

## The Formation of Attitudes Toward Cross-Border Shopping Websites -Perceived Benefits, COVID-19 Anxiety, and Brand Familiarity-

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### Abstract

This study aimed to explore the effects of perceived benefits on consumers' attitudes towards cross-border online shopping websites. We also explore whether and how consumers' COVID-19 anxiety and brand familiarity weaken or strengthen the relationship between these perceived benefits and consumer attitudes. A total 319 items of data were used for the final analysis. The perceived benefits of a website were found to have only an indirect effect on purchase intentions by mediating consumers' attitudes toward the site. Competitive pricing of fashion products directly affected purchase intentions. COVID-19 anxiety was found to have a negative moderating influence on the relationship between perceived enjoyment and consumer attitudes, whereas brand familiarity had a positive moderating effect on both the relationships between perceived usefulness and consumers' attitudes toward the site and between perceived ease of use and their site attitude. This study provides useful insights for international e-tailers in developing marketing strategies that attract international consumers. Academically, we have contributed to the existing literature on the perceived benefits of global online shopping and the moderators of consumers' attitudes towards e-commerce sites.

**Key words:** Brand familiarity, Consumer attitudes, COVID-19 anxiety, Cross-border online shopping, Perceived benefits

### I. Introduction

Online shopping is growing quickly due to the prevalence of COVID-19, and cross-border transactions are becoming a frequent practice within the fashion industry. According to yStats (2021), overall cross-border E-Commerce is forecasted to grow by 30% from 2019 to 2026. Particularly, in South Korea, fashion is the most popular product category in cross-border online shopping (KOSIS, 2022). Due to the acceleration of cross-border B2C E-Commerce, more con-

sumers have turned to international E-tailers, such as Yoox or Net-a-porter, that operate overseas direct delivery apparel sites allowing consumers to search, order, pay, and receive products conveniently.

With the growth of the cross-border shopping market, it is important to understand the factors affecting consumers' fashion purchase choices on international E-tailers' platforms. Previous studies have reported that consumers prefer cross-border online shopping over local shopping due to the benefits provided by E-tailers such as a greater variety of products (Chen et al., 2021), brands (Augusta et al., 2019), lenient return policies (Shao et al., 2021), and reasonable prices

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(Huang & Chang, 2019). This study focuses on the perceived benefits of cross-border online shopping, which are important antecedents of consumers' attitudes and purchase intentions toward E-commerce sites. Due to abundant cross-border online consumption studies that focus on risk, it is necessary to pay attention to the facilitators that positively affect consumption rather than the risk factors.

This study also examines the contextual variables that affect the relationships between antecedents and the attitude and purchase intentions of cross-border online shoppers. These moderators expand the theoretical model of online shopping behavior, enabling valid and beneficial discourse on the topic. Previous studies have discussed the moderating influence of social psychological variables and demographics (Huang & Chang, 2019; Wagner et al., 2016). Brand familiarity is one of the essential variables that complement cross-border online shopping risk factors (Xiao et al., 2019). Consumers desire to purchase fashion products of well-known global brands from cross-border online shopping sites that are reliable and priced competitively compared to their home country in terms of taxes and brand distribution policies. Brand familiarity tends to serve as a motivator for cross-border online shopping entry and provides a reliable information source for consumers' site selection. This study predicts that brand familiarity will have an important contextual influence on the formation of consumer attitudes toward cross-border online shopping sites. In addition, along with the increase in cross-border online consumption during the pandemic, this study explores the moderating effect of COVID-19 anxiety on the relationship between perceived benefits and consumers' attitudes toward E-commerce sites. Previous studies have reported the influence of COVID-19 on consumer online shopping behavior (Ali, 2020; Eger et al., 2021), discussing the negative emotions caused by COVID-19, such as depression and fear, which have led to significant changes in online consumption. In this context, the effect of COVID-19 can be considered a temporary phenomenon rather than a variable that directly affects consumer attitudes, and has a

moderating effect.

This study proposes a research model of the effect of perceived benefits on consumers' attitude formation towards cross-border online shopping sites. The focus of the study is on the moderators of both relationships, which can considerably extend our understanding of consumers' online shopping behaviors. Regarding moderators, consumers' characteristics (i.e., COVID-19 anxiety and brand familiarity) should influence their attitude towards cross-border online shopping sites. Therefore, this study examines the effect of consumers' COVID-19 anxiety and brand familiarity on the relationship between perceived benefits and consumer attitudes toward cross-border online shopping sites. The study provides practical insights into developing cross-border delivery strategies for international E-tailers. Academically, we contribute to understanding the perceived benefits of global E-commerce and the moderators of consumers' attitude formation towards these online shopping platforms.

## II. Theoretical Background and Hypotheses

### 1. Cross-Border Online Shopping

Cross-border shopping is defined as buying from merchants abroad (Dmitrović & Vida, 2007). Due to changes to the current retail environment, online platforms have allowed retailers to present their products to domestic and overseas consumers (Baek et al., 2020; Huang & Chang, 2019). In this study, cross-border online shopping is narrowed into B2C retail business, where individual consumers purchase products for personal use rather than B2B business. The COVID-19-induced lockdown negatively impacted the brick-and-mortar fashion industry. In contrast, E-business has grown significantly, and this trend is also seen in cross-border E-commerce (Jensen et al., 2021).

Literature on cross-border shopping related to B2C retail has often been conducted from the retailer's perspective (Chen et al., 2021; Han et al., 2018). Few

studies have researched cross-border online shopping from the view of consumers; however, with the recent market growth, studies from the view of consumers are emerging. For example, there has been research on consumer psychology associated with cross-border online shopping (Lin et al., 2018; Han et al., 2018), the geographic cues of overseas brand products (Baek et al., 2020), and consumer experiences in cross-border online shopping websites (Chen & Yang, 2021; Huang & Chang, 2019). Unlike these studies, this study focuses on the cross-border online shopping website as a system and implements the technology acceptance model.

## 2. Technology Acceptance Model (TAM)

To identify the motivating factors of consumers' cross-border shopping, we draw on the technology acceptance model (TAM), which examines how individuals' behavior while using information systems is triggered by behavior intention and is decided by the individual's attitude and the perceived usefulness of the system (Davis, 1989). Davis has since revised the TAM model, abandoned behavioral intention, and recommended adopting attitude to determine the real usage of the information system, which is influenced by the perceived usefulness and the ease of use. TAM is a well-explored model in E-commerce (Lee et al., 2003), and has been extensively applied in domestic and cross-border E-commerce contexts. Several researchers (Ye, 2018) have used TAM to explain inter-country shopping behavior due to the rise of online shopping and cross-border E-commerce. Consumers may visit cross-border E-commerce sites for their benefits (e.g., easy to use or fun to visit) or because of the advantages of their products (e.g., the exclusiveness of products or better pricing). Hence, selecting TAM as a reference framework, we consider two benefit perspectives based on E-commerce sites and products.

## 3. Site-Based Benefits

Previous studies on cross-border E-commerce have

reported that the perceived benefits of the site positively influence consumers' attitudes toward the site and their purchase behavior (Wagner et al., 2016). Perceived benefits include cognitive qualities and emotional responses (Huang & Chang, 2019). Perceived usefulness refers to the extent to which any new technology or innovation is considered superior (Biucky et al., 2017). Usefulness is an important factor in acceptance and has certain advantages (Featherman & Pavlou, 2003). It is the degree to which customers believe that using new channels, such as E-commerce, will improve the buying process beyond the traditional conditions of offline purchasing (Rogers, 2003). Recently, researchers have found that perceived usefulness significantly impacts fashion website shopping behaviors (Shankar & Jain, 2021); therefore, we propose the following:

**H1:** Perceived usefulness positively impacts the attitude toward cross-border shopping on a foreign website.

Ease of use is the extent to which customers believe that understanding, using, and learning a new technology is simple (Featherman & Pavlou, 2003). Ease of use indicates when customers perceive online shopping as possible with minimal physical and mental effort (Rogers, 2003). Accordingly, if consumers believe that shopping sites and cross-border E-commerce platforms require less effort and can be easily utilized, the perceived usefulness is improved, increasing positive attitudes toward these platforms. Therefore, we propose the following:

**H2:** Perceived ease of use positively impacts the attitude toward cross-border shopping on a foreign website.

Enjoyment refers to the degree to which the use of the technology and the expected consequence of its execution are perceived as pleasurable (Davis et al., 1992). According to the TAM theory, enjoyment is a predictor of technology acceptance and intention to

use (Ha & Stoel, 2009). Kim et al. (2015) indicated that enjoyment positively affects mobile fashion shopping behavior. Based on this evidence, we hypothesize that:

- H3:** Enjoyment positively impacts attitudes toward cross-border shopping on a foreign website.

#### 4. Product-Based Benefits

Researchers investigating the motivators of cross-border shopping have found the two primary drivers to be product exclusiveness and price (Huang & Chang, 2019). Therefore, we utilize product uniqueness and price competitiveness as the drivers that correspond to the product-based benefits of cross-border shopping. Some products that cannot be found in a consumer's home country or have limited availability might be popular in other countries. Therefore, many consumers shop on overseas websites because product choices are limited in their own country (Chen et al., 2021). Unique products are differentiated and shift consumer selection as a key benefit for consumers (Gielens & Steenkamp, 2007). Huang and Chang (2019) suggested that product uniqueness is one of the most important factors for adopting products and brands when shopping in foreign online stores. According to Tian and McKenzie (2001), the pursuit of uniqueness is the tendency to purchase and use products to develop and reinforce one's identity and to seek distinction from others. As a large proportion of Korean cross-border online shoppers report that they use the Internet to purchase products that are not available in Korea (An et al., 2016), the product uniqueness is expected to affect attitudes and purchase intentions of cross-border online shopping. Recently, Chen et al. (2021) indicated that retailers should increase the degree of product differentiation to survive the cross-border E-commerce market. Thus, we hypothesize that product uniqueness affects consumer attitudes toward cross-border shopping and purchase intention.

- H4:** Product uniqueness positively relates to attitudes toward cross-border shopping on a foreign website.

- H5:** Product uniqueness is positively related to purchase intention.

Price competitiveness refers to a better price resulting from reduced taxes or exchange rates (Chiang & Dholakia, 2003). In the E-commerce market, consumers have many opportunities to search for information, and as searching is easy, prices are often used as a means of securing the market and remaining competitive. Through cross-border E-commerce export suppliers, international buyers can access high-quality products at a reduced cost in foreign markets. Competitive pricing and wide product assortment attract cross-border E-commerce customers (Kim et al., 2017). Saleh (2016) indicated that approximately 70% of cross-border online shoppers purchase from overseas since the prices are lower than in their own countries. Consumers shop on overseas websites because the total cost of purchase (including VAT, duty, and delivery fees) from the foreign online shopping site is less than the cost of the same item in their own country. Whether shopping occurs online or offline, price is undeniably one of the most significant cues in the consumer's choice of shopping channel (Chiang & Dholakia, 2003; Zeithaml, 1982). Therefore, we hypothesize that competitive prices for a cross-border online shopping website will positively affect attitudes towards shopping and purchase intention.

- H6:** Price competitiveness positively relates to attitudes toward cross-border shopping on a foreign website.

- H7:** Price competitiveness positively relates to purchase intention.

According to the theory of planned behavior (TPB), positive attitudes toward a given problem form positive behavioral intentions (Ajzen, 1991). In general, the stronger an individual's favorable attitude toward a

behavior, the higher their intention to perform that behavior. Based on the basic TPB structure of the relationship between attitudes and intentions, consumers' positive attitudes toward cross-border E-commerce should result in favorable behavioral intentions (Han et al., 2018). Therefore, we hypothesize the following:

**H8:** Attitude toward cross-border shopping on a foreign website positively relates to the purchase intention.

### 5. The Moderating Effect of Consumer Characteristics in TAM

Individual consumer characteristics are important in the use of a system. Attitude or behavior vary by age, gender, anxiety level, user experience, etc., even if the benefits, such as ease of use, usefulness, and enjoyment, are equally perceived in the use of a system (Castaneda et al., 2007; Cebeci et al., 2019; Grable et al., 2020; Kazancoglu & Yarimoglu, 2018). This study focuses on anxiety and brand experience among various consumer characteristics.

Anxiety is a psychological state based on uncertain outcomes (Lazarus, 1991) and a psychological interpretation affecting the emotional response of consumers (Yeung & Morris, 2001). Prior studies on consumer response to online services that use TAM examine various types of anxiety as moderators, such as technology anxiety (Cebeci et al., 2019; Dönmez-Turan & Kır, 2019; Evanschitzky et al., 2015; Lee et al., 2022), online shopping anxiety, and social anxiety (Srinivasan, 2015; Yuan et al., 2022). Yuan et al. (2022) revealed the moderating effect of social anxiety on the relationships between perceived benefits of AI (i.e., responsiveness, compatibility) and consumer attitude toward the system. Srinivasan (2015) discussed that shopping anxiety negatively related to consumers' perceived ease of use and intention for online shopping based on the TAM. This study notes that overseas direct shopping has increased since the onset of the pandemic and predicts that COVID-19 anxiety will play a role as a moderator in TAM to explain cross-

border shopping on a foreign website.

The high infection rates and social isolation generated by COVID-19 provoked widespread depression and anxiety among individual consumers (Thapa et al., 2022). COVID-19 anxiety has affected consumer behavior as people avoid face-to-face services and increasingly engage in online shopping (Sharma & Jhamb, 2020). Many previous studies have claimed that COVID-19 anxiety encourages online shopping behavior (Aryani et al., 2021; Jensen et al., 2021; Sharma & Jhamb, 2020). However, these studies overlook the adverse interactions that anxiety causes in the consumer decision-making process.

Literature on TAM indicates that anxiety has a mostly negative moderating effect on the influences of ease of use, perceived usefulness, and enjoyment (Cebeci et al., 2019; Evanschitzky et al., 2015; Lee et al., 2022). These consistent results are based on anxiety's interruption of the response to the perceived cues in cognition processing. As anxiety increases, the predictions for adverse outcomes are psychologically reinforced (Yeung & Morris, 2001), and the normal cognitive process of interpreting perceived cues by assigning attention to risk perception is interrupted (Eysenck et al., 2007). Anxiety leads to a more conservative interpretation of positive cues, like perceived benefits. Experiencing high anxiety, the link between perceived benefits such as ease of use, perceived usefulness, and enjoyment and attitude which is a consumer's cognitive response, toward cross-border shopping on a foreign website is concrete; therefore, we propose the following:

**H9:** COVID-19 anxiety negatively modifies the relationship between site-based benefits (i.e., ease of use, perceived usefulness, and perceived enjoyment) and attitudes toward cross-border shopping on a foreign website.

The consumer experience has been found to play a significant role in adoption behavior (Ajzen & Fishbein, 1980; Choi et al., 2010; Klopping & McKinney, 2006). Knowledge of past experiences will increas-

ingly shape consumers' positive responses. That which consumers are most looking forward to in cross-border shopping for fashion products is that they can see not only famous brand products but also various overseas brand products that are not imported into their own countries. Therefore, this study assumed that brand familiarity would play the role of a crucial moderator in TAM. Brand familiarity is the accumulated experiences customers have had with a brand (Alba & Hutchison, 1987) and reflects the consumers' prior experiences.

Brand familiarity is linked to consumer confidence (Laroche et al., 1996), which is a critical part of emotional responses based on input information (Macdonald & Sharp, 2000). In the case of a well-known brand, cognitive processing can be confidently performed so that the emotional response based on information processing is strengthened. However, in the case of an unfamiliar brand, the consumer does not have confidence in their cognitive processing, so the emotional response based on information is weakened. This is why consumers respond favorably to what is cognitively familiar (Laroche et al., 1996); therefore, we propose the following:

**H10:** Brand familiarity has a positive moderating influence on the relationship between site-

based benefits (i.e., perceived usefulness, perceived ease of use, and perceived enjoyment) and attitudes toward cross-border shopping on a foreign website.

The research model based on the hypotheses established so far is shown in <Fig. 1>.

### III. Methods

#### 1. Measurements

This study surveyed consumers who had directly purchased fashion products from overseas sites within the past year. The questionnaire covered ease of use, perceived usefulness, perceived enjoyment, product uniqueness, price competitiveness, brand familiarity, COVID-19 anxiety, attitude, and overseas direct purchase intention. Survey items from previous studies were modified and used in accordance with this study. First, the perceived usefulness of overseas direct purchase sites refers to the degree to which efficiency is improved in searching for and purchasing fashion products on a site. Perceived ease of use is the reduced mental effort in searching for and purchasing fashion products on a site. Perceived usefulness and perceived ease of use were each measured with six items based

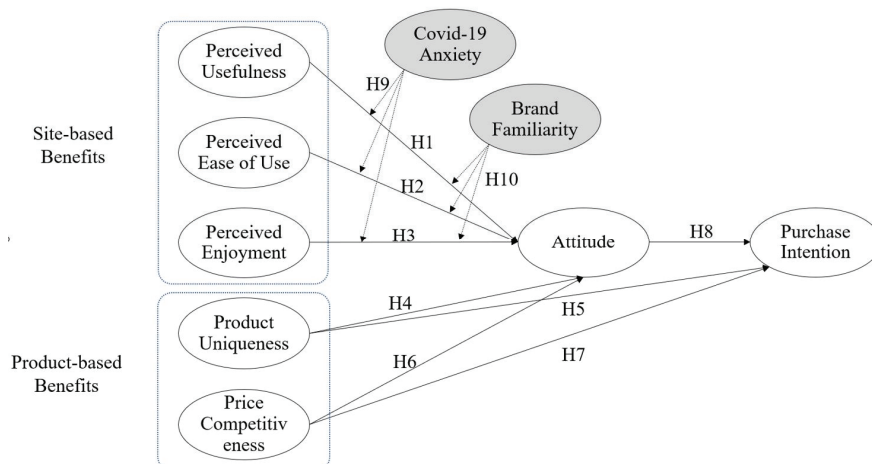


Fig. 1. Research model.

on Gefen et al. (2003). Perceived enjoyment is the pleasure felt while using a site and was measured using four modified items presented by Plotkina and Saurel (2019).

Product uniqueness is the extent to which overseas products differ from existing products in Korea and was measured using two items from Huang and Chang (2019). Price competitiveness is the degree to which consumers perceive that the price is better for a product sold on an overseas site, as measured by four items from Huang and Chang (2019). The attitude towards overseas direct purchase sites was defined as the degree of preference for a site, and purchase intention was defined as the intention to buy fashion products from a site. Items from Van der Heijden et al. (2003) were used for both attitude and purchase intention. Brand familiarity was measured with three items by Laroche et al. (1996), and stress from COVID-19 was measured with three items by Laato et al. (2020). Responses were assessed using a 7-point Likert scale and included demographic items such as the purchase item and site. All demographic items were measured in a multiple-choice format.

## 2. Sampling and Data Collection

The data for the study was collected in January 2021 from a panel of online survey companies. A total of 1,283 panelists accessed the survey site for responses, and 319 data items were used for the final analysis, excluding insincere responses, dropouts due to gender and age group allocation sampling, and those who gave up halfway through responding. For hypothesis testing, descriptive statistics and reliability analysis were performed using SPSS 26.0, and SmartPLS 3.0 was used for PLS-SEM analysis. STATA 17.0 was used for the moderating effect analysis.

The demographic information of the respondents are as follows. Gender and age were equally distributed amongst the respondents, with 49.8% male and 50.2% female, and ages ranged evenly from their twenties to fifties. Among the respondents, 52.4% were married, and 70.8% were university graduates. Office

workers accounted for the highest portion, at 40.8%, followed by homemakers at 11.3%, professional technical workers at 10.3%, and students at 10.0%. As for the average monthly income, 31.6% earn 2 million won to 4 million won, and 25.7% earn 4 million won to 6 million won (Table 1). The most recent fashion products purchased overseas were shoes, at 30.7%, and casual apparel, at 27.6%. As for the overseas sites used to buy fashion products, Matches Fashion had the highest rate at 22.3%, followed by Mr. Porter at 11.0%, and Endclothing at 7.5%.

## IV. Results and Discussion

### 1. Measurement Validity and Reliability

The validity and reliability of our measurement model were verified after removing an item that showed a value of .70 or less through PLS-SEM analysis, as shown in <Table 2>. The factor loading values of all measurement items are distributed from .82~.93 and are significant at a level of .001. All CR values are above .90, and AVE values exceed .5 to ensure convergent validity (Table 2).

The reliability coefficient values of each factor are all above .8, ensuring internal consistency (Table 3). In addition, the AVE square root values are larger than the correlation between factors, demonstrating discriminant validity (Table 3).

### 2. Structural Model

$R^2$ ,  $f^2$ , and  $Q^2$  values were used to evaluate the fit of the structural model of the PLS-SEM analysis (Hair et al., 2021). The R square scores indicate the portions of the construct variance that the model can explain. The  $R^2$  value of the attitude toward cross-border online shopping is .69, and the  $R^2$  value of purchase intention is .75. These results show that our model has sufficient portions. The  $f^2$  values measure the effects of a focal construct in contrast to contrast the results to a model without these effects. The values of  $f^2$  in our model are shown in <Table 4>. The  $f^2$  value of purchase

Table 1. Demographic characteristics

	Category	Frequency (%)
Gender	Male	159(49.8%)
	Female	160(50.2%)
Age	20's	79(24.8%)
	30's	80(25.1%)
	30's	77(24.1%)
	40's	83(26.0%)
Marital status	Married	167(52.4%)
	Single	149(46.7%)
	Others	3(9%)
Education	Completed high school	29(9.1%)
	College enrollment	25(7.8%)
	Bachelor's degree	226(70.8%)
	Graduate school or above	39(12.2%)
Income	Below 2,000,000 KRW	27(8.4%)
	2,000,000 – 4,000,000 KRW	101(31.6%)
	4,000,000 – 6,000,000 KRW	83(25.7%)
	6,000,000 – 8,000,000 KRW	49(15.4%)
	8,000,000 – 10,000,000 KRW	33(10.3%)
	More than 10,000,000 KRW	27(8.5%)
Occupation	Full-time homemaker	36(11.3%)
	Office worker	130(40.8%)
	Student	32(10.0%)
	Professional	22(6.9%)
	Business management	24(7.5%)
	Service staff	26(8.2%)
	Production	5(1.6%)
	Professional technical occupation	33(10.3%)
	Others	11(3.4%)
Purchased fashion products	Suits	9(2.8%)
	Casual	88(27.6%)
	Home wear	7(2.2%)
	Sports wear	22(6.9%)
	Under wear	13(4.1%)
	Shoes	98(30.7%)
	Bags	33(10.3%)
	Fashion accessory (Hat, Scarf, Belt etc.)	28(8.8%)
	Others	21(6.6%)
Purchase site	www.matchesfashion.com	71(22.3%)
	www.mrporter.com	35(11.0%)
	www.farfetch.com	31(9.7%)
	www.yoox.com	21(6.6%)
	www.endclothing.com	24(7.5%)
	www.net-a-porter.com	16(5.0%)
	www.mytheresa.com	20(6.3%)
	Others	101(31.7%)
	Total	319(100%)



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**Table 2. Validity and reliability for constructs**

Constructs	Items	Loadings	AVE	CR
Perceived usefulness	Useful for searching and buying Korean fashion products	.85	.75	.94
	To improves my performance in Korean fashion products searching and buying	.84		
	To search and buy Korean fashion products faster	.89		
	To enhances my effectiveness in Korean fashion products searching and buying	.86		
	To makes it easier to search for and purchase Korean fashion products	.88		
	To increases my productivity in searching and purchasing Korean fashion products	.84		
Perceived ease of use	Easy to use to search for and purchase Korean fashion products	.86	.74	.94
	Easy to become skillful at using this web site	.87		
	Easy to learning to operate this web site	.86		
	Flexible to interact with this web site	.85		
	My interaction with this web site is clear and understandable	.85		
	Easy to interact with this web site	.86		
Perceived enjoyment	Fun interacting with this site	.89	.79	.91
	A lot of enjoyment	.92		
	Enjoy using this site	.93		
Product uniqueness	Unique fashion products	.92	.85	.91
	Offer fashion products that local websites do not have	.91		
Price competitiveness	The price attractiveness	.86	.71	.90
	Low additional shopping cost	.82		
	The lowest price for the same fashion products	.86		
	Competitive pricing.	.82		
Attitude toward cross-border online shopping	Appealing	.91	.85	.94
	Preference	.93		
	Good	.92		
Cross-border purchase intention	Purchase intention in the near future	.90	.84	.94
	Intend to use this website to purchase fashion products	.92		
	I want to purchase fashion products via this website.	.86		

**Table 3. Discriminant validity**

Constructs	Cr. $\alpha$	1	2	3	4	5	6	7
Attitude toward cross-border online shopping	.91	<b>.92</b>						
Price competitiveness	.86	.47	<b>.84</b>					
Cross-border purchase intention	.90	.85	.51	<b>.92</b>				
Perceived enjoyment	.86	.74	.47	.70	<b>.89</b>			
Perceived ease of use	.92	.78	.48	.76	.79	<b>.86</b>		
Perceived usefulness	.93	.76	.46	.75	.77	.83	<b>.86</b>	
Product uniqueness	.81	.63	.53	.62	.58	.61	.58	<b>.92</b>

Notes. Values on the diagonal (bolded) represent the square root of the Average Variance Extracted (AVE), while the off-diagonal elements represent the correlations between the constructs.

**Table 4. Structural equation modeling (SEM) analysis results**

Hypotheses	$\beta$	t-value	Results	f square
H1: Perceived usefulness → Attitude toward cross-border online shopping	.19	2.23*	Supported	.02
H2: Perceived ease of use → Attitude toward cross-border online shopping	.29	3.21**	Supported	.05
H3: Perceived enjoyment → Attitude toward cross-border online shopping	.24	4.06***	Supported	.06
H4: Product uniqueness → Attitude toward cross-border online shopping	.18	3.29**	Supported	.06
H5: Product uniqueness → Cross-border purchase intention	.08	1.77	Rejected	.02
H6: Price competitiveness → Attitude toward cross-border online shopping	.03	.70	Rejected	.00
H7: Price competitiveness → Cross-border purchase intention	.11	2.49*	Supported	.04
H8: Attitude toward cross-border online shopping → Cross-border purchase intention	.74	20.58***	Supported	1.28

Notes. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

intention is 1.28, indicating the largest effect size, but the rest have relatively small effect sizes. In our analysis, we employed the Stone-Geisser  $Q^2$  to assess the predictive relevance of the model.  $Q^2$  values greater than 0 indicate that the model has predictive relevance. We calculated the  $Q^2$  values using a standard blind-folding procedure with an omission distance of 7. The  $Q^2$  values of attitude and purchase intention are greater than 0 at .57 and .62, respectively. Based on the findings, the results suggest that the presented model demonstrates a satisfactory fit.

### 3. Main Effect Testing

For hypothesis testing, 5,000 bootstrapping tests were applied, and the results are shown in <Table 4>. Perceived usefulness ( $\beta = .19$ ,  $p < .05$ ), perceived ease of use ( $\beta = .29$ ,  $p < .01$ ), and perceived enjoyment ( $\beta = .24$ ,  $p < .001$ ) are all significant for the attitude toward cross-border online shopping, indicating that H1, H2, and H3 are supported. In other words, usefulness, ease of use, and enjoyment from overseas direct purchase sites significantly affect attitudes and support TAM. In addition, product uniqueness from overseas direct purchase sites ( $\beta = .18$ ,  $p < .02$ ) significantly affects the attitude toward cross-border online shopping but does

not directly affect the purchase intention ( $\beta = .08$ ,  $p > .05$ ). Therefore, H4 is supported, and H5 is rejected.

Price competitiveness ( $\beta = .03$ ,  $p > .05$ ) does not affect the attitude toward cross-border online shopping but affects purchase intention ( $\beta = .11$ ,  $p < .05$ ). Therefore, H6 is rejected, and H7 is supported. Finally, the attitude toward cross-border online shopping ( $\beta = .74$ ,  $p < .001$ ) significantly affects the intention to purchase fashion products through cross-border E-commerce, so H8 is supported.

In H5 and H6, the paths from the intrinsic product attribute (i.e., product uniqueness) to purchase intention and those from the extrinsic cue of products (i.e., price) to consumer attitudes toward cross-border shopping were rejected. This is similar to previous studies that show that the extrinsic product attributes directly affect consumer behavioral variables, while intrinsic product attributes influence purchase intention through attitude formation during the rational purchase decision making stage (Kimiagari & Malafe, 2021).

### 4. Moderating Effect Testing

A moderated regression to test hypotheses 9 and 10 for the moderating effect of consumer characteristics

on the relationship between perceived benefits based on the site and attitude toward the site was conducted by using STATA 17.0. Analyzing this effect with the structural equation modeling methods that previously tested hypotheses 1 to 8 results in data loss by categorizing the moderating variables of COVID-19 anxiety and brand familiarity, which are measured as quantitative variables. To minimize the loss of numerical information, quantitative variables were used as moderating variables without further categorizing process. Thus hypotheses 9 and 10 were tested by using different statistical methods. In each moderated regression equation for testing, the independent variables were the three perceived benefits based on the site (i.e., PU, PEU, PE), the dependent variable was the consumer attitude toward the site, and the moderators were COVID-19 anxiety and brand familiarity. Factor score was used for all variables. Control variables included gender and marital status (as dummies), and age.

**1) The Moderating Effect of COVID-19 Anxiety on the Relationship Between Perceived Benefits and Attitude Toward a Site**

As a result of the analysis in <Table 5>, COVID-19 anxiety is found to have a negative moderating influence on the relationship between perceived enjoyment and consumer attitude towards the site, partly supporting hypothesis 9 ( $\beta=-.445, p=.044$ ). This shows that even consumers who perceive enjoyment in using the

site may be less likely to have a positive attitude toward the site under a high level of COVID-19 anxiety. Unlike the results of some previous studies (Cebeci et al., 2019; Evanschitzky et al., 2015; Lee et al., 2022), COVID-19 anxiety did not have a significant moderating effect on the relationships between PU, PEU and attitude. This can be attributed to the fact that previous studies mainly focus on technology anxiety, while this study measured anxiety related to social factor such as COVID-19. It is interesting result suggesting that perceived enjoyment in cross-border online shopping sites can have a complementary effect in lowering the influence of consumers' COVID-19 anxiety on consumer attitude towards the site.

**2) The Moderating Effect of Brand Familiarity on the Relationship Between Perceived Benefits and Attitude Toward a Site**

Brand familiarity has a positive moderating effect on both the relationships between perceived usefulness and consumers' attitude toward the site ( $\beta=.572, p=.043$ , See Table 6) and between perceived ease of use and their site attitude ( $\beta=.624, p=.011$ , See Table 7). There was no effect on the relationship between perceived enjoyment and the attitude toward the cross-border online shopping site. In other words, brand familiarity has a positive moderating effect only on the formation of cognitive attitudes, while it has no significant influence on emotional attitude formation.

**Table 5. Moderating effects of COVID-19 anxiety on the relationships between PEN and ATT**

	Dependent variables (ATT)			
	$\beta$	SE	t-value	p
Cons.	-	.673	1.79	.074
<i>Main effect</i>				
Perceived Enjoyment (PEN)	1.009	.212	5.79	.000
COVID-19 Anxiety	.323	.123	2.97	.003
<i>Moderating effect</i>				
PEN x COVID-19 Anxiety	-.445	.041	-2.02	.044
<i>Control variables</i>				
Gender(D:female)	-.080	.088	-2.00	.047
Age	-.088	.006	-1.57	.118
Marriage (D1: Single)	-.052	.123	-.93	.354
Marriage (D2: Other)	.019	.458	.47	.639

R<sup>2</sup>=.508 (F=45.81, df1/df2=7/311, p = .000)

**Table 6. Moderating effects of brand familiarity on the relationships between PU and ATT**

	Dependent variables (ATT)			
	$\beta$	SE	<i>t</i> -value	<i>p</i>
Cons.	-	.893	2.22	.027
<i>Main effect</i>				
Perceived usefulness (PU)	.410	.186	2.46	.014
Brand familiarity	-.289	.185	-1.65	.099
<i>Moderating effect</i>				
PU x Brand familiarity	.572	.038	2.03	.043
<i>Control variables</i>				
Gender(D:female)	-.008	.081	-.23	.820
Age	.040	.005	.77	.441
Marriage (D1: Single)	.028	.112	.55	.585
Marriage (D2: Other)	.032	.418	.86	.392

R<sup>2</sup>=.589 (F=63.53, df1/df2=7/311, *p* = .000)

**Table 7. Moderating effects of brand familiarity on the relationships between PEU and ATT**

	Dependent variables (ATT)			
	$\beta$	SE	<i>t</i> -value	<i>p</i>
Cons.	-	.760	2.89	.004
<i>Main effect</i>				
Perceived ease of use (PEU)	.435	.161	3.07	.002
Brand familiarity	-.373	.161	-2.46	.015
<i>Moderating effect</i>				
PEU x Brand familiarity	.624	.033	2.55	.011
<i>Control variables</i>				
Gender(D:female)	-.040	.077	-1.15	.251
Age	.021	.005	.41	.679
Marriage (D1: Single)	.035	.106	.71	.476
Marriage (D2: Other)	.029	.399	.81	.417

R<sup>2</sup>=.625 (F=74.13, df1/df2=7/311, *p* = .000)

This is similar to the results of previous studies in which brand familiarity is a variable formed by knowledge and experience of a brand, and the more well-known the brand, the more favorable attitudes are formed by cognitive processes (Macdonald & Sharp, 2000).

Thus, hypothesis 10 is partly supported. This shows that consumers' evaluation of the cognitive factors of a site and brand familiarity play an important role in consumer attitude formation towards cross-border online shopping platforms.

## V. Discussion and Conclusion

This study was conducted to understand cross-border

online shopping behavior and provide useful facilitators for encouraging more consumption of fashion products from international E-tailers by extending TAM (Davis, 1989). We have investigated the effect of the perceived benefits of sites and products on consumer attitude and purchase intention by introducing two moderating variables, COVID-19 anxiety and brand familiarity, in cross-border online shopping sites. Academically, it confirms the validity of the Technology Acceptance Model by providing additional evidence that the perceived benefits of both the website and the product are crucial factors influencing the cross-border online shopping.

Our findings have also managerial implications for online fashion retailing and effectiveness of marke-

ting. First, the results of the conducted research show that the perceived benefits of the site only have an indirect effect on purchase intention by mediating consumers' attitude toward the site, whereas price competitiveness (i.e., perceived benefits from fashion products) directly affect purchase intention. Because only price competitiveness directly influences purchase intention, price is important from a short-term perspective. However, perceived usefulness, perceived ease of use, and perceived enjoyment influence purchase intention through attitudes, so a long-term strategy is needed to improve attitudes that do not easily change. While cost-effectiveness and price competitiveness have emerged as important factors in the modern context, in order to increase purchase intention by improving attitudes that are not easily changed from a future-oriented perspective, a strategy for website design that is easily usable, convenient in payment, and capable of generating interest is necessary.

Second, we analyzed the moderating effect of COVID-19 anxiety and brand familiarity on the relationship between perceived benefits and attitude toward a site, showing that COVID-19 anxiety and brand familiarity have different moderating effects. Even for consumers who feel pleasure in using cross-border online shopping sites, the impact of pleasure on the formation of site attitudes may be reduced if COVID-19 anxiety is high. This interesting result suggests that perceived enjoyment during cross-border online shopping can have a complementary effect in overcoming COVID-19 anxiety. In the process of delivering products or services, we can alleviate consumers' anxiety by emphasizing safety and hygiene while also providing pleasure and satisfaction. Contrary to this, the cognitive factors (i.e., perceived usefulness and ease of use) of perceived benefits and brand familiarity are essential in forming consumers' attitudes toward a site. Online retailers can implement different management strategies and consider the antecedents for attitude formation that are more sensitive to environmental issues such as COVID-19 anxiety.

Retailers may face unexpected social anxiety factors such as recessions and conflicts at any time, even

outside of the context of COVID-19. In practice, it would be more beneficial to adopt a strategy that places greater emphasis on cognitive benefits. For retailers who deal with well-known brands, focusing on providing rational benefits such as the usefulness or ease of use of their websites can foster positive consumer attitudes toward the site. In other words, by prioritizing brand familiarity, ease of use, and usefulness of the site and effectively communicating these aspects, retailers can generate positive attitudes among consumers. However, when it comes to consumers with low brand familiarity, solely emphasizing cognitive benefits is less likely to result in positive attitudes. In this case, both cognitive factors and brand familiarity should be given high consideration. Retailers can enhance consumer attitudes and purchase intent by improving the user experience, highlighting the unique value of their products, and increasing brand awareness and trust.

However, our research model has limitations. First, we asked respondents to select one cross-border online fashion retailer, out of eight options (including "other"), from which they recently made fashion item purchases. These options primarily cater to high-priced items. Regarding site selection, we suggest further research to broaden the scope of the study by including cross-border shopping malls that offer a diverse range of products across various price ranges. Next, while several cognitive benefits were included as sub-elements of site-based benefits, only one perceived enjoyment item was included in the emotional benefits. As well, moderating variables need more consideration. In further studies, testing an extended model that adds emotional benefit variables such as perceived interest and fun along with perceived enjoyment is recommended. Other studies exploring the influence of moderators, such as past purchasing experience and technology readiness, are also recommended. With understanding the impact of various moderators, it will be possible to provide diverse and rich practical implications to consider together to utilize the perceived benefits as a site promotion factor.

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**2. Ethics and consent**

This research was conducted under the approval and supervision of Sangmyung University Institutional Review Board (IRB-SMU-S-2020-4-003) regarding ethical issues including consent to participate.

**3. Availability of data and materials**

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

**4. Conflicting interests**

Not applicable

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**6. Authors' contributions**

HY analyzed and interpreted the data regarding the main effect of the research model, and was a major contributor in writing the method and result. YC conducted the analysis of the data regarding the moderating effect of the model. HJ and CY performed the literature review and hypothesis building. All authors read and approved the final manuscript.

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