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ΠΑΡΑΓΟΝΤΑΣ**

Της

ΦΥΣΣΑΣ ΕΥΤΕΡΠΗΣ

Υποβλήθηκε ως απαιτούμενο για την απόκτηση του μεταπτυχιακού

Διπλώματος ειδίκευσης στα Πληροφορικά Συστήματα

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*ABSTRACT*

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The purpose of this study is to investigate the relative importance of website quality dimensions based on IS success model and customer perceived value in explaining customer satisfaction. The domain of our interest is the online purchase of airline tickets. Data from a survey of 290 persons, particularly students, were used to test the research model. The sample was separated to groups based on four tourist profiles (organized groups through travel agency, individual bookings through travel agency, individual bookings with organization before the trip and individual bookings without accommodation and transport reservations). The results showed that Information quality, two system quality variables (availability and usability), three service quality variables (customer support services, personalization and assurance) and perceived value are identified as significant determinants of customer satisfaction for each tourist profile, but with some exceptions. Finally, this paper discusses the implications and highlights some limitations and future research directions.

**Key words:** website quality dimensions, customer perceived value, customer satisfaction, online purchase of airline tickets, tourist profile

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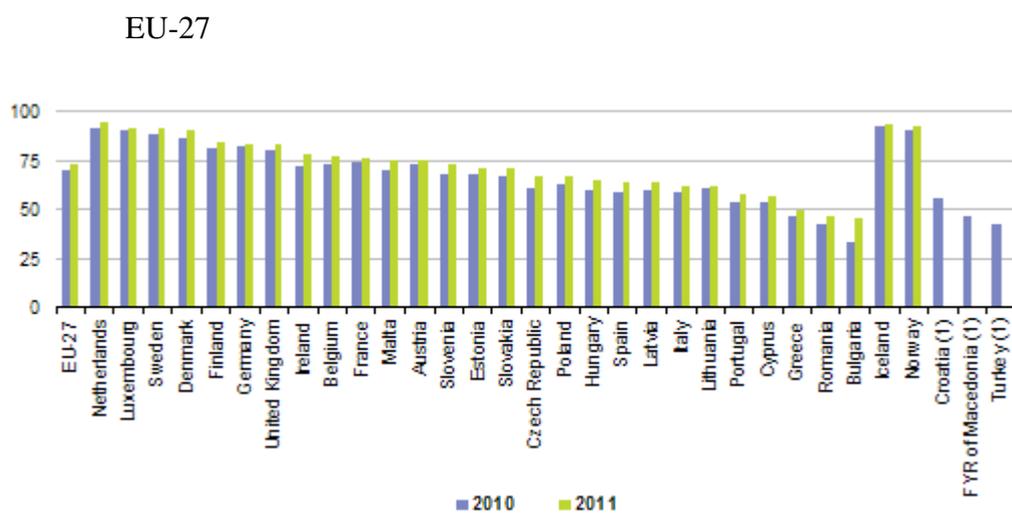
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## 1. INTRODUCTION

The Internet has become pervasive in many areas of life. The number of free Wi-Fi hotspots has been enlarged and the access to internet through mobile applications is a daily habit. Nowadays, everyone talks about the web mania, the e-business, the e-commerce and the new knowledge-based economy (Gounaris et al, 2010). The web gives the opportunity to businesses to display and sell their products or services online. On the other hand, customers can compare prices and choose what is more economic.

The below figure shows the use of Internet in European Union of 27 for households. The northwest countries of Europe marked the greatest rates in 2010 and 2011. On the other hand, Greece is posited in the countries with lower use, but the rate is being increased between these years. This finding implies the significant rise of the Greek users per years.

**Figure 1.** Internet access of households, 2010 and 2011 (% of all households),



Source: Eurostat (August, 2012)

## 1.1 E- Business and E-Commerce

The e-business is the fulfillment of a business transaction through the use of computer which is connected to a web (Kokotos & Linardatos, 2009). These transactions include the selection of product, the order, the payment, the programming delivery and the support service after sales.

The e-commerce is an important subset of e-business. It is related to the sales aspect of e-business. It also consists of the exchange of information to facilitate the payment process of business transactions (E-commerce, n.d.). As the e-commerce has been developed rapidly, online shopping has been one of the most favorite habits due to its advantages. Lower costs, more convenience, faster transaction, greater flexibility are some of them (Li et al, 2012).

It can be separated to four categories:

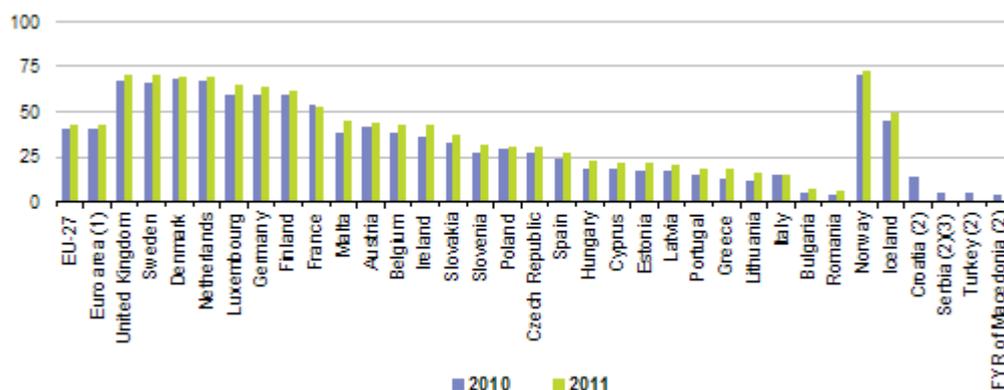
- **Business to Business (B2B):** Companies do business with each other. Pricing is based on quantity of order and is usually negotiable.
- **Business to Customer (B2C):** Companies sell to the general public typically through catalogs utilizing shopping cart software.
- **Customer to Business (C2B):** Customers can offer products and services to companies and the companies pay them
- **Customer to Customer (C2C):** It is conducted in websites offering free classifieds, auctions and forums, where individuals can buy and sell thanks to online payment systems.

(Ecommerce definition and types of ecommerce, n.d.)

In addition, G2G (Government-to-Government), G2E (Government-to-Employee), G2B (Government-to-Business), B2G (Business-to-Government), G2C (Government-to-Citizen), C2G (Citizen-to-Government) are other forms of e-commerce that involve transactions with the government. Nevertheless, it is not worthy of analyzing at this time.

However, the development of e-commerce has motivated a quick growth in online trading globally. According to Forrester Research, by 2014 online sales will be increased in the United States and the amount will reach 250\$ billion (Wu, 2013). Notably are also the findings of statistics about the individuals, who buy products online by Eurostat (August, 2012). The figure 2 represents them:

**Figure 2.** Individuals who ordered goods or services over the internet for private use by 2010 and 2011 (% of individuals aged 16 to 74)



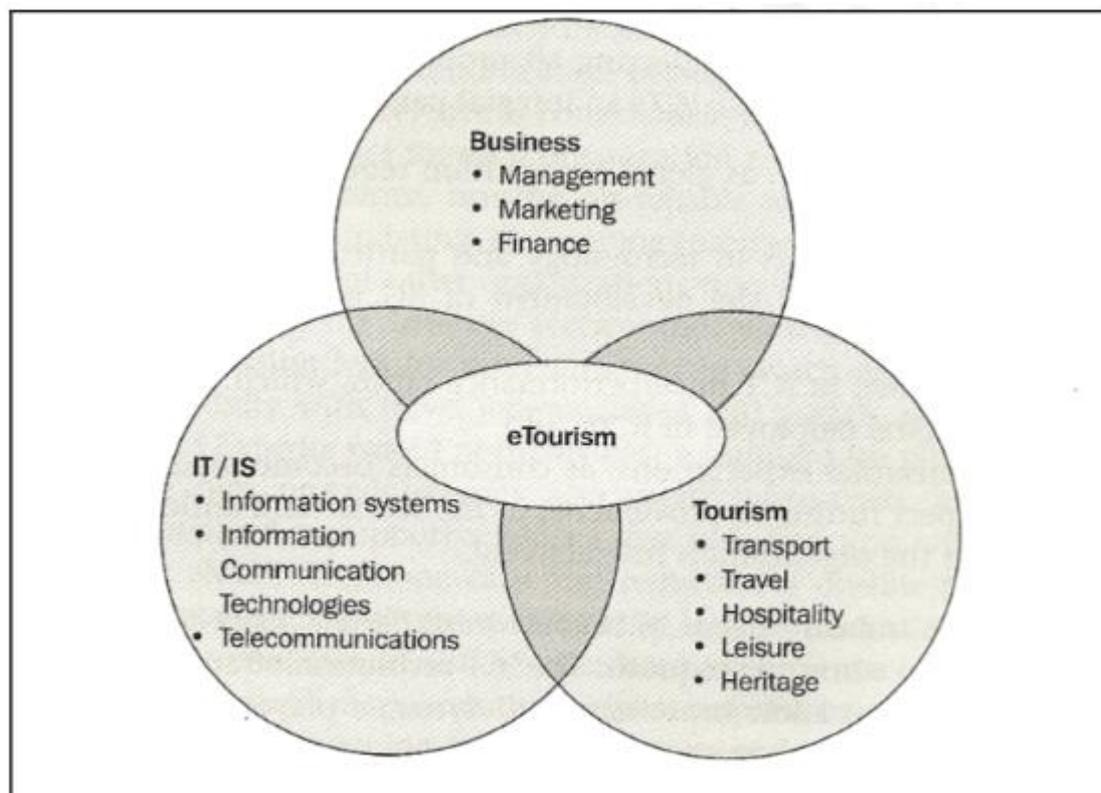
Source: Eurostat (August, 2012)

## 1.2 E-Tourism

The continuous and rapid development of the technology in combination with the use of internet has also created new opportunities for the sector of e-tourism. E-tourism is an example of e-commerce and is defined as “the digitalization of all the processes and value chains in the tourism, travel, hospitality and catering industries” (Buhalis, 2003). So, the digitalization of these basic business operations underlies an important tool for the increase of the efficacy and profits and the enrichment of the international competitive advantage (Vourdoulas, 2010).

For understanding better the concept of e-tourism, we cite the figure 3, which shows the three domains that contribute to it.

**Figure 3.** E-tourism and its areas of interest



Source: (Buhalis, 2003)

The tourist businesses, which constitute the market of e-tourism, are web-based travel agencies, airline companies, travel sources, hotels, destinations, room reservations, transports and other enterprises that combine the promotion and sale of tourist services through internet (Vourdoulas, 2010).

In order to satisfy tourism demand and survive long term in a fierce competitive e-environment, tourist businesses should provide accurate, up-to-date and relevant information and superior services, such as greater interaction and customization. Businesses can have successful customer relationship in cyberspace as well. However, the key challenge is designing a site that is attractive and interesting on the first sight, but also captivating enough to encourage repeat visits (Kassim & Abdullah, 2010).

### **1.3 Online purchase of airline tickets**

Information System Technology and Internet applications have been also used by many firms that provide low-cost airline services in order to support their marketing activities (Sam & Tahir, 2009). Firstly, they utilized the method of auction for the ensuring of the flights' completeness. The success of this method leads to the expansion of online sales across to all the tourist services. The customer has the opportunity to search airline tickets, hotels or car rental. In addition, many tourist websites have added other services, such as weather information of the destination, while the services have gradually started to become more flexible and smarter in order to adapt to the customers' preferences (Vourdoulas, 2010).

The modern travelers search and collect a lot of information before making their final decision. Most of them organize their holidays without the help of any traditional

travel agent. Generally, the users of the Internet tend to be more sophisticated and informative than before. According to a study of the International Air Transport Association (IATA) in the US, it is estimated that \$85.7 billion are spent online for airline tickets sales in 2012 (Harteveldt, 2012). The same study refers that in 2017 it is expected that 50% of online direct bookings will be made on mobile devices. This explains why the most tourist companies focus their resources on their virtual business environment (Sam & Tahir, 2009) and its elements.

In the academic literature, numerous studies have been conducted about the website quality (Bai et al., 2008). Particularly, most of the researches have been devoted to the relationship between website quality and the customer satisfaction in different domains (Sam & Tahir, 2009).

In our study we also focus on the relationship between customer satisfaction and website quality in e-tourism, but specific in the sector of online purchase of airlines tickets. It's about an e-commerce service that enables the user to buy an airline ticket easy and quickly from his computer. By this transaction customer receives cost benefits and convenience, namely customer perceived value. We review and identify which factors produce or influence customer satisfaction. In addition, we separate the users to groups depend on their tourist profile. Then, we investigate the following two research questions. First, "Which are the elements of a website that cause satisfaction depend on the tourist profile"? The latter question is, "Does customer perceived value determine satisfaction"?

The paper proceeds as follows. In the next section, we display the literature review and the theoretical background for our study developing our hypotheses and defining our research model. Then, we describe the research methodology and after

the empirical results. Finally, we conclude by discussing the findings, the implications and the limitations with the future research directions.

## 2. LITERATURE REVIEW

Many companies adopt Information System Technology in order to succeed in their business goals and obtain net benefits. The concept of IT adoption is related to the decisions in order to accept and use innovation, the full use of innovation, the implementation success, the extent of usage and the effectiveness and success of adopted IT based on acceptance of, or satisfaction of it (Ghobakhloo et al, 2012). Although, we interest more about the satisfaction that is induced to the user.

There are plenty of theories that explain or predict the successful adoption of information technology. The most important theories are the technological acceptance model (TAM), the theory of reasoned action (TRA), the theory of planned behavior (TPB) and the DeLone and McLean IS success model (D&M).

**Table 1.** Theories about the successful adoption of technology

<b>TAM</b> (Davis, 1989)	Interprets and predicts users' information technology adoption behavior, based on TRA. The two important determinants of attitude towards using are <b>perceived usefulness</b> and <b>perceived ease of use</b> .
<b>TRA</b> (Ajzen & Fishbein, 1980)	Model for the prediction of behavioral intention. It states that beliefs influence attitudes, which lead to intentions and finally to behaviors.
<b>TPB</b> (Ajken, 1991)	A theory about the link between beliefs and behavior. Its

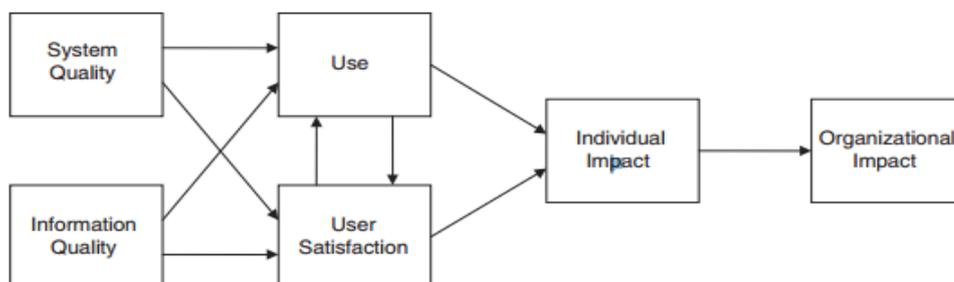
	purpose is to improve on the predictive power of TRA by including <b>perceived behavioral control</b> .
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## 2.1 D&M IS success model

However, DeLone and McLean work is assumed as major breakthrough by many authors in the field (Molla & Licker, 2001). During the last 20 years, the DeLone and the McLean IS Success Model both in its original (DeLone & McLean, 1992) and updated (DeLone & McLean, 2003) version has been used as the theoretical basis for many published articles.

The first model developed a taxonomy of IS success which was based upon the three levels of information by the Shannon and Weaver model (1949) of communications. They defined six distinct dimensions of IS success: system quality, information quality, use, user satisfaction, individual impact, and organizational Impact (Petter & McLean, 2009).

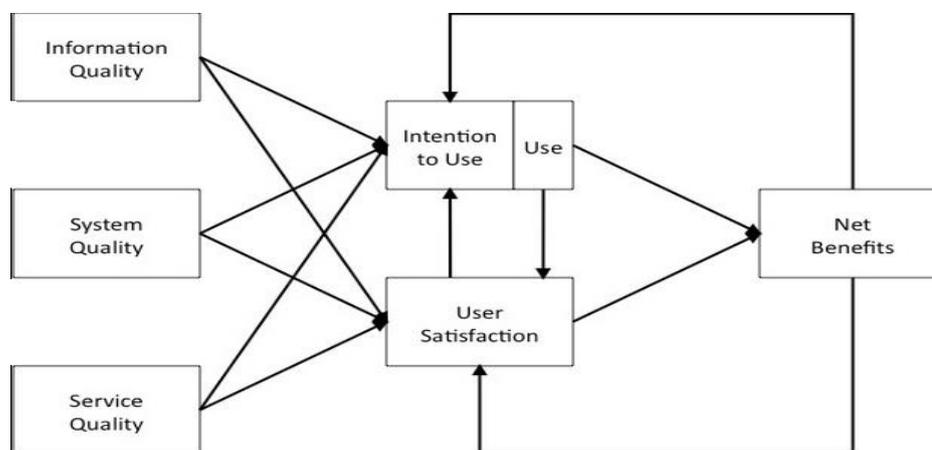
**Figure 4.** The original D&M IS success model



Source: (Petter et al, 2008)

The updated version of D&M model has published ten years later and the main additional aspect was the dimension of Service Quality. It was added due to the changing nature of IS that is required for the evaluation of IS success. Another transition was the extinction of Individual Impact and Organizational Impact as separate variables to one, Net Benefits (Petter & McLean, 2009).

**Figure 5.** The updated D&M IS success model



Source: (DeLone & McLean, 2003)

In our study about the websites related to e-tourism, we adopt the updated IS success model as our framework. We assume that a website consists of three forms of quality: System Quality, Information Quality and Service Quality, which are viewed as preconditions for the system success (Polites, et al., 2012). Every dimension of quality constitutes of its own variables and contributes to the total satisfaction of the system, when the customer uses it. The variables will be analyzed particularly in the third section of the paper.

## 2.2 Customer Satisfaction

Urbach and Müller (2011) presented in their paper an exemplary collection of studies that are classified in terms of the type of Information System (IS) in order to give an overview on existing literature on IS success. Taking a closer look at these publications, we perceive that the successful adoption of information technology is mainly defined by the level of customer's satisfaction.

The so-called customer satisfaction is not a new concept, but much broad and complex. A great number of studies have been conducted to explain both its determinants and its consequences. Marketing scholars are usually interested in the conceptualization and its links with other variable particularly in virtual environments.

For Oliver (1997) customer satisfaction means the customer's reaction to the state of fulfillment. It is related to the "customers' evaluation of a product or service which compares prepurchase expectations with the perceptions of performance during and after the consumption" (Oliver, 1980). For Westbrook and Reilly (1983, as cited in Grigoroudis & Siskos, 2009) it can be defined as an emotional response to the purchasing experience of product or service.

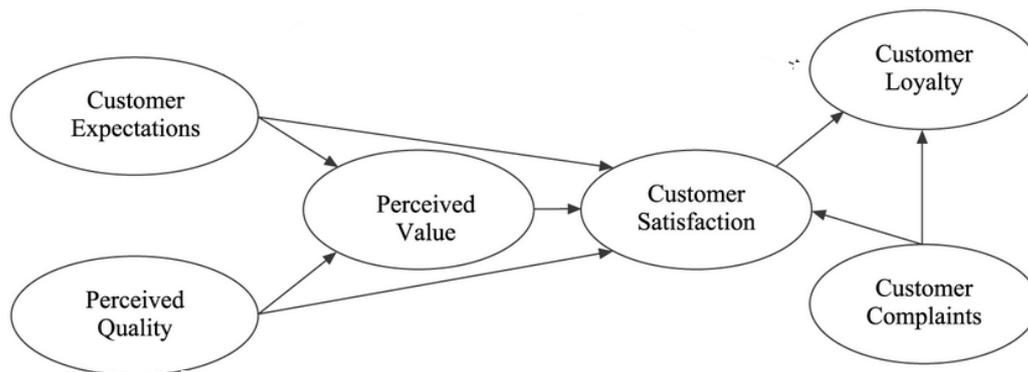
In e-commerce, customer satisfaction usually leads to favorable results, for instance improved customer retention, increased profits and positive word of mouth (Zeithaml, 2000). Studies have indicated that the likelihood of a revisit to a website is increased when the visitor has found it enjoyable (Liu & Arnett, 2000). In addition, many papers accentuated it as fundamental factor of customer loyalty (Shukla et al, 2010).

On the other hand, in the domain of e-tourism, satisfaction is determined by the initial customer's expectations for a tourist destination. They are mostly formed by advertisements, commercials, brochures, information from friends and social media. The extent to which these expectations are met could define the level of satisfaction. If the perceived performance after visiting a destination overruns or fall behind the initial expectation, then the tourist may be satisfied or not (Hapenciuc & Condratov, 2007).

Consequently, satisfied tourists would recommend tourist destinations to others and the reputation of the enterprise will be enhanced. This is the most effective and inexpensive type of marketing. Nevertheless, the overall tourist satisfaction is not only influenced by the quality of what the customer receives, but also by the cost and the perceived value of the product/service.

As perceived value, Chiou (2004) defines the customer's evaluation about the utility of a product or service based on the perception what is received and what is given. The impact of customer perceived value on satisfaction is confirmed by the ASCI (American Customer Satisfaction Index) (Fornel et al., 1996). It is about a national customer satisfaction index that attempt to measure how satisfied the customers are. As the following figure shows, the overall customer satisfaction has three antecedents: customer expectations, perceived quality and perceived value.

**Figure 6.** American Customer Satisfaction Index Model



Source: (Fornel et al, 1996)

Thus, except from the website quality dimensions we examined the relationship between customer perceived value and satisfaction in our model. In the domain of online purchasing airlines tickets, it is going to verify this relationship for the first time.

Finally, we entered another innovation in our study. We conducted a market research and took into account the characteristics and the motivation of every tourist. We separated our sample to groups depend on their tourist profile. As tourist profile, we determined the trip preparation that every tourist follows before travelling. The results will identify which elements of the website quality influence satisfaction and if the impact of perceived value on satisfaction is significant for each group.

### 3. RESEARCH MODEL AND HYPOTHESES

Chen and Wells mentioned in their paper (1999) that “The question challenging today’s entrepreneur is not whether to have a website but how to become a winner in Internet competition”. Nowadays, the most websites have a commercial purpose, for example the sale of a specific product or service. For this reason, factors related to the product are considered as salient in determining the overall customer’s satisfaction with the site. These factors are presented below.

#### 3.1 Information quality

The dimension of information quality regards the desirable characteristics of an IS’s output. Information characteristics, such as being up-to-date, accurate, useful, relevant, complete and its form (Lin, 2007). This dimension focuses on the quality of the information that a system produces and its usefulness for the user.

Based on the study of 100 papers on D&M IS success, information system has strong positive relationship with user satisfaction (Petter et al., 2008). In case of online purchasing airlines tickets, the system must present information that meets the needs of the tourist (e.g. seats availability, prices, comprehensive information about pavement etc.) easy and quickly. If a website provides adequate information in a useful and user-friendly way, it will create pleasant feelings and positive post-visit attitude (Kang & Kim, 2006). Thus, we claim:

**Hypothesis 1 (H1):** Information quality will have a positive influence in customer satisfaction

### 3.2 System quality

System quality refers to the elements of the system which induce the users when they use and interact with a system (Stockdale & Borovicka, 2006). In terms of a web-based IS, system quality determines the desired characteristics for an online retailer (Lin, 2007). Usability, ease of use, website design, reliability, availability and access are some examples of qualities evaluated by on online customers (DeLone & McLean, 2003; Bharati & Chaudhury, 2004). As we realize, it is surely a multidimensional construct and includes several dimensions. However, we can state that the most important for our study are usability and availability.

The International Organization for Standardization (ISO) defines usability as: “the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use” (Usability, n.d.). For Benbunan-Fich (2001) “usability is about the extent to which the user and the system communicate clearly without misunderstanding through the interface”. Therefore, the aspect of usability concerns the appropriate website design (aesthetics), ease of use, simple navigation system, clearly evident menus and helpful embedded links (Stockdale & Borovicka, 2006).

On the other hand, an inherent characteristic of the internet is its availability (Bauer et al., 2002), which is also a part of system quality. Availability dimension should be taken as a constant factor for the proper and permanent function of a web platform. For Cheung and Lee (2005) the absence of availability could generate dissatisfaction.

To sum up, usability and availability are significant measures of system quality that affect customer satisfaction based on D&M IS success model (Chen et al, 2013).

Then, we posit that:

**Hypothesis 2 (H2):** Usability as system quality dimension will influence positive customer satisfaction

**Hypothesis 3 (H3):** Availability as system quality dimension will influence positive customer satisfaction

### 3.3 Service quality

The dimension of service quality is new for the IS literature. It represents the quality of the support that the user receives from an IS. Another conceptual definition is the customer's overall impression of the inferiority/superiority of a service provider (Bitner, 1990). The service mainly includes elements that are offered along with the online sale of the product, for example hotlines, helpdesk, website interaction, product personalization etc. Websites related to the tourism can benefit from offering e-services, because they add value to the online shopping operation of the customer (Hapenciuc & Condratov, 2007).

In the paper of Urbach and Müller (2011) we can see that important measures of system quality are the empathy, responsiveness and assurance. As well, there is another well-known measure of service quality, the traditional SERVQUAL by Parasuraman et al (1988). It includes a set of five service quality dimensions which defines the assessment of the service quality. This set also comprises responsiveness, empathy and assurance.

As responsiveness, we refer to the ability and willingness of a company to provide prompt service when customers have questions/problems (Zeithaml et al. 2002). Thus, the customer support services can be regarded as the responsiveness dimension of service quality (Yoon, 2010). Understanding customer requirements and developing feedback services enhance customer satisfaction (Gummerus et al., 2004).

On the other hand, empathy dimension includes providing personalized attention to the customer (Sam & Tahir, 2009). Therefore, it can be understood as personalization (Zeithaml et al, 2002). The aspect of personalization constitutes of four components in e-commerce: personal attention, preferences, understanding customer's specific needs and information about the products modification (Kassim & Abdullah, 2010). If a website has the ability to tailor tourism products or services to the customer's specific needs and meets them, the satisfaction will be enhanced.

Finally, the assurance dimension concerns the security and the privacy of a system. Particularly, this dimension is related to issues, such as online transaction security and customer trust in online organization (Wang et al, 2003). How a website is credible and secure, it reflects the user's perception about it. Thus, assurance as one of the five dimensions of service quality in SEVQUAL (Parasuraman et al, 1988) has important effect in customer satisfaction.

For all of these above reasons, we state the following hypotheses:

**Hypothesis 4 (H4):** Customer support service as dimension of service quality will influence positive customer satisfaction

**Hypothesis 5 (H5):** Personalization as dimension of service quality will influence positive customer satisfaction

**Hypothesis 6 (H6):** Assurance as dimension of service quality will influence positive the customer satisfaction

### 3.4 Customer perceived value

We can consider value as a primary product attribute that is related to the quality. For Oliver (1997) value is “quality received at a particular price or outlay”. On the other hand, Chiou (2004) described perceived value as a “tradeoff between received benefit and cost” and as a customer’s evaluation about the utility of a product or service based on the perception what is received and what is given.

In our case, perceived value includes quality related to the cost of the product or service that is offered for sale on the website (Polites et al, 2012). For instance, if a customer achieves the goal of finding and purchasing an air-ticket at the lowest cost from a particular website comparing to others shopping methods, he/she will have a positive emotional reaction for this option. Otherwise, he/she is going to search different ways/websites to buy his ticket. Consequently, customer perceived value could be regarded as an antecedent of satisfaction. This relationship has been evinced by the American Customer Satisfaction Index (ASCI) and the European Customer Satisfaction Index (ECSI) (Anderson & Fornell, 2000; Martensen et al, 2000). Thus, we hypothesize:

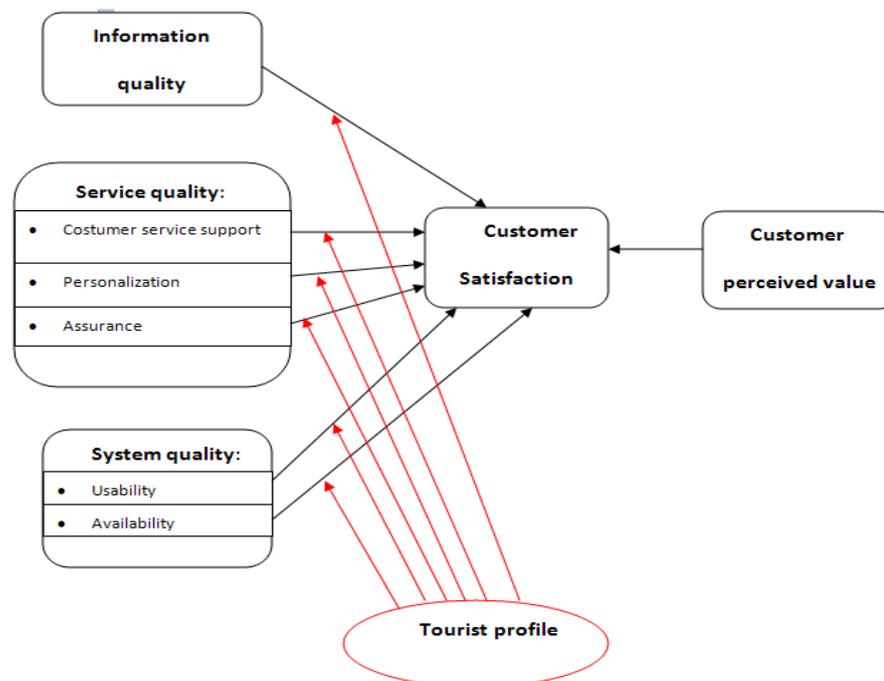
**Hypothesis 7 (H7):** Customer perceived value will have a positive influence on  
user-satisfaction

### 3.5 Tourist profile as moderating factor

Tourist profile can be considered as one of the abstract elements affecting human behavior and consequently satisfaction. A tourism market constitutes of travelers with a particular motivation to visit a destination or an attraction (Williams, 2008).

In our study we use the tourist profile as moderating factor. The tourist profile of every respondent of the questionnaire is formed based on the trip preparation that he or she follows. Thus, we have four profiles, namely organized groups through travel agencies, individual bookings through travel agencies, individual bookings with organization before the trip and individual bookings without accommodation and transport reservations. By this process, we investigate which factors of website quality affect satisfaction for each group.

**Figure 7.** Proposal research model



#### 4. METHODOLOGY

The participants in this study were 290 individuals, especially students between 20 and 26 years old from the University of Macedonia in Thessaloniki. The questionnaire included multiple choice questions and was developed in English and then translated into Greek. All items were measured on a seven point Likert-type scale with 1=not at all to 7=extremely. These items have been used extensively in many previous related studies. In the following table we present the items and their references.

**Table 2:** Measurement scales

Scale	Items
Customer Satisfaction (Bai et al, 2008; Song et al, 2012)	SAT1. I am satisfied with my decision to purchase of this site SAT2. If I had to visit again, I would feel differently about visiting travel websites SAT3. My choice to visit this site was wise one SAT4. My interaction with the site has been satisfying
Information Quality (Ho & Lee, 2007)	IQ1. Provides in-depth information for customers making purchasing decision IQ2. Information is accurate, updated and relevant IQ3. Provides url links to other related sites IQ4. Make full confirmation in online payment
Usability (Ho & Lee, 2007)	US1. Easy to maneuver US2. Easy to find wanted information US3. Quick and easy to complete a transaction US4. Search function helpful
Availability (Sabiote et al, 2012)	AV1. The site was always available AV2. The site launches and runs right away AV3. The site does not crash

	AV4. Pages on the site do not freeze after I enter my order information
Customer support services (Ho & Lee, 2007)	CSS1. Provides online consultation CSS2. Responds to users' inquires promptly CSS3. Help available when problems encountered
Personalization (Ho & Lee, 2007; Kassim & Abdullah, 2010)	PER1. The site has features personalized to users PER2. The site provides me with information and products according to my preferences PER3. The sites understands customers' needs and gives specific information
Assurance (Ho & Lee, 2007)	AS1. I feel safe in online purchasing on this site AS2. I feel secure providing sensitive information AS3. The site provides information about refunds or guaranties AS4. The site provides policies for canceling or modifying orders
Customer perceived value (Guo & Barnes, 2012; Guo & Barnes, 2009; Chen & Dubinsky, 2009; Zeitham, V., 1988)	PV1. I save more on transactions costs than other shopping methods by using this site PV2. The site generates more discounts than other shopping methods PV3. Purchasing tourism products from the site is the right choice regarding costs and expenses

## 5. DATA ANALYSIS

We used partial least-squares (PLS) analysis to measure the measurement and the structural model. Our sample exceeds the minimum recommended value, which is defined by the larger of the two following guidelines: (a) 10 times larger than the number of items for the most complex construct; (b) 10 times the largest number of independent variables impacting a dependent variable (Chin, 1998). The most complex construct of our model has four items, therefore the minimum value is 40, which is much lower than our sample of 290 individuals.

Regarding the reliability and validity of the measurement model we assessed the internal consistency, convergent validity and discriminant validity (Barclay et al, 1995; Wixon & Watson, 2001). Specifically, we measured: (1) The items' factor loadings on the corresponded constructs. Regarding factor loadings, a value higher than 0.7 is acceptable. (2) The AVE (Average Variance Extracted). AVE should be higher than 0.5 and the AVE's squared root of each variable should be larger than any correlation with every other variable (Barclay et al., 1995; Chin, 1998; Fornell & Larcker, 1981). (3) The composite reliability which should be larger than 0.7 (Agarwal & Karahanna, 2000; Compeau et al, 1999).

The structural model and hypotheses are estimated by two criteria: (1) the value of the variance measured for (R2) by the antecedent constructs. Cohen (1988) proposed 0.2, 0.13 and 0.26 as small, medium and large variance respectively; (2) the t-values regarding path coefficients and total effects measured by using bootstrapping procedure.

The analysis regarding the measurement and structural model was conducted with the SmartPLS 2.0 (Ringle et al., 2005).

## 6. RESULTS

### 6.1 Measurement Model

This subsection displays the data analysis' results regarding the measurement model. Table 3 shows that all the factor loadings of the items exceed the required value. Furthermore, the values of the composite reliability, the Cronbach  $\alpha$  and the average variance extracted regarding each variable are larger than the adequate values. In addition, Table 4 demonstrates the correlations among the variables and the AVEs which are the diagonal elements in bold. All the AVEs are higher than any other correlation; therefore the discriminant validity of the measurement model is verified.

**Table 3** : Results for the Measurement Model

Construct Items	Mean	Standard Deviation	Factor Loading ( $>0.7$ ) <sup>a</sup>	Cronbach $\alpha$ ( $>0.7$ ) <sup>a</sup>	Composite Reliability ( $>0.7$ ) <sup>a</sup>	Average variance extracted ( $>0.5$ ) <sup>a</sup>
Usability	4.83	0.63		0.94	0.96	0.89
US1			0.87			
US2			0.88			
US3			0.91			
US4			0.90			
Assurance	4.4	0.72		0.86	0.89	0.82
AS1			0.83			
AS2			0.84			
AS3			0.86			
AS4			0.87			
AS5			0.89			
AS6			0.90			
Perceived Value	4.0	1.21		0.78	0.84	0.73
PV1			0.87			
PV2			0.88			
PV3			0.79			
Information Quality	4.1	1.2		0.91	0.90	0.78
IQ1			0.91			
IQ2			0.92			
IQ3			0.88			
IQ4			0.90			
Costumer Service Support	3.88	0.76		0.91	0.94	0.85

CSS1			0.88			
CSS2			0.94			
CSS3			0.94			
Availability	4.55	0.99		0.88	0.90	0.87
AV1			0.88			
AV2			0.89			
AV3			0.90			
AV4			0.88			
AV5			0.92			
Satisfaciton	3.67	0.69		0.84	0.89	0.76
SAT1			0.78			
SAT2			0.83			
SAT3			0.85			
Personalization	2.58	1.06		0.94	0.96	0.89
PER1			0.94			
PER2			0.96			
PER3			0.94			

\*a Indicates an acceptable level of reliability and validity.

Construct	US	AS	PV	IQ	CSS	AV	SAT	PER
US	<b>0.94</b>							
AS	0.38	<b>0.90</b>						
PV	0.39	0.28	<b>0.85</b>					
IQ	0.44	0.36	0.33	<b>0.88</b>				
CSS	0.36	0.31	0.23	0.18	<b>0.92</b>			
AV	0.51	0.42	0.41	0.22	0.33	<b>0.93</b>		
SAT	0.43	0.42	0.37	0.23	0.36	0.26	<b>0.87</b>	
PER	0.23	0.18	0.32	0.21	0.52	0.61	0.55	<b>0.94</b>

Bold values: the square root of the average variance extracted (AVE) of each construct.

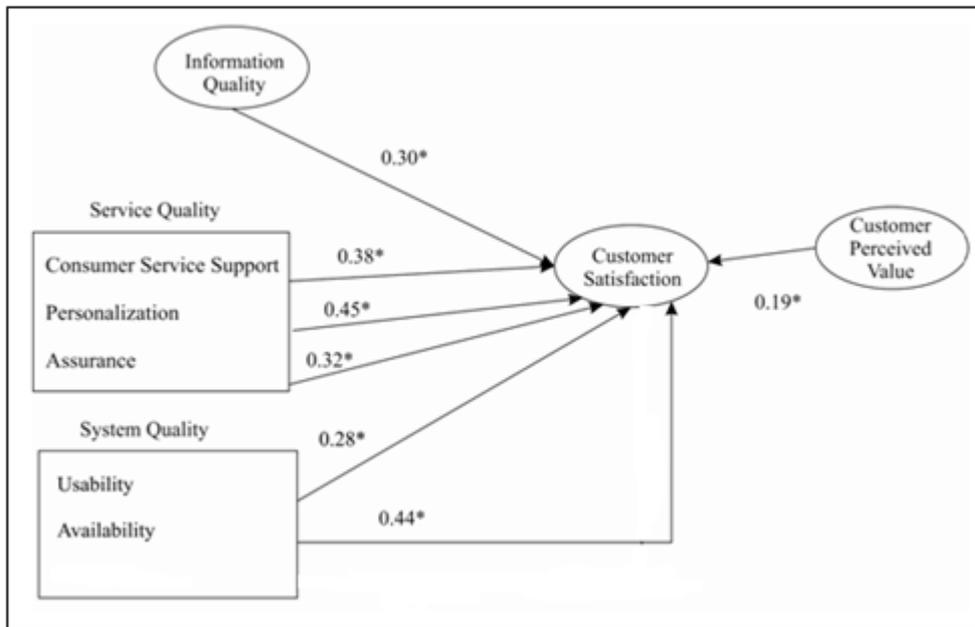
## 6.2 Structural Model

The Structural model was examined through the statistical significance of path coefficients, total effects and R2 values. T-values regarding path coefficients and total effects were measured through a bootstrap procedure with 1000 resamples. Table 5 summarizes the results regarding the hypotheses, while figure 8 displays the direct, indirect and total effects. Finally, figure 9 presents the results based on the tourist profile.

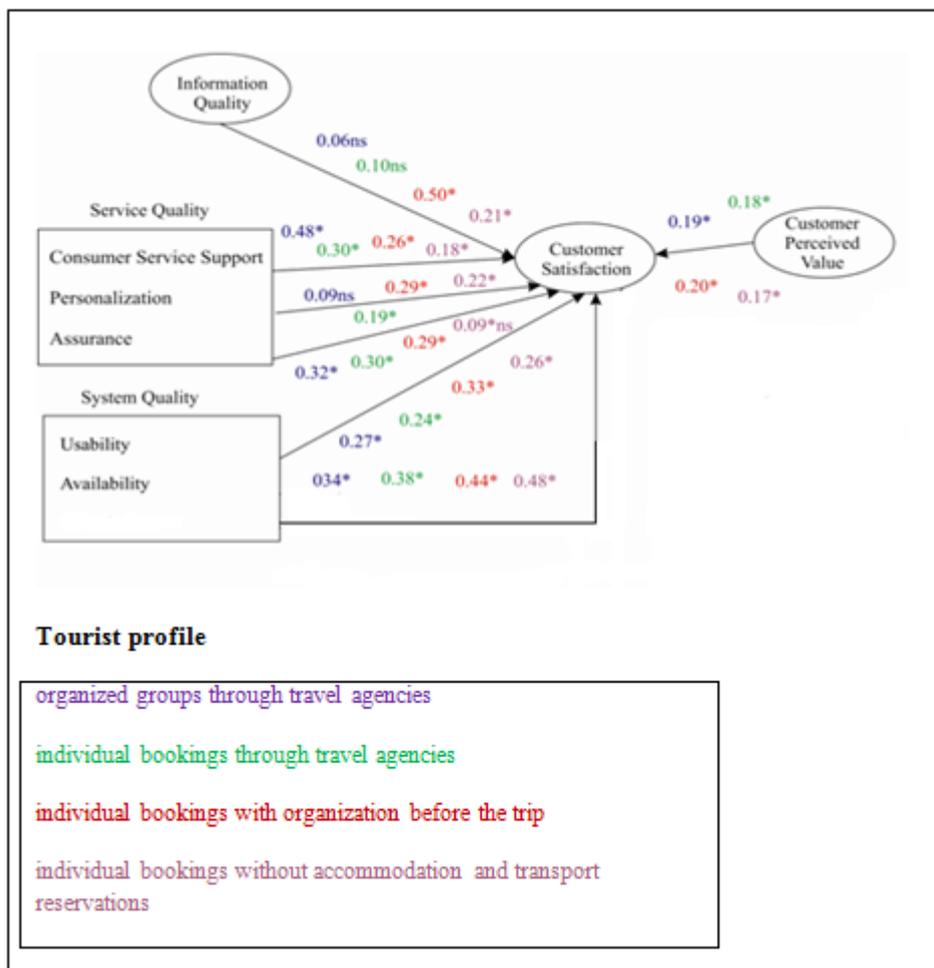
Hypothesis	Path	Path coefficient	t value	Results
H1	IQ-> SAT	0.30*	7.68	support
H2	US-> SAT	0.28*	6.83	support
H3	AV->SAT	0.44*	10.09	support
H4	CSS-> SAT	0.38*	8.8	support
H5	PER -> SAT	0.45*	10.30	support
H6	AS -> SAT	0.32*	8.1	support
H7	PV -> SAT	0.19*	3.75	support

\*p < 0.01.

**Figure 8.** Path coefficients of research model



**Figure 9.** Path coefficients of each tourist profile of the model



## **7. DISCUSSION**

### **7.1 General Theoretical implications**

E-tourism will force changes in the consumer buying habits, as the web constitutes a different shopping environment in comparison to the traditional outlets (Hoffman & Novak, 1996). For these reasons, the development of an information system creates the need to better understand how satisfied the customers are, when they use it.

The existing study has empirically examined a theoretical model of the impact of website quality dimensions on customer satisfaction in the domain of the online purchase of airline tickets. Moreover, it has been tested the influence of the customer perceived value on satisfaction, when the transaction is conducted online. The analytical results are discussed below.

Information quality was found to be significant determinant of customer satisfaction. High-quality information enables customers to limit the effort of information searching and processing. This finding is consistent with the previous research (Lin, 2007). It also implies that in order to satisfy customers' information needs, online companies should provide useful, relevant, accurate, well-formed and up-to-date information on their websites.

Of the three service quality variables examined in the research model, personalization demonstrated the strongest effect on customer satisfaction. Personalization as the empathy dimension of SERVQUAL (Zeithaml et al, 2002) is related to satisfaction. This finding means that websites should offer opportunities to specify the customer requirements in order to gratify them. Moreover, customer support service is the second important dimension of service quality that affected satisfaction, as Yoon (2010) conducted as well. It means that feedback mechanisms about the purchase process or problems during the transaction are necessary regarding

customer satisfaction. Furthermore, assurance has a relatively smaller but significant impact on customer satisfaction. This finding might be caused by the fact that customers have always concerns about their online transaction due to the lack of regulation on Internet. As the number of online customers increases, anxiety and worries about the privacy of personal information and security of transactions will be expressed (Than & Grandon, 2002).

Consistent with the hypothesis, both system quality variables, i.e. usability and availability, can contribute to the overall satisfaction. Between them, availability demonstrated the stronger impact on it. Availability guarantees the proper and constant operation of an information system. Consequently, in case of online transaction its absence will create complaints and dissatisfaction, as Cheung and Lee (2005) confirmed in their paper. On the other hand, the finding of this study also showed that usability is associated with customer satisfaction in online purchase of airline tickets. A helpful and well-organized website is able to attract the interest of the customer and increase the satisfaction. Usability as dimension of system quality affect satisfaction, as Petter et al (2008) concluded in their paper too.

Finally, costumer perceived value is another key driver of customer satisfaction, but not so important in comparison to the above factors. This finding is consistent with Hu's research in e-commerce settings (2011), who indicated that perceived value significantly influences customer satisfaction. It implies that customers should receive exactly what is given, otherwise the negative emotions will be expressed.

## 7.2 Specific Theoretical Implications

Nevertheless, the above results have some differences between the four tourist profiles. Firstly, the path from information quality to customer satisfaction is not significant for tourists, which travel in organized groups or individually through travel agencies. This finding is reasonable, because these travelers prefer to be informed by agencies, which organize the trips rather than tourist websites.

Secondly, availability has the strongest effect of system quality on satisfaction, especially in the group of individual bookings without accommodation and transport reservations. It implies that it is necessary for persons, who have spontaneous decisions to travel without the need of housing, to be able to purchase tickets anytime they want.

In addition, usability is more significant factor in the tourist group of individual bookings with organization before the trip. It means that travelers, who prepare their trips searching related information, require more helpful and well-organized sites.

On the other hand, customer support services have the most important impact of service quality on satisfaction for each tourist profile, but especially for tourists that travel in organized groups. This finding is sensible due to the fact that trips with organized groups usually consist of above 20 persons and consequently the satisfaction of their requirements must be performed promptly.

Subsequently, assurance has significant effect on customer satisfaction for all tourist profiles except from them who make individual bookings without accommodation and transport reservations. As we stated before, these travelers characterize as spontaneous and tolerant, thereby the variable of assurance is not so important for them.

However, personalization has the smaller influence of service quality on satisfaction, but for travelers, who prefer organized groups, this influence is not significant. It is reasonable, because they choose to purchase airline tickets from a different provider, who gives them the particular consultation.

Lastly, customer perceived value contributed to the overall satisfaction but with a smaller impact for each group. The differences in this case between groups are not worthy of mentioning due to the minimum deviations.

### **7.3 Practical implications**

The findings of this study have important implications for practitioners of e-tourism by providing useful strategic insights into achieving customer satisfaction. Satisfaction is the ultimate goal when selling products or services online, as Zahedi and Song (2008) stated in their paper.

Specifically, we support that marketers should attempt to improve information quality, service quality and system quality in order to increase satisfaction. Websites related to e-tourism should provide particular and detailed information through simple but captivating user interfaces. Such a system should also guarantee for its own availability. Furthermore, tourist marketers should pay more attention both to customer support service and personalization. It would be better to separate customers to specific target groups in order to provide them flexible and effective tourism shopping processes. Lastly, websites needs to enhance their security transactions in order to gain the customer satisfaction.

Nevertheless, marketers cannot enhance satisfaction by focusing only on website quality dimensions. While continuing quality improvement efforts, they need to better evaluate the value that customer perceived from an online purchase of airline ticket. Additionally, marketers, who are trying to comprehend their customers' needs, must examine perceived value along with other variables, because it plays an important role in explaining customers' decision behavior (Oh, 1999).

## **8. LIMITATIONS AND FUTURE RESEARCH**

Although, our study provides important implications, it has some limitations. First, the most respondents were students between 18-26 years old, which use more the internet in order to buy than the olders. The sample should be more various for the best generalization of our findings. Second, the study took part only in Greece. It would be proper to be conducted in other countries as well.

Finally, for future research the study should control other variables, which can affect customer satisfaction, for example cultural features, prior experience with organization and perceived risk.

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