61			0.82		0.94
SN2	0.93	50.38			0.95		0.94
SN3	0.95	–			0.90		0.96
eTrust (ET; $\xi_3$ )			0.57	0.89		0.80	
ET1	0.61	18.52			0.47		0.88
ET2	0.67	19.84			0.54		0.48
ET3	0.78	22.58			0.70		0.57
ET4	0.89	–			0.77		0.76
ET5	0.65	19.04			0.53		0.90
ET6	0.58	15.62			0.44		0.70
Perceived ease of use (PEOU; $\xi_1$ )			0.63	0.89		0.80	
PEOU1	0.57	8.96			0.53		0.79
PEOU2 <sup>a</sup>	0.41	7.64			0.32		0.83
PEOU3	0.72	15.47			0.67		0.72
PEOU4	0.78	–			0.81		0.74
Perceived usefulness (PU; $\eta_1$ )			0.68	0.92		0.79	
PU1	0.79	16.92			0.65		0.82
PU2	0.78	15.75			0.63		0.79
PU3	0.81	17.43			0.80		0.68
PU4	0.86	–			0.83		0.72
Attitude toward use (ATU; $\eta_2$ )			0.79	0.96		0.88	
ATU1	0.81	–			0.67		0.85
ATU2	0.79	18.96			0.65		0.85
ATU3	0.75	17.60			0.59		0.83
ATU4	0.78	18.05			0.63		0.84
Intention to reuse (ITR; $\eta_3$ )			0.89	0.97		0.86	
ITR1	0.81	17.42			0.68		0.86
ITR2	0.84	–			0.72		0.89
ITR3	0.68	16.10			0.49		0.82
<i>Model fit statistics</i>							
$\chi^2$	975.47						
df	342						
Normed $\chi^2$	2.85						
GFI	0.91						
RMSEA	0.06						
AGFI	0.87						
NFI	0.90						
TLI	0.89						
CFI	0.94						

Note: All construct items were measured on a 5-point Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree). All standardized loadings are significant at the 0.01 level or better. All composite reliability estimates are above the 0.70 cutoff value and all AVEs are above the 0.50 cutoff value. GFI = goodness of fit index; RMSEA = root mean square error of approximation; AGFI = adjusted goodness of fit index; NFI = normed fit index; TLI = Tucker–Lewis index; CFI = comparative fit index; CR = critical ratio; SMC = squared multiple correlation; AVE = average variance extracted; CCR = composite construct reliability.  $AVE = (\sum \text{squared standardized loadings}) / (\sum \text{squared standardized loadings}) + (\sum \text{indicator measurement error})$ ;  $CCR = (\sum \text{standardized loadings})^2 / (\sum \text{standardized loadings})^2 + (\sum \text{indicator measurement error})$ .

<sup>a</sup> The item was deleted after validity test.

uni-dimensionality of each construct, such that the scales in the construct were loaded highly on a single factor. All scales employed in this study were verified by acceptable reliability, as all coefficient alphas for the constructs were in excess of 0.70. The overall confirmation of measurement quality was assessed via CFA (Anderson & Gerbing, 1988). Although measurement quality can occasionally be assessed on a factor-by-factor basis, each multiple-item construct was considered simultaneously to provide for the whole test of convergent and discriminant validity.

The results of the CFA indicate that all standardized loadings exceeded 0.57 and each indicator's critical ratio ( $CR = t$ ) value exceeded 8.96 ( $p < 0.01$ ). With regard to the goodness of fit of the model, the  $\chi^2$  statistic was 975.47 with 342 degrees of freedom ( $p < 0.01$ ). The normed  $\chi^2$  was 2.85, the goodness of fit index (GFI) was 0.91, the root mean square error of approximation (RMSEA) was 0.06, the adjusted goodness of fit index (AGFI) was 0.87, the normalized fit index (NFI) was 0.90, the Tucker–Lewis index (TLI) was 0.89, and the comparative fit index (CFI) was 0.94. All these statistics supported the overall measurement quality for the constructs utilized in this study (Anderson & Gerbing, 1988). Additionally, the composite construct reliability (CCR) and the average variance extracted (AVE), as presented by Fornell and Larcker (1981), were calculated in order to determine whether the measurement variable was representative of the related construct. In Table 3, all AVEs were 0.57 or higher, and exceeded the cutoff value of 0.50 (Fornell & Larcker, 1981), and all CCRs were 0.89 or higher and exceeded the cutoff value of 0.70 (Fornell & Larcker, 1981). These results supported the convergent validity of each of the constructs involved in the research model of this study.

The evidence of discriminant validity can be demonstrated when measures of conceptually different constructs are not strongly correlated among themselves as compared to similar constructs. In order to evaluate the discriminant validity, the square root of the AVE in each construct is compared with the correlation coefficients between two constructs (Fornell & Larcker, 1981). One pair of scales between perceived ease of use and eTrust appeared to evidence a high correlation ( $\phi = 0.55$ ) (Table 4), where the variances extracted for both constructs were 0.63 and 0.57, respectively (Table 3). This indicates that discriminant validity was achieved, as the two variances were greater than the square of the correlation coefficients ( $\phi^2 = 0.30$ ), which confirms that the measures evidence acceptable levels of discriminant validity.

#### 4.2. Path analysis and hypotheses testing

Path analysis was conducted in order to evaluate the relationship between the dependent variable of the intention to reuse AB2CEWS and the respective predictor variables of subjective norms, eTrust, perceived ease of use, perceived usefulness, and attitude toward use. The hypothesized relationships in the proposed research model were simultaneously tested via path analysis, and the results are depicted in Table 5 and Fig. 2. The goodness of fit statistics from the path analysis showed that the model reasonably fits the data. The overall fit of the model appeared to be acceptable with  $\chi^2 = 13.57$ ,  $df = 5$ ,

**Table 4**  
Correlation estimates, constructs means and standardized deviations

Constructs	Number of items	M	SD	SN	ET	PEOU	PU	ATU	ITR
Subjective norms (SN; $\xi_2$ )	3	2.17	0.88	1.00					
eTrust (ET; $\xi_3$ )	6	3.30	0.42	0.20	1.00				
Perceived ease of use (PEOU; $\xi_1$ )	3	2.84	0.39	0.25	0.55	1.00			
Perceived usefulness (PU; $\eta_1$ )	4	3.45	0.46	0.30	0.49	0.49	1.00		
Attitude toward use (ATU; $\eta_2$ )	4	3.36	0.51	0.09	0.48	0.39	0.39	1.00	
Intention to reuse (ITR; $\eta_3$ )	3	3.33	0.69	0.10	0.41	0.40	0.49	0.49	1.00

Note: All constructs items were measured on a 5-point Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree). All correlations are significant at the 0.01 level.

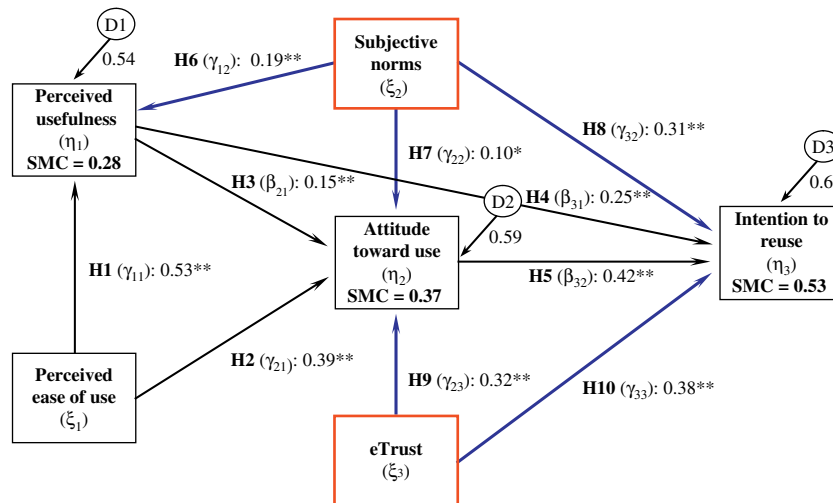
**Table 5**  
Results of path analysis and hypotheses testing

Paths	Hypotheses testing	Direct effects	Indirect effects	
			Attitude towards use	Intention to reuse
H1 ( $\gamma_{11}$ ): Perceived ease of use ( $\xi_1$ ) → perceived usefulness ( $\eta_1$ )	Supported	0.53 (11.46)**		
H2 ( $\gamma_{21}$ ): Perceived ease of use ( $\xi_1$ ) → attitude toward use ( $\eta_2$ )	Supported	0.39 (6.52)**	0.18	
H3 ( $\beta_{21}$ ): Perceived usefulness ( $\eta_1$ ) → attitude toward use ( $\eta_2$ )	Supported	0.15 (2.86)**		
H4 ( $\beta_{31}$ ): Perceived usefulness ( $\eta_1$ ) → intention to reuse ( $\eta_3$ )	Supported	0.25 (3.73)**		0.23
H5 ( $\beta_{32}$ ): Attitude towards use ( $\eta_2$ ) → intention to reuse ( $\eta_3$ )	Supported	0.42 (7.64)**		
H6 ( $\gamma_{12}$ ): Subjective norms ( $\xi_2$ ) → perceived usefulness ( $\eta_1$ )	Supported	0.19 (4.82)**		
H7 ( $\gamma_{22}$ ): Subjective norms ( $\xi_2$ ) → attitude toward use ( $\eta_2$ )	Supported	0.10 (2.14)*	0.03	
H8 ( $\gamma_{32}$ ): Subjective norms ( $\xi_2$ ) → intention to reuse ( $\eta_3$ )	Supported	0.31 (5.92)**		0.07
H9 ( $\gamma_{23}$ ): eTrust ( $\xi_3$ ) → attitude toward use ( $\eta_2$ )	Supported	0.32 (5.52)**		
H10 ( $\gamma_{33}$ ): eTrust ( $\xi_3$ ) → intention to reuse ( $\eta_3$ )	Supported	0.38 (5.09)**		0.19
Perceived ease of use ( $\xi_1$ ) → intention to reuse ( $\eta_3$ )				0.22
<i>Model fit statistics</i>				
$\chi^2$		13.57		
df		5		
Normed $\chi^2$		2.71		
GFI		0.95		
RMSEA		0.07		
AGFI		0.89		
NFI		0.94		
TLI		0.92		
CFI		0.98		
<i>Explanatory power (<math>R^2</math>)</i>				
SMC perceived usefulness ( $\eta_1$ )		0.28		
SMC attitude toward use ( $\eta_2$ )		0.37		
SMC intention to reuse ( $\eta_3$ )		0.53		

Note: GFI = goodness of fit index; RMSEA = root mean square error of approximation; AGFI = adjusted goodness of fit index; NFI = normed fit index; TLI = Tucker-Lewis index; CFI = comparative fit index; SMC = squared multiple correlation ( $R^2$ ). \*  $p < 0.05$ . \*\*  $p < 0.01$ .

normed  $\chi^2 = 2.71$ , GFI = 0.95, RMSEA = 0.07, AGFI = 0.89, NFI = 0.94, TLI = 0.92, and CFI = 0.98. The results of the multivariate test of the path model indicate that the model as a whole explains 28% (SMC = 0.28) of the variance in the perceived usefulness. The explained variance in attitude toward use and intention to reuse was 37% (SMC = 0.37) and 53% (SMC = 0.53), respectively (Fig. 2).

Within the model, the estimates of the structural coefficients provide the fundamental tests of the hypothesized causal relationships. The effects of perceived ease of use on perceived usefulness and attitude toward use of AB2CEWS were initially addressed. The expected relationship between perceived ease of use and perceived usefulness (H1;  $\gamma_{11} = 0.53$ , CR = 11.46,  $p < 0.01$ ) as well as attitude toward use of AB2CEWS (H2;  $\gamma_{21} = 0.39$ ,



Model fit statistics:  $\chi^2 = 13.57$ ,  $df = 5$ , normed  $\chi^2 = 2.71$ , GFI = 0.95, RMSEA = 0.07, AGFI = 0.89, NFI = 0.94, TLI = 0.92, CFI = 0.98.

Note: Perceived ease of use ( $\xi_1$ ), perceived usefulness ( $\eta_1$ ), attitude toward use ( $\eta_2$ ), and intention to reuse ( $\eta_3$ ) are the original TAM (Davis, 1986)'s variables, subjective norms ( $\xi_2$ ) and eTrust ( $\xi_3$ ) are the external variables of the TAM. GFI = goodness of fit index; RMSEA = root mean square error of approximation; AGFI = adjusted goodness of fit index; NFI = normed fit index; TLI = Tucker-Lewis index; CFI = comparative fit index; SMC = squared multiple correlation ( $R^2$ ). \*  $p < 0.05$ . \*\*  $p < 0.01$ .

Fig. 2. Relational structure of subjective norms and eTrust effects in the AB2CEWS acceptance model.



CR = 6.52,  $p < 0.01$ ) were supported by the path coefficients, all of which supported by H1 and H2. It is noteworthy that the effect of perceived ease of use on perceived usefulness is more profound than that of attitude toward use of AB2CEWS. H3 and H4 postulated that perceived usefulness would increase attitude toward use and intention to reuse AB2CEWS. The results of path analysis indicate that perceived usefulness increases attitude toward use (H3;  $\beta_{21} = 0.15$ , CR = 2.86,  $p < 0.01$ ) and intention to reuse AB2CEWS (H4;  $\beta_{31} = 0.25$ , CR = 3.73,  $p < 0.01$ ). These notions also support H3 and H4. H5 presumes that attitude toward use is associated positively with intention to reuse AB2CEWS. The path coefficient of attitude toward use with intention to reuse AB2CEWS (H5;  $\beta_{32} = 0.42$ , CR = 7.64,  $p < 0.01$ ) was both significant and positive, thus confirming H5.

In the relationships between the subjective norms and the TAM' variables, subjective norms were determined to exert significant and positive effects on perceived usefulness (H6;  $\gamma_{12} = 0.19$ , CR = 4.82,  $p < 0.01$ ), attitude toward use (H7;  $\gamma_{22} = 0.10$ , CR = 2.14,  $p < 0.05$ ), and intention to reuse AB2CEWS (H8;  $\gamma_{32} = 0.31$ , CR = 5.92,  $p < 0.01$ ). Thus, H6, H7, and H8 were also supported. Finally, we attempted to determine whether eTrust is positively associated with attitude toward use and intention to reuse AB2CEWS. As hypothesized, the estimates of path coefficients of eTrust on attitude toward use (H9;  $\gamma_{23} = 0.32$ , CR = 5.52) and intention to reuse AB2CEWS (H10;  $\gamma_{33} = 0.38$ , CR = 5.09) were positive and statistically significant at the level of  $p < 0.01$ , which provided support for H9 and H10.

#### 4.3. Direct and indirect effects

This study further evaluated the direct and indirect effects subsumed in the proposed research model to acquire deeper scrutiny into the process of intention to reuse AB2CEWS (Table 5). Perceived ease of use (0.18) appeared to positively influence attitude toward use, via perceived usefulness of AB2CEWS. The direct effect of perceived usefulness on intention to reuse (H4) appeared to be significant (0.25), and the indirect effect via attitude toward use of AB2CEWS was apparent (0.23). These results imply that attitude toward use can function as an important mediating variable between perceived usefulness and intention to reuse AB2CEWS.

The indirect effects of subjective norms (0.03) on attitude toward use via perceived usefulness and that of subjective norms (0.07) on intention to reuse via perceived usefulness and attitude toward use of AB2CEWS were determined to be rather weak. The direct effect of eTrust on intention to reuse (H10), however, appeared to be significant (0.38), and the indirect effect via attitude toward use of AB2CEWS was apparent (0.19). Our results indicate that attitude toward use can be a relevant mediating variable between eTrust and intention to reuse AB2CEWS. The results further suggest that perceived ease of use (0.22) exerted positive effects on intention to reuse via perceived usefulness and attitude toward use of AB2CEWS. One possible managerial implication for airline marketers is that both perceived usefulness and attitude toward use function as salient mediating variables between perceived ease of use and intention to reuse AB2CEWS.

## 5. Discussion and suggestions

This study contributes to the theoretical development explaining customers' acceptance behavior of AB2CEWS. The results of the study provide practical implications for marketing managers and practitioners who prepare strategic plans and implement effective tools to improve the productivity or performance of airline B2C eCommerce through sites like AB2CEWS.

In this study, we have assessed the impacts of customers' perceptions and beliefs on AB2CEWS, together with an exploration

of customers' intention to reuse given AB2CEWS by employing Davis's (1986) TAM. External variables including subjective norms and eTrust were incorporated into the research model of this study. All hypothesized causal relationships were supported by the empirical results of path analysis. The major findings were that two beliefs (i.e., perceived ease of use and perceived usefulness) and attitude toward the use of AB2CEWS are predictors of customers' behavioral intention to reuse AB2CEWS, and subjective norms and eTrust are both significant and meaningful in the customers' acceptance of AB2CEWS.

Our findings indicate that perceived ease of use is a strong predictor of customers' perceived usefulness of AB2CEWS, which is consistent with the results of previous studies (e.g., Chen et al., 2002; Huh et al., *in press*; Kim et al., 2008; Morosan & Jeong, 2008; Taylor & Todd, 1995; Wöber & Gretzel, 2000). This implies that the more belief and trust customers have in the use of AB2CEWS, the more likely the customers will view the AB2CEWS as useful. The AB2CEWS of major airline companies (i.e., KAL and ASIANA) in South Korea should be made more effective and efficient by allowing customers to easily confirm and compare air schedules and fares. These AB2CEWS provide not only travel information, but also offer necessary information regarding tourist destinations around the globe in a timely manner. This again implies that future sales for airline companies over the Internet will increase significantly, particularly when one considers that Internet usage in South Korea is quite high.

With regard to perceived ease of use, perceived usefulness, and customers' attitude toward the use of AB2CEWS, our findings indicate that perceived ease of use has a more profound effect on attitude toward use than that of customers' perceived usefulness. This shows that customers of AB2CEWS tend to focus on ease of use of AB2CEWS rather than usefulness in the formation of a positive attitude toward use. This contradicts the results of other studies (Adams et al., 1992; Agarwal & Prasad, 1997), which claimed that perceived ease of use exerted no direct effect on attitude toward use. In those studies, perceived ease of use was determined to have an indirect effect on users' attitude toward use via perceived usefulness. This implies that if customers consider AB2CEWS to require no added effort or to require less transaction effort, more users will take the opportunity to redirect unused effort by purchasing products or services via AB2CEWS. Nowadays, customers can easily obtain information regarding air-related products through the websites of their local airlines, and thus more individualized and differentiated services, including FFPs, itinerary management, and airfare calculation, have become possible customer alternatives. This experience from transactions involving AB2CEWS differs substantially from those of conventional distribution channels. It is expected that customers would have a positive attitude toward the use of AB2CEWS, as the opportunity cost of purchasing air-related products increases. Thus, marketing strategies targeted toward the establishment of more favorable customer judgments can be quite effective for the majority of airline B2C eCommerce marketers.

In accordance with the results reported in previous studies (e.g., Chen et al., 2002; Davis et al., 1989), the path analysis technique utilized in this study demonstrated that perceived usefulness is associated positively with attitude toward use and intention to reuse AB2CEWS. The results of this study show that attitude toward use profoundly affects customers' intention to reuse AB2CEWS. This implies that the benefits of air-related products purchased from AB2CEWS, including the use of eTickets, seat reservations prior to check-in, and the use of mileage, exert positive impacts on attitude toward use and intention to reuse. It can be noted here that airline companies should be encouraged to create loyal customers by developing AB2CEWS focusing on various programs and events related to air and travel culture, rather than via a marketing strategy that emphasizes sales prices.

This study is backed by empirical proof. Subjective norms are the antecedent of perceived usefulness, attitude toward use, and customers' intention to reuse AB2CEWS. This result is consistent with that of Venkatesh and Davis (2000), who suggested that subjective norms exert a direct effect on perceived usefulness. The result of this study also coincides with the results of the study conducted by Buttle and Bok (1996), Taylor and Todd (1995), and Yi et al. (2006), who suggested that subjective norms are an important determinant of perceived usefulness, attitude, and intention. This implies that customers who frequently shop and purchase air-related products from websites of airline companies tend to rely heavily on referents when they make purchases. Airline companies should turn their attention to referents as they lead and affect customers' purchasing behavior, by developing more target-oriented air products, related package programs, and sales promotion events.

eTrust is a predictor of attitude toward use and customers' intention to reuse AB2CEWS (Gefen, 2000; Gefen & Straub, 2003; Jarvenpaa et al., 1999). In addition, eTrust was demonstrated to influence intention to reuse via the mediating variable of attitude toward use. It is worthy of note that eTrust exerts a more profound effect on attitude toward use than perceived usefulness and subjective norms. This implies that airlines' eCommerce services should depend not only on the operational characteristics of their AB2CEWS, their perceived ease of use and perceived usefulness, but also on eTrust towards AB2CEWS. Hence, airline marketers must consider how they may enhance customer trust when planning and developing AB2CEWS (Gefen & Straub, 2003).

In South Korea, customers' trust of eCommerce for airline companies can be influenced by the reputation and trust of the parent company; that is, parent companies can positively influence customer attitude related to use and intention to reuse. This lowers the risk inherent to the purchase of air products from AB2CEWS. Therefore, airline companies should more aggressively employ their AB2CEWS as a marketing tool. In order to more effectively satisfy customer needs and to appropriately fulfill their roles as new distribution channels, airline companies should address the problems associated with the management of air products, including the maintenance of personal information, assured safety of the settlement system, various airfare regulations, and appropriate revenue management.

In conclusion, it should be noted that customers' proposed intention to reuse is evoked by customers' various perceptions and beliefs regarding AB2CEWS. The variety of features and functions of AB2CEWS should be elucidated and emphasized in advance to customers, in accordance with each organization's unique business situation. On the basis of customers' feedback and comments, website managers will be able to find AB2CEWS more suitable for their own business characteristics and market environments. Practitioners of AB2CEWS should understand customers' demand for their websites and should offer more customized features on the basis of the specific needs of customers. This suggestion further underlines a need to take a proactive approach in involving users in the evaluation and adoption process of AB2CEWS. The customers' evaluation of given AB2CEWS should be a necessary condition for the final design of the AB2CEWS. Airline marketers should prove to be able to significantly influence customers' perceptions and beliefs, based on their unique business situations and goals.

## 6. Limitations and further research directions

Despite its contributions and practical implications for marketing managers and practitioners who prepare strategic plans and implement effective tools to improve the productivity or performance of airline B2C eCommerce via AB2CEWS, this study also has several limitations, and currently unexplored research directions. First, behavioral theories, including Fishbein and Ajzen's (1975) TRA, Davis'

(1986) original TAM, Davis et al.'s (1989) extended TAM, Ajzen's (1991) TPB, and Taylor and Todd's (1995) decomposed theory of planned behavior (DTPB), focused more on the measurement of actual behavior rather than the individuals' behavioral intention, whereas in this study, much like that of Luarn and Lin (2005), focused more on the measurement of behavioral intention (i.e., intention to reuse). Although a number of studies have shown that behavioral intention is the most powerful single predictor of overt actual behavior, the behavioral intention may not truly reflect actual behavior in the future. Thus, future studies may focus on more accurate measurement of "actual reuse." These efforts would contribute to our understanding of actual acceptance behavior in a specific context.

Second, although this study assessed the roles of subjective norms and eTrust as external variables of the TAM, there is a need to search for additional variables that can improve the model's ability to predict the intention to reuse AB2CEWS more accurately. It would be reasonable to consider the perceived self-efficacy of the computer (Luarn & Lin, 2005), the perceived credibility (Luarn & Lin, 2005), perceived market orientation (Corbitt et al., 2003), web experience (Corbitt et al., 2003), or personal innovativeness (Herrero Crespo & Rodríguez Del Bosque Rodríguez, 2008; Yi et al., 2006) in order to expand the number of moderating situations and to further the current research model.

Third, the research design in this study is basically cross-sectional, that is, it measures perceptions and customers' intention to reuse AB2CEWS at a single point in time. Perceptions, however, change over time as individuals accrue experience (Luarn & Lin, 2005). This change has implications for researchers and practitioners who are interested in predicting the acceptance of customers' AB2CEWS over time. Future studies need to evaluate the validity of the research model in a long-range framework. A dynamic model or longitudinal evidence would not only help predict the beliefs (i.e., perceived ease of use and perceived usefulness) and actual behavior/behavioral intention over time, but may also enhance the understanding of the causality and interrelationships between variables (Luarn & Lin, 2005) that are important to individuals' acceptance behavior in AB2CEWS.

Finally, the investigation of the acceptance behavior of AB2CEWS on the basis of the TAM is relatively new to researchers in the context of hospitality and tourism. The findings discussed herein and the suggestions in this study must be further generalized for external validity, as they were obtained from one single study that examined a particular AB2CEWS and targeted a specific user group in South Korea. Continued research will be expected to generalize our findings and discussions, hopefully by including other industries that employ B2C eCommerce websites.

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## Appendix. Constructs and measurement items

*Perceived ease of use* [PEOU;  $\xi_1$ ; adapted form Venkatesh and Davis (2000)]

- My interaction with AB2CEWS does not require a lot of mental effort (PEOU1)
- My interaction with AB2CEWS is clear and understandable (PEOU2)
- It is easy to get AB2CEWS to do what I want it to do (PEOU3)
- It is easy to use AB2CEWS (PEOU4)

*Perceived usefulness* [PU;  $\eta_1$ ; adapted form Davis (1989) and Venkatesh and Davis (2000)]

- Using AB2CEWS would improve my performance in online transactions (PU1)
- Using AB2CEWS would improve my productivity in online transactions (PU2)

(continued on next page)

## Appendix (continued)

- Using AB2CEWS would enhance my effectiveness in online transactions (PU3)
- I think using AB2CEWS is very useful for me to engage in online transactions (PU4)

Attitude toward use [ATU;  $\eta_2$ ; adapted from Venkatesh and Davis (2000)]

- Using a AB2CEWS is a good idea (ATU1)
- I would feel that using AB2CEWS is pleasant (ATU2)
- In my opinion, it would be desirable to use AB2CEWS (ATU3)
- In my view, using AB2CEWS is a wise idea (ATU4)

Intention to reuse [ITR;  $\eta_3$ ; Taylor and Todd (1995)]

- I will reuse AB2CEWS in the future (ITR1)
- I expect to reuse AB2CEWS in the future (ITR2)
- I intend to reuse AB2CEWS in the future ( $\eta_1$ (ITR3))

Subjective norms [SN;  $\xi_2$ ; adapted Taylor and Todd (1995)]

- People who influence my behavior think that I should use AB2CEWS (SN1)
- People who are important to me think that I should use AB2CEWS (SN2)
- People whose opinions I value prefer that I should use AB2CEWS (SN3)

eTrust [ET;  $\xi_3$ ; adapted from Corbitt et al. (2003) and Gefen et al. (2003)]

- I believe that AB2CEWS have the necessary technology knowledge to carry out the online transaction (ET1)
- The chance of having a technical failure in online transactions of AB2CEWS is quite small (ET2)
- I can always predict performance of AB2CEWS from my past experience with the Website (ET3)
- I tend to relax when I am dealing with the AB2CEWS that I have had a pleasant experience with (ET4)
- I believe AB2CEWS will perform to the outmost of the customer benefit (ET5)
- AB2CEWS do demonstrate their belief in the customer is always right (ET6)

Note: All constructs items were measured on a 5-point Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree). AB2CEWS = airline B2C eCommerce websites; eTrust = electronic trust.

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