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# Investigating the Impact of Critical Factors on Continuance Intention towards Cross-Border Shopping Websites

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**Abstract:** With the intensification of globalization and the widespread adoption of the internet, cross-border e-commerce has become a popular way of shopping. In order to investigate the sustainable development of the cross-border online purchase intention, we propose the framework that uses electronic word of mouth, perceived value, website design quality, trust, perceived risk and the uncertainty avoidance index as the exogenous variables, which influenced the continuance intention towards cross-border shopping and was mediated by the satisfaction of the customers. The results showed: (1) Among all the suggested independent variables, electronic word of mouth, website design quality, trust and the uncertainty avoidance index significantly predicted the satisfaction of the customers; (2) Customer satisfaction towards the websites significantly predicted the continuance intention of users. A detailed explanation of the results and implications for the theoretical and managerial implications for practitioners and academic researchers in the sustainable promotion and development of e-commerce is discussed.

**Keywords:** cross-border shopping websites; continuance intention; satisfaction; cultural difference

## 1. Introduction

The intensified nature of globalization and the widespread adoption of the internet are changing the business world, and cross-border e-commerce has emerged as one of the commercial responses to these two meta-forces [1]. According to the World Trade Organization, e-commerce is defined as the sale or purchase of commodities or services via internet networks, with approaches that are specifically designed to place and receive orders [2], and cross-border e-business refers to the different transactions, payments, settlements and logistics services that are performed in the international e-commerce platform [3].

As the basis of trade globalization, e-business carries very important strategic meanings. It not only breaks the boundaries between countries and facilitates international trade, but also brings about changes to the companies and consumers, respectively. For companies, e-commerce has greatly broadened access to the international market and it opens doors to the optimal allocation of multilateral resources and the mutual benefits shared among companies. For consumers, it makes it easier to purchase commodities around the world, reduce search costs, allow them to compare the prices and quality of product, and finally make better decisions [4,5]. Moreover, according to the research conducted by McKinsey, the important feature of e-commerce in 2019 is that it may become the driving force of the next industrial revolution. Lots of developing countries are employing it as a means to

get rid of poverty. Countries such as Indonesia are witnessing e-commerce becoming the core of their economic life, with countless entrepreneurs and ordinary people finding their own work in the e-business sector.

In addition to these benefits of cross-border e-business, there also are costs. For example, compared to traditional offline shopping, consumers are not so familiar with the background information of vendors, and, therefore, they may not trust vendors. Moreover, they also need to cross language barriers, need a secure way of payment and need to acquire the cost-efficiency of parcel delivery [4,6]. Although the past few years has witnessed attempts by e-commerce companies turning toward direct contact with customers instead of relying on third parties or advertising activities, the growing business of traditional e-commerce platforms, such as Amazon and Taobao, shows that this kind of market strategy still has a long way to go. Therefore, how to achieve the sustainable promotion and development of e-commerce purchase has become an important issue in a practical sense.

With this research background, the current study is interested in the sustainable purchase behavior of consumers when cross-border online shopping. A review of extant empirical studies showed two strands that focused on sustainable continuance intention in business and informational studies. Based on a certain theoretical perspective, the first strand pays attention to the application of theory in the new context, such as the self-determined theory [7], the expectation–confirmation theory [8], the commitment–trust theory [9], the technology acceptance model, the theory of planned behavior [10], the network externalities and flow theory [11], and the gratifications theory [12]. The second strand focuses on the impact of specific factors on the sustainable promotion and development of purchases, such as legal regulations [13], consumer self-regulation [14], subjective norms about displaying information about products [15], transport/logistics [16], and returning policies [17], social capital [18], the uncertainty avoidance index [19], perceived value [20], social factors [21], task-technology fit [22], socio-technical perspective [23], culture values [24], electronic word of mouth [25], trust [26] and online ratings [27].

There are several empirical studies nowadays regarding the cross-border e-business [4,28,29] and continuance intention [11,26,30], but little is known about the factors affecting consumers' continuance intention in the cross-border e-business context. The purpose of this research is to identify and assess the factors that impact consumers' sustainable cross-border online continuance purchase intention. The current study attempts to propose a research model that integrate six exogenous variables (i.e., electronic word of mouth, website design quality, trust, perceived value, perceived risk and the uncertainty avoidance index) and an endogenous construct (i.e., continuance intention) through the mediator (i.e., consumer satisfaction) in order to better understand consumers' continuance intention in the cross-border e-commerce context.

## 2. Literature Review

### 2.1. Electronic Word of Mouth

Word of mouth (WoM) is an influential commercial tool [31]. It is defined as interpersonal communication about a brand, a good, a service or an organization [32]. Due to the exponential development of social media, Web 2.0 and digital channels (e.g., consumer review sites, weblogs and online recommendations etc.), the impact of WoM has been rapidly spread via the internet and give rise to an updated form of WoM, electronic WoM or eWoM [33], which refers to any positive or negative comments posted by the consumers about a physical product, a service or a company, which can be shared with a general public and institutions through the internet [34].

Compared to the traditional WoM, which is usually the opinions of acquaintances such as family members, friends or colleagues, eWoM could reach a wider audience. Comments in eWoM are normally made by unknown consumers [35]. Moreover, studies have investigated why social media users tend to use eWoM and have distinguished two approaches: the utilitarian approach and the hedonic motivation approach [36–38]. The former argues that due to the utility function of e-shopping, such as

convenience, information availability, product selection and customized advertisements, people tend to use eWoM and make purchasable decisions; the latter holds that the hedonic motivations, such as trend discovery, socializing, adventure and authority and status, contributed to users' social media product browsing. It also includes multiple sources of information and that it is highly organized for the readers. Because of these merits, eWoM is seen as a reliable source of information [33] and, therefore, it has more influence than the traditional WoM [39]. When making purchase decisions, consumers tend to read and evaluate its contents. For example, 91% of respondents said they would like to consult online reviews, blogs, and other user-generated information before buying a new product or service [40].

As more and more interactions are carried out on the Web, an increasing number of customers will purchase commodities based on eWoM. As a result, many empirical studies have evaluated the impact of eWoM in commerce, such as revenue increase, customer retention and purchase aspiration [31,41,42]. However, few studies checked its impact in the e-commerce cross-border context. In the current study, we aim to evaluate its influence in the cross-border context and to determine whether the findings in other contexts are still sustained in the cross-border context.

## 2.2. Perceived Value

Perceived value is widely assessed and discussed in the technology acceptance and marketing research [43] and is seen as an important competitive strategy [44]. Rooted in equity theory, it refers to the overall evaluations made by consumers towards the utility of a physical product or a service [45]. It shows the trade-off between benefits obtained and sacrifice expended. The perceived benefits refer to the advantages that users obtain from the product or service, while perceived costs refer to the sacrifices made in this process [45], such as money, time, energy and mental transaction costs [46]. The positive value will be made when the perceived benefits to the consumer overshadow the perceived costs [46].

The views on value are context dependent [47]. In other words, the components in the benefits and cost side differ depending on the specific situation [48]. In regarding to the online retailing settings, not only the product we are interested in, but also the website and the process of identifying, purchasing and receiving products contributes perceived values to the customers [47]. Therefore, perceived value is regarded as the interactive, relativistic, and preference experience of the users [49]. It is an interaction between the individual's attributes (e.g., emotions, and socio demographics, etc.) and the features of the websites (e.g., privacy, security, etc.).

## 2.3. Website Design Quality

Website quality is defined as customers' assessments of the features of the websites and is about the extent to which it meets their needs [50]. It is one of the important concepts in e-commerce [51]; understanding and evaluating customers' views of the most important aspects of the website has become a critical e-strategy for enterprises to successfully attract and keep clients [51]. Scholars argue that online shopping itself does not have any value but is a way of transaction; the best way to dig out the value of online shopping is to directly ask the users [52].

Scholars have mentioned that it is a multi-dimensional construct [53,54]. For example, in Lin's research, website quality is conceptualized using three dimensions: information quality, system quality and service quality [53]. According to the author, information quality can be used to measure the value assessed by a consumer of the output generated by a website. System quality refers to the evaluations of a website system's generic performance and can be assessed by the users' evaluation of friendliness in online shopping. Service quality is defined as customers' overall evaluations of the quality of online shopping delivery [53].

Similarly, in another work, website design is conceptualized using three components: information, navigation, and visual design. Information design describes the content by which the informative confirmation on the website can be clearly transmitted. Navigation design refers to the extent to which the website structure is well organized for the users to quickly identify their needed information.

Visual design is defined as the utilization of visual elements to help the website users better understand the information posted on the website [54].

#### 2.4. Trust

Trust is defined as the belief in something that is safe and reliable [55]. It is another important construct in the marketing research [56,57], and it matters not only in the offline context [56] but also in online settings [57]. Considering the impersonal nature of online settings, and the information asymmetry that almost makes it impossible to evaluate the product quality before purchase [6], consumers often hesitate to perform a transaction online [58]. In this case, trust plays an important role in helping consumers to deal with issues associated with online shopping, such as uncertainty and risk, and thus, reduce the transaction costs [58].

Previous researchers have noted the importance of trust in the e-commerce context [59–61]. Due to the rise in economic globalization, more and more customers tend to purchase goods from cross-border shopping websites. In this case, we are interested in whether the findings of e-commerce context are still sustained in the cross-border context.

#### 2.5. Perceived Risk

Perceived risk in online shopping settings is defined as the expected loss the customers judge when they purchase online [62]. Many scholars have recognized its importance in the user–website interaction, for the individuals' generic evaluation is based on the perceived risk [63]. The higher the risk is evaluated by the users or customers, the less likely that they will make the transaction online.

Different types of risks are involved in online transactions, which will impact consumers' purchase behavior [64]. Because of this, the perceived risks have been treated as a multidimensional construct [65]. For example, Sweeney et al. [65] argue that the perceived risks including performance risk, financial risk, and time risk are relatively associated with post-purchase evaluations [65]. Performance risk refers to the possibility of the results that are not expected and, therefore, failing to achieve the desired outcomes [66]. Financial risk describes the potential monetary loss of online purchase and its ensuing maintenance [66]. It includes the fear of being overcharged, losing money and disclosing the debit/credit card information via the internet. Time risk manifests when users spend too much time on online shopping, such as researching and making the purchase and learning how to use the website [67]; it is perceived as wasted time [68] or disutility of waiting [69].

Lots of empirical studies have utilized the perceived risk as an important factor in e-commerce and identified its impact on loyalty, decision making and purchase intentions [70–72]. In our study, we will adopt this viewpoint to understand the e-commerce and cross-border transaction context.

#### 2.6. The Uncertainty Avoidance Index

Culture drives human behavior in all different settings, and it can be used to explain how people perceive, interpret information and behave accordingly [73]. Although it could be defined at different levels, in our paper, it refers to the group-level differences that exist in the collective mind and with the differences among groups, we define the culture at national levels.

The national cultures may differ from each other on many aspects [74,75]. For example, House et al. (2004) argued that national cultural differences can be attributed to communication manners, time orientation, associations with space, the significance of rules and structures [74]. Our research mainly refers to Hofstede's dimensions of national culture, which are commonly seen in the information and business research [75].

Uncertainty avoidance is defined as the extent to which individuals in a culture feel frightened of unknown or uncertain conditions [75]. Previous research employed uncertainty avoidance as one of the important factors and has identified its impact in the commercial/e-commerce context [76,77]. For example, research showed that business in the high uncertainty-avoidance countries are less likely to employ new IT infrastructure [77], and this is not the case in the low uncertainty-avoidance culture

settings [78]. Our research goes beyond this context and determines whether uncertainty avoidance still matters in the new context.

### 2.7. Satisfaction and Continuance Intention

Proposed by Oliver [79], the expectation–confirmation theory (ECT) is an important theoretical framework to evaluate consumer satisfaction with a product or service [79]. Customer experience has an influential impact on the purchase behaviors of a product or service by explaining the relations between performance, expectations, confirmation and satisfaction. Satisfaction will be achieved if expectation prior to the purchase can be confirmed after evaluation of the benchmark of the physical product or digital service [79].

According to ECT, in consumption settings, satisfaction refers to the psychological state of customers' emotional response when their prior expectations towards the shopping experience are confirmed [80]. It is a vital concept in marketing research [81] and it is not only one of the major factors that drives consumers' e-commerce continuance intention [82], but also an important milestone to build up and maintain customers' long-term loyalty [81].

Continuance intention refers to an individual's intention to continue taking part in an activity after having previously experienced it [83]. It is an indication of customer satisfaction or loyalty [83]. Scholars have stressed the importance of understanding continued intention [84,85], and agreed that it is vital to the success of an information system [84]. Therefore, it has been empirically utilized as the endogenous factor in the case of online auctions [18], online banking [9], e-Tax [86] and e-commerce [87].

## 3. Research Methodology

### 3.1. Research Model and Hypotheses

Based on the above discussion about existing literature, a theoretical model is suggested in Figure 1, and we summarized the operational definitions for each factor (as shown in Table 1). We propose the framework that uses electronic word of mouth, perceived value, website design quality, trust, perceived risk and the uncertainty avoidance index as the exogenous variables, which influenced the continuance intention towards cross-border shopping and was mediated by the satisfaction of the users.

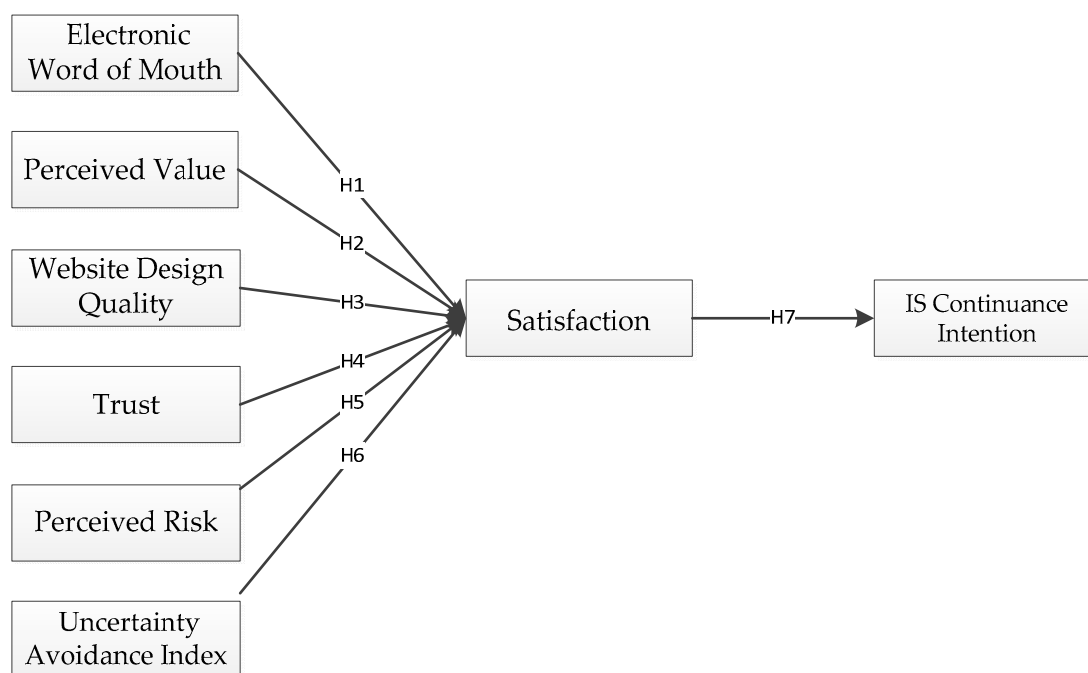


Figure 1. Research Framework.

**Table 1.** Operational definition.

Construct	Definition	Source
Electronic word of mouth	Any comments made by customers about cross-border shopping websites via the internet	Henning-Thurat et al., 2004
Perceived value	Consumers' general evaluation of the utility of cross-border shopping websites, based on their views on what is received and given	Zeithaml, 1988
Website design quality	Users' assessment of whether the features of cross-border shopping websites meet their needs and show the general excellence of cross-border shopping websites	Chang and Chen, 2008
Trust	Whether the consumers have confidence in the reliability and integrity of cross-border shopping websites they use	Jarvenpaa et al., 2004
Perceived risk	The subjectively determined views of loss by cross-border shopping website users in thinking about a particular online purchase	Forsythe and Shi, 2003
Uncertainty avoidance index	The extent to which users feel threatened by uncertain or unknown situations when they use online cross-border shopping	Geert Hofstede, 1991
Satisfaction	The degree of post-service satisfaction after using cross-border shopping websites	Bhattacharjee, 2001; Chen et al., 2013
IS continuance intention	Users' intentions of continued use of cross-border shopping websites	Bhattacharjee, 2001; Chen et al., 2013; Park, 2014

Lots of empirical studies have found that one's satisfaction towards a certain product has a positive impact on own eWoM. People tend to write down positive comments to certain products if they are satisfied with them [21,32]. But according to the expectation–confirmation theory, we could assume that one's eWoM could impact others' evaluation of certain products. The positive relationship between internet content and one's satisfaction could be observed in some empirical studies [88]. In addition, people tend to participate in e-commerce when they have utility requirements from these sites and/or they can be socially integrated in these places [36–38]. Following this logic, we could assume that the more positive prior WOM one reads, the much more satisfaction they could achieve. Based on this discussion, we propose:

**Hypothesis 1 (H1):** *Electronic word of mouth has the positive impact on satisfaction.*

Empirical studies focused on the relationships between perceived value and customer satisfaction discovered that the perceived value positively impacts customer satisfaction in most cases [45,89,90]. In regard to e-commerce, such as online shopping websites, the positive relationship between perceived value and user satisfaction could also be observed [91]. Thus, we proposed hypothesis 2 as follows:

**Hypothesis 2 (H2):** *Perceived value has a positive impact on satisfaction.*

Consumers like to shop online if the website is of a high quality. Based on the expectation–confirmation theory [79], when perceived website design quality is better than consumers' expectations, they will be satisfied with the website. Lots of empirical studies have suggested the positive relationship between the website quality and satisfaction [51,53,84]. Consequently, we propose:

**Hypothesis 3 (H3):** *Website design quality has a positive impact on satisfaction.*

Trust could reduce perceived risks and information asymmetry, and it enables customers to have confidence in their expectations [92]. The cognitive–emotive causal order [80] and social exchange



theory illuminate that trust is an important antecedent to satisfaction [93]. Dwyer et al. (1987) found a positive indirect relationship between trust and satisfaction in offline settings [94]. Previous studies have also identified its positive relationships in the online context [95,96]. We propose H4 from the above discussion:

**Hypothesis 4 (H4):** *Trust has the positive impact on satisfaction.*

According to Oliver [79], expectations have a direct influence on satisfaction evaluations [80]. Perceived risk is seen as a subjective expectation of the losses; it is also a form of expectation [97]. Lots of empirical research has found the negative linkage between perceived risk and user satisfaction [64,66,98]. Thus, we propose:

**Hypothesis 5 (H6):** *The perceived risk has a negative impact on satisfaction.*

Uncertainty avoidance measures how well individuals allow changeable and shapeless situations and contexts [75]. People from high uncertainty avoidance cultures tend to obey the traditional rules and be unwilling to adopt new ideas and technologies [75]. Online shopping is closely associated with a high level of uncertainty than shopping from a physical store, and this virtual business environment makes it difficult for consumers to check the legitimacy of the store before purchase, to protect their personal information after the shopper key in their credit card number and to ensure the product will arrive on time [99]. Empirical studies have identified the relationships between uncertainty avoidance and satisfaction [100]. Based on these discussions, we propose:

**Hypothesis 6 (H6):** *The uncertainty avoidance index has a positive impact on satisfaction.*

According to the expectation–confirmation theory (ECT), satisfaction will occur when the actual performance of the product or service is better than expected. A positive linkage between satisfaction and continued intention has been found in the contexts of e-commerce and m-service adoption [84,101,102]. Therefore, we proposed H7 to assess the in the context of cross-border e-commerce:

**Hypothesis 7 (H7):** *Satisfaction has a positive impact on continued intention.*

### 3.2. Measurement Items and Sampling

A questionnaire survey was employed to collect the data. The respondents in this study were all cross-border shopping consumers in Taiwan. The shopping websites they used include Amazon, ebay, book depository, Rakuten, Taobao, etc. The convenience sampling method was adopted, and the study used an online questionnaire to collect the data. The questionnaire was posted in the mySurvey website and the samples were collected in 45 days. The total number of filled questionnaires was 324 and after deleting those by cross-border shopping users, 302 remained. The detailed demographic characteristics of respondents are tabulated below.

## 4. Results

Partial least square structural equation modeling (PLS-SEM) using SmartPLS (v.3.2.8) [103] was utilized to assess the outer model and inner model suggested by previous suggestions of scholars [104,105]. PLS-SEM was employed for the following reasons: first, it had relaxed requirements for the variables that are not normally distributed. Second, it overcomes the multicollinearity problem. Third, it is appropriate for exploring the causal relationships between factors and addressing the model constructs and measurement items at the same time [106]. Moreover, it does well in analyzing complex prediction models and works well in a small sample size [107]. This study explores the causal relationship among six endogenous factors and two endogenous constructs. Each factor contained a

number of measurement items based on previous literature. Therefore, PLS was more suitable as the analysis method for this study.

#### 4.1. Outer Model and Scale Validation

The outer model refers to the linkage between indicators and dimensions. Factor loadings and the reliability test results of all the constructs are illustrated in Table 2. Cronbach's  $\alpha$  and the composite reliability of all constructs were above 0.7, indicating that the constructs were fairly acceptable.

**Table 2.** Sample demographics.

Characteristics	Frequency	Percent	
Gender	Female	144	47.60%
	Male	158	52.40%
Age	Under 25	61	20.20%
	26–30	51	16.89%
	31–35	104	34.44%
	36–40	47	15.56%
	Above 41	39	12.91%
Education	High school or below	18	5.96%
	Technical school	20	6.62%
	Bachelor	159	52.65%
	Master or high degree	105	34.77%
Online shopping experience	1–4 years	69	22.85%
	4–8 years	34	11.26%
	Above 8 years	199	65.89%

To validate the construct validity, the convergent validity test and the discriminant validity test were evaluated. According to the relevant criterion, the convergent validity would be satisfied if the factor loadings of the constructs are greater than 0.7, the average variance extracted (AVE) is greater than 0.5, and reliability is above 0.7 [107]. Table 3 illustrates that all constructs are above the cutoff value suggested by Fornell and Larcker (1981), indicating adequate convergent validity [108].

**Table 3.** The reliability and average variance extracted (AVE) of the outer model.

Construct	Indicators	Factor Loading	Cronbach's $\alpha$	Composite Reliability	AVE
EWOM	EWOM1	0.854	0.795	0.866	0.619
	EWOM2	0.854			
	EWOM3	0.688			
	EWOM4	0.738			
PV	PV1	0.855	0.852	0.900	0.693
	PV2	0.787			
	PV3	0.869			
	PV4	0.815			
WDQ	WDQ1	0.766	0.942	0.950	0.613
	WDQ2	0.822			
	WDQ3	0.843			
	WDQ4	0.723			
	WDQ5	0.707			
	WDQ6	0.811			
	WDQ7	0.731			



Table 3. Cont.

Construct	Indicators	Factor Loading	Cronbach's $\alpha$	Composite Reliability	AVE
	WDQ8	0.834			
	WDQ9	0.771			
	WDQ10	0.759			
	WDQ11	0.801			
	WDQ12	0.813			
	WDQ8	0.834			
	WDQ9	0.771			
	WDQ10	0.759			
	WDQ11	0.801			
	WDQ12	0.813			
TR	TR1	0.907	0.880	0.925	0.805
	TR2	0.862			
	TR3	0.920			
PR	PR2	0.778	0.956	0.960	0.671
	PR3	0.785			
	PR4	0.797			
	PR5	0.892			
	PR6	0.887			
	PR7	0.874			
	PR8	0.713			
	PR9	0.743			
	PR10	0.671			
	PR11	0.882			
	PR12	0.899			
	PR13	0.871			
NC	NC1	0.859	0.902	0.928	0.720
	NC2	0.908			
	NC3	0.736			
	NC4	0.907			
	NC5	0.821			
SAT	SAT1	0.942	0.938	0.960	0.890
	SAT2	0.952			
	SAT3	0.936			
CI	CI1	0.905	0.927	0.945	0.775
	CI2	0.918			
	CI3	0.905			
	CI4	0.894			
	CI5	0.773			

Note: EWOM = electronic word of mouth, PV = perceived value, WDQ = website design quality, TR = trust, PR = perceived risk, NC = uncertainty avoidance index, SAT = satisfaction, and CI = continuance intention.

The discriminant validity was tested by two methods: Fornell–Larcker and the heterotrait–monotrait ratio (HTMT). The Fornell–Larcker criterion result was shown in Table 4, and it would fulfill the criterion suggested by the scholars if the square root of the AVEs on the diagonals are higher than the correlations between constructs [108].

Table 4. Fornell–Larcker Criterion for discriminant validity.

	CI	EWOM	NC	PR	PV	SAT	TR	WDQ
CI	0.881							
EWOM	0.615	0.787						

Table 4. Cont.

	CI	EWOM	NC	PR	PV	SAT	TR	WDQ
NC	0.567	0.453	0.849					
PR	−0.162	−0.014	−0.077	0.819				
PV	0.576	0.600	0.498	−0.010	0.832			
SAT	0.844	0.582	0.652	−0.185	0.575	0.943		
TR	0.639	0.532	0.516	−0.289	0.579	0.690	0.897	
WDQ	0.657	0.593	0.616	−0.173	0.633	0.710	0.751	0.783

Note: EWOM = electronic word of mouth, PV = perceived value, WDQ = website design quality, TR = trust, PR = perceived risk, NC = uncertainty avoidance index, SAT = satisfaction, and CI = continuance intention.

In addition, based on the multitrait-multimethod matrix, the HTMT of correlations were performed to examine the discriminant validity. The discriminant validity criterion would be filled if the HTMT value is below 0.90 [109]. All values shown in Table 5 indicated that the discriminant validity has been ascertained, for all the HTMT values were lower than 0.90.

Table 5. Results of discriminant validity by the heterotrait–monotrait HTMT ratio.

	CI	EWOM	NC	PR	PV	SAT	TR	WDQ
CI								
EWOM	0.702							
NC	0.604	0.506						
PR	0.152	0.072	0.090					
PV	0.647	0.726	0.558	0.072				
SAT	0.896	0.656	0.699	0.180	0.639			
TR	0.693	0.625	0.552	0.296	0.660	0.747		
WDQ	0.698	0.680	0.654	0.169	0.704	0.751	0.816	

Note: EWOM = electronic word of mouth, PV = perceived value, WDQ = website design quality, TR = trust, PR = perceived risk, NC = uncertainty avoidance index, SAT = satisfaction, and CI = continuance intention.

#### 4.2. Inner Model and Hypotheses Testing

Hypotheses were evaluated by performing inner model analysis. The path coefficient t-value, significance, and hypotheses testing results are shown in Table 6. The perceived risk has a negative impact on satisfaction, but it did not achieve statistical significance. Therefore, H3 has been rejected. Similarly, the perceived value has a positive impact on satisfaction, but failed to achieve statistical significance. Therefore, H4 has been rejected. Apart from H3 and H4, the remaining five hypotheses proposed were supported.

Table 6. Summary of inner model results.

Hypotheses	Path Coefficients	t-Value	Supported
EWOM → SAT	0.159	2.870 **	YES
NC → SAT	0.293	5.162 ***	YES
PR → SAT	−0.051	1.376	NO
PV → SAT	0.062	0.962	NO
SAT → CI	0.844	31.171 ***	YES
TR → SAT	0.258	3.581 ***	YES
WDQ → SAT	0.193	2.870 **	YES

Note1: EWOM = electronic word of mouth, PV = perceived value, WDQ = website design quality, TR = trust, PR = perceived risk, NC = uncertainty avoidance index, SAT = satisfaction, and CI = continuance intention. Note 2: \* p-value < 0.05; \*\* p-value < 0.01; \*\*\* p-value < 0.001. Note 3: Number of bootstrap samples = 10,000.

## 5. Discussion

The explanatory power of our proposed theoretical model reached 71%. This figure indicates that our proposed integrated model suits the cross-border settings well. The rest of this section discusses these hypotheses.

H7 illustrates that the influence of satisfaction on the continuance intention of cross-border shopping is significantly positive. Satisfaction is a key concept in the expectation–confirmation theory and it refers to an individual’s mental state. Before purchasing goods/services from cross-border websites, such as Ebay or Amazon, people tend to develop some kind of expectation, which is considered as a function of satisfaction [79]. If the expectation is confirmed by the performance of the product/service, people show a degree of satisfaction, which in turn results in continuance intention. The results indicate that people are more willing to continue purchasing commodities from cross-border online shops if satisfaction is high. This insight can also be observed in other research models [83,110].

H1 demonstrates that eWOM has a positive impact on consumer satisfaction. This is expected since the rise in digital channels such as online recommendations and customer review sites made it easier and quicker for consumers to acquire their needed information from the internet [33]. Consequently, more and more customers are dependent on the comments posted by others when making their own decisions [111]. Our data show that when consumers received positive remarks from other buyers, they tend to show a satisfactory attitude [88]. For instance, prior to purchasing a product/service, customers can read other buyers’ comments. According to the expectation–confirmation theory, one would expect the performance of the product/service before use, and if their expectations are confirmed, they tend to show positive attitudes towards these products/services. In this case, if the positive comments from others are received and confirmed by the potential buyers, they tend to be satisfied with these products/services [112].

H3 shows that the influence of website design quality on consumer satisfaction is significant. Customers’ views are important in this digital age and companies need to know what consumers’ needs are before implementing an e-strategy to promote their products [52,113]. In this study, website design quality is conceptualized using three components, navigation function, service quality and system quality, and are all vital factors to evaluate users’ opinions. Our data show that when the website design quality is high, people tend to show a satisfactory attitude [51]. The results in H4 illustrate that the more people trust the website they use, the more satisfaction they achieve. The potential risks associated with online purchases, such as information asymmetry between buyers and sellers, and the impersonal nature of the online environment pose threats to the consumers and also to the buyers, and in this case, merchants need to acquire trust from the consumers [6]. The positive linkage between trust and satisfaction is expected by the cognitive–emotive causal order and social exchange theory [80] and is also in line with other empirical findings [95,96].

H6 shows the positive relations between the uncertainty avoidance index (UA) and consumer satisfaction. Based on Hofstede’s argument, people from a high UA culture prefer to utilize the traditional way of living and they tend to visit offline retail environments when it comes to shopping [75]. In other words, they are reluctant to accept and adopt new technology and new ICT services, such as online shopping [114]. Online shopping is inherently associated with high levels of uncertainty compare to shopping in offline retail environments, for potential buyers often lack information about the legitimacy of the store prior to purchase, they may fall into the trap that anything could happen when they key in credit information, and they are also worried about whether the product will arrive on time [99]. Compared with findings only within the e-commerce context [99], this study indicates that the UA is still vital in the cross-border e-commerce setting. And compared with other factors employed in this research, the UV index is the most important antecedent of satisfaction in this research.

Perceived value is an important antecedent in the marketing research and lots of companies utilize it as a strategy to attract customers [44]. Results on H2 show that the relation between perceived value and satisfaction is not statistically significant. This probably means that the utility of a product or service that the consumers want to purchase has already been highly recognized by them. In this

case, they pay more attention to other features, such as web interface features [115]. They may be very interested in the usefulness, informativeness and entertainment of the website [115]. Similarly, the hypothesis proposed on H5 is not supported either. This is probably due to the likelihood that a cross-border e-commerce website has already gained a customers' trust before they purchase online. In other words, consumers have already mentally prepared for the potential risks associated with online shopping [116]. This inference could be drawn from the fact that an increasing number of people prefer to buy commodities from cross-border shopping websites [5].

To the best of our knowledge, this research is the initial integrated study that has identified factors related to the continuance intention in cross-border shopping behavior in the e-commerce context. However, this study has several limitations. The first limitation is related to the sampling method. We utilized convenience sampling and purposive sampling to find respondents and because of this, the findings of the research cannot be generalized to the whole population who purchase the product/service on cross-border e-commerce websites in Taiwan. Future research could employ the random sampling method to obtain the representative data to check whether our findings could still be sustained. Secondly, the current study covers several transnational e-commerce websites, such as Amazon, ebay, and taobao. Although they are cosmopolitan in nature, there are still minor differences between them. For example, Taobao is rooted in China, a country that is famous for collective culture, while Amazon is rooted in American, a country that is famous for individualism. More research can also be performed to focus on only one type of e-commerce website and conduct an in-depth investigation of the interplays between e-commerce websites and their settings. Thirdly, the data were only collected in Taiwan and, due to this, future research across different regions or countries will be encouraged to better understand the generalization of our research findings. In addition, the target groups of this research mainly focused on cross-border e-commerce users; in the future, we will investigate the manufacturers of cross-border e-commerce. Finally, the integrated model proposed in this study focused on the factors that are common to the cross-border online shopping and IS system. Future studies may add more variables, such as legal regulations [117], consumer self-regulation [14], subjective norms about displaying information about products [15], transport/logistics [16], and returning policies [17], and integrate them in order to investigate this issue comprehensively. Although globalization enables customers to easily obtain what they want around the world, each country still has their own measures in general, in the form of tax in particular, to regulate the behavior of cross-border e-commerce [118,119]. These are all issues that need to be fully investigated in the future.

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