

Khoa, Bui Thanh; Huynh, Tran Trong

## Article

# How do customer anxiety levels impact relationship marketing in electronic commerce?

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\*Corresponding author: Bui Thanh Khoa, Industrial University of Ho Chi Minh City, Ho Chi Minh City, Vietnam  
E-mail: [bui Thanh khoa@iuh.edu.vn](mailto:bui Thanh khoa@iuh.edu.vn)

Reviewing editor:  
Usama Awan, INN School of business, Inland Norway University of Applied Sciences - Lillehammer: Hogskolen i Innlandet - Studiested Lillehammer, NORWAY

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## MARKETING | RESEARCH ARTICLE

# How do customer anxiety levels impact relationship marketing in electronic commerce?

Bui Thanh Khoa<sup>1\*</sup> and Tran Trong Huynh<sup>2</sup>

**Abstract:** E-commerce is no longer a transaction in developed countries but has been popular worldwide. However, building long-term customer relationships is challenging for online businesses because of consumers' anxiety levels in the transaction process. This study aimed to expose the moderating effect of anxiety on relational marketing between the business and customers in the online market. The mixed method was applied to achieve the research objective. Qualitative research was mainly used to confirm and develop research items. Moreover, quantitative research was to test the research hypotheses through a survey of 917 respondents who experienced shopping online and faced severe problems in the past. The positive relationship between perceived mental benefits, online trust, hedonic value, and electronic loyalty was confirmed via Partial Least Squares Structural Equation Modeling. The anxiety levels impact the relationship between perceived mental benefits and electronic loyalty, online trust, and electronic loyalty. The mediating role of online trust and hedonic value is confirmed. Finally, the study proposed the managerial implication of maintaining customer relationships by increasing the mental benefits, customer trust, and hedonic value and reducing anxiety.

**Subjects:** Consumer Behaviour; Internet / Digital Marketing / e-Marketing; Relationship Marketing

**Keywords:** perceived mental benefits; online trust; hedonic value; electronic loyalty; anxiety levels

## 1. Introduction

Along with the advent of digital technology 4.0 and the explosion of online activity, the rise of e-commerce has revolutionized several industries with its cost-cutting advantages (Obimbo et al.,

## ABOUT THE AUTHORS



Bui Thanh Khoa

Bui Thanh Khoa received his Master's degree in Business Economics from Université Toulouse 1 Capitole in France in 2012 and his doctorate in Business Administration from Ho Chi Minh City Open University in Vietnam in 2020. He has numerous papers in the SCOPUS and ISI databases. In addition to serving as a reviewer for numerous prestigious journals, he is a member of the Advisory International Editorial Board of Jurnal the Messenger, an ISI system journal; as well as a member of the editorial Board of the Journal of System and Management Sciences, Advances in Operations Research, Scopus indexed journals; and International Journal of Technology Transfer and Commercialisation from Inderscience Publisher. His research interests are methodology, electronic commerce, organizational behavior, and consumer behavior. He can be contacted at email: [khoadhcn@gmail.com](mailto:khoadhcn@gmail.com)

Tran Trong Huynh is a lecturer at FPT University; he got a Master's degree in Mathematics in 2013 at Ho Chi Minh City University of Education and Finance in 2020 at the University of Economics Ho Chi Minh City. His current research interests include finance, applied mathematics, data science, econometrics, and machine learning. He can be contacted at email: [huynh4@fe.edu.vn](mailto:huynh4@fe.edu.vn)

2022). E-commerce is not a novel notion or emerging industry anymore. Many changes were made to the economy in 2020 because of the COVID-19 pandemic, but the rapid expansion of e-commerce has helped make Vietnam one of the most promising economies in the ASEAN area. Despite the country's potential, there are significant obstacles to establishing a stable e-commerce sector in Vietnam. With the help of digitalization and IT, the e-commerce sector is becoming more accessible, with many new business models, players, and supply chains. In light of the recent COVID-19 pandemic, companies are increasingly turning to digital technology and the creation of new channels of distribution as a means of survival.

Anxiety has long been an interest in research in cognitive behavior (Beck, 1976; Beck & Emery, 1979). Studies have shown that negative thoughts create unhealthy emotional and behavioral responses, especially online shopping. The anxiety faced by people who are not computer savvy will limit the growth of online shoppers. The number of studies focusing on online customer anxiety levels is currently limited (Henson & Reyns, 2015). Anxiety studies mainly focus on technological anxiety (Hackbarth et al., 2003; Kang & Lee, 2006; Tseng & Fogg, 1999), or internet anxiety (Joiner et al., 2013; Nagar & Gandotra, 2016) as independent variables or mediating the relationship between components, or some studies aimed at regulating the relationship between components, e.g., satisfaction (Lee et al., 2009) and purchase intention (Yang & Forney, 2013). Studies on anxiety levels are still limited, especially in long-term relationships, although online shopping anxiety is an essential factor that needs further investigation (Nagar & Gandotra, 2016).

In addition to the need to use product functions, existing customers also want to achieve relationship value, especially in the online landscape. Relationship marketing took advantage of their technology to drive purchases with little effort. This relationship happens when businesses interact with customers in one-to-one marketing (Turban et al., 2018). In addition, if you get customers who are true believers and love the business, they will recommend it (Khoa, 2020). Word-of-mouth is a free form of marketing, and referrals tend to develop longer-term relationships. Relationship marketing is a simple formula that only requires businesses to focus on customers (Doney & Cannon, 2018). Research on relationship marketing has been done for a long time; however, the research mainly builds utilitarian premises for the relationship, such as convenience, low price, reputation, and social interaction (Khoa, 2020).

As life progresses higher and higher, the premise of relationship marketing also changes in the spiritual rather than the physical direction. The need to improve the emotional and spiritual life has been paid more attention to when society develops. Besides practical benefits such as ease of use and convenience, the concepts "fun," "happiness," "entertainment," and "shopping is fun" are mentioned more and more in the research. Hirschman and Stern (1999) paved the way for studying emotions in shopping, forming cognitive psychology. Emotion is a mental state arising from the perceived appreciation of events accompanied by physiological processes, thereby creating specific actions to affirm or deal with emotions, depending on the nature and meaning of emotions (Bagozzi et al., 1999). Cognitive psychology studies human action and processes a person's cognitive abilities, thinking abilities, language abilities, problem-solving, and creativity (APA, 2019). Hansen (2005) defined emotion as a response to stimuli; therefore, stimulation will come from the aspects that e-commerce sites bring when customers contact and buy online. The results of cognitive and emotional processes change the attitudes and beliefs of customers. Recreational benefits are perceived as emotional and mental benefits; and will affect the attitudes and behaviors of customers in the context of e-commerce (Mosunmola et al., 2019). The emotional or psychological benefit is important in consumers' purchasing decision-making process (Bagozzi et al., 2016; Pappas et al., 2017). Hence, the study of the mental factors that underpin relationship marketing based on the acquisition of positive emotions and the avoidance of negative emotions when shopping online is a contributor to behavioral theory in the field of B2C marketing; In line with Pappas (2018), it is necessary to develop emotion-centered theories to understand consumers better. "

Therefore, it is essential to study the role of anxiety levels in building a long-term relationship between buyer and seller for countries with e-commerce in the beginning period. Therefore, the next part of this study presents the theory and hypotheses related to the analyzed content. Finally, followed part was the research method.

## 2. Literature review

### **2.1. Relationship between perceived mental benefits, online trust, hedonic value, and electronic loyalty**

Maintaining close relationships with customers is an essential mission for successful business growth. The relationship-building process goes through seven stages in chronological order: attracting, creating, establishing, developing, maintaining, consolidating, and loyalty. The business-customer relationship is built on the following key elements: trust, customer satisfaction, value, effective communication, and social binding

Kotler et al. (2019) mentioned the 5-step marketing process of business. First, the business will create customer-oriented marketing strategies that include physical benefits (product, price, place, promotion) and mental benefits (people, physical evidence, process). The business will provide customers with excellent value (utilitarian and hedonic) to create excitement and build profitable relationships between seller and buyer. Ultimately, the business will regain value from its customer, that is, loyalty (Molinillo et al., 2021). Moreover, Kuo and Feng (2013) found that recreational, social, and academic interests positively impact community commitments and build customer loyalty. From a slightly different perspective, monetary and non-monetary benefits from customer-friendly programs (such as savings, exploration, entertainment, recognition, and social benefit) will appeal to customers (Ferm & Thaichon, 2021). Hedonic value impacts preference, personal information disclosure, and online shopping (Nguyen & Khoa, 2019b). Consumers weigh the advantages and drawbacks of continuing their connection with a store against the value of the service provided by that business (Bressolles et al., 2015). As a result, the perceived value of a service is a crucial factor in a consumer's purchase choice (Wu et al., 2014). Merchants must provide attractive market offerings to attract clients and boost their desire to utilize an online channel (Lim, 2015). Customers' perceived value is a precursor to their loyalty intent in an e-commerce setting (Handarkho, 2020). Shoppers' propensity to remain loyal to an online store grows in tandem with their estimation of its worth to them (Luo & Ye, 2019). Hence, we propose the hypotheses:

*H1: Hedonic value positively affects electronic loyalty in electronic commerce.*

*H2: Perceived mental benefit positively affects hedonic value in electronic commerce.*

*H3: Perceived mental benefit positively affects electronic loyalty in electronic commerce.*

Verma et al. (2015) have stated that in relationship marketing in e-commerce, a meta-analytic approach consists of three components: (1) user-driven prefixes, seller, and interaction of both parties. (2) Intermediaries such as commitment, trust, satisfaction, and relationship quality, and (3) the relationship's outcome, including the intention to continue, word of mouth, and loyalty to the sales page. Customers' familiarity with buying the website will create other values such as perceived enjoyment, perceived interaction with salespeople or other customers, and perceived control by providing information from the previous purchase. Online trust and perceived mental benefits were two antecedents of personal information disclosure (H. M. Nguyen & Khoa, 2019a; Nguyen & Khoa, 2019b). Moreover, the customer's value when shopping is a mediator in the relationship between trust and loyalty (Sirdeshmukh et al., 2018). In online transactions, businesses need to create many benefits for customers, increasing customers' trust in that business (S. K. Lee & Min, 2021). At the same time, trust is an important factor in online transactions to

create customer loyalty and perceived value (Molinillo et al., 2017). Customers who highly trust a business are more loyal and feel the transaction becomes more valuable than others (Pandey et al., 2020). Therefore, the study proposes the following research hypotheses:

*H4: Online trust positively affects electronic loyalty in electronic commerce.*

*H5: Perceived mental benefits positively affect online trust in electronic commerce.*

*H6: Online trust positively affects hedonic value in electronic commerce.*

## **2.2. Anxiety and its moderating role**

Anxiety is the normal state of feeling in life. It can help an individual stay alert, focus on something, and motivate them to take action and solve problems. However, if anxiety is constant and worsens over time, it transcends the standard human threshold (Scarre, 2012). Anxiety relates to psychological and physiological states with physical, emotional, cognitive, and behavioral factors (Miranda & Balqiah, 2020). It is a feeling caused by fear and sorrow. Even with or without psychological stress, anxiety also creates feelings of fear, worry, and discomfort (Hemmings & Bouras, 2016). Anxiety is considered a normal response to stressors. These emotions interfere with everyday activities like work, school, relationships, or shopping, which cause anxiety disorders. Anxiety is a state of mind representing an individual's short-term negative emotional response to a stimulus/a situation or an individual trait related to the condition (Gilbert et al., 2003). The risk problem creates anxiety and leads to withdrawal from online transactions or loyalty programs (Miranda & Balqiah, 2020). The prior studies pointed out that technology anxiety makes consumer behavior different. Customer loyalty, which is the relationship between the customer and brand, will be strengthened by low technology anxiety; meanwhile, Nsairi and Khadraoui (2013) showed that both perceived value and anxiety impact brand loyalty. The anxiety about technology will play a moderator in the shopping adoption relationship (Bousbahi & Alrazgan, 2015). Anxiety is an important factor in the shopping decision process (Osswald et al., 2012). The anxiety was integrated with the moderating role in the brand loyalty models to measure customer loyalty (Mouakket & Al-hawari, 2012).

Previous studies pointed out online customers are more likely to suffer anxiety than offline shoppers (Gehl, 2017). Anxiety online hinders individuals from using electronic receivers, instant messages, or online databases (Nagar, 2016). Because of the effect of anxiety on behavior, understanding the customers' anxiety will create more opportunities for businesses to reap online commerce. Anxiety is a negative emotion that continually appears in the online shopping process before buying products, e.g., the suitability and the reputation of online sellers; in the buying process; e.g., placing the right products, manipulating correctly on an e-commerce site; and after ordering products, e.g., the security of private information, other people's assessments of product suitability. Hamilton (1959) proposed that each person experiences anxiety differently, and not all serve the same marketing strategy. Anxiety is divided into three levels, i.e., low, moderate, and high (Hamilton, 1959); therefore, marketing programs must be adequately researched to personalize solutions tailored to each group of concerns.

The research on consumer emotions, including positive and negative feelings, has developed over a long period. Anxiety is discussed in consumer behavior related the computer usage (Kang & Lee, 2006) or Internet usage (Joiner et al., 2013). In this case, negative emotions will appear, e.g., anxiety, and it is thought that the cause is due to technology or computer. Computer anxiety is a transient condition of fear, apprehension, intimidation, unease, and aggression when the customer uses or considers interacting with the software and hardware of computers (Brosnan, 1998). Many Internet users are still uncomfortable using online applications and traditional methods instead of the Internet to perform tasks. Many people fear using the Internet to do daily activities

(Joiner et al., 2007). After realizing the benefits of e-commerce, customers with low anxiety can quickly appreciate the hedonic value and easily gain trust in online sellers (Yuan et al., 2022). Conversely, if anxiety is too high, customers may not trust or recognize the value of online transactions. In addition, customers with low anxiety when shopping online are more likely to return to the online store than customers with high anxiety (Annoni et al., 2021). Moreover, anxiety played as the moderator, strengthening the relationship between trust and customer behavior (Miranda & Balqiah, 2020). Anxiety also has an important role in customer relationship marketing and brand loyalty. Abd Aziz (2016) pointed out that the lower the level of anxiety, the higher the effect of value on consumer loyalty. Therefore, we propose the hypothesis from H7a to H7f:

*H7a: Anxiety levels have a moderating effect on the relationships between hedonic value and electronic loyalty*

*H7b: Anxiety levels have a moderating effect on the relationships between perceived mental benefits and hedonic value*

*H7c: Anxiety levels have a moderating effect on the relationships between perceived mental benefits and electronic loyalty*

*H7d: Anxiety levels have a moderating effect on the relationships between online trust and electronic loyalty*

*H7e: Anxiety levels have a moderating effect on the relationships between perceived mental benefits and online trust*

*H7f: Anxiety levels have a moderating effect on the relationships between online trust and hedonic value*

The conceptual model (Figure 1) is established based on previous theories and studies on the relationship between the constructs that are relevant to relationship marketing, such as perceived mental benefits (PMB), online trust (OT), hedonic value (HV), electronic loyalty (ELO). At the same time, based on the context of the study that the environment of a developing country, e-commerce is in the early stage of transitioning into transaction commerce, the research also proposes a moderating role of anxiety (ANX) in e-commerce.

### 3. Methodology

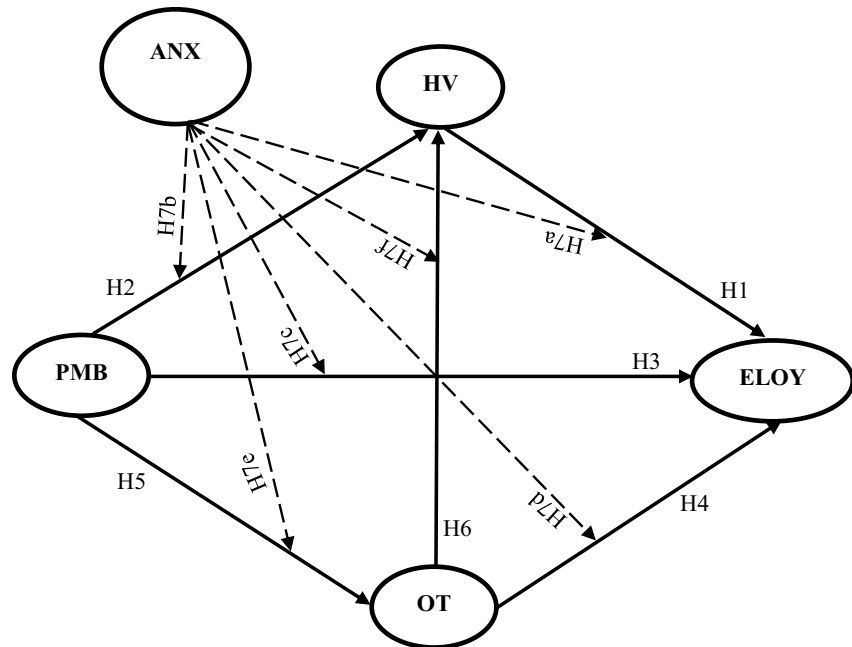
The mixed research method is most appropriate for studies of consumer behavior. Therefore, the research used qualitative and quantitative research methods to achieve the research objectives. The research uses both data types for analysis and discussion, which are primary data and secondary data. Secondary data is collected from online business management organizations, state management agencies in e-commerce, previous research papers, forums, and e-commerce websites. Primary data was collected through two sources: qualitative research and quantitative research. The author uses sequence discussion guides in qualitative research to collect information via in-depth interviews and focus groups. The quantitative research uses questionnaires to survey consumers perceived mental benefit, online trust, hedonic values, electronic loyalty, and anxiety levels.

The discussion board was designed to prompt respondents to discuss the topic's issues and their research experiences. The questionnaire is used for statistical data to test hypotheses. In addition to screening, warming-up, and demographic questions, the questionnaire includes five main parts for measuring concepts; these items were adapted from previous studies. The specific is shown in Table 1.



**Figure 1. The conceptual model.**

Note: PMB: Perceived Mental Benefits, OT: Online Trust, HV: Hedonic Value, ELOY: Electronic Loyalty, ANX levels: Anxiety levels, Direct effect : Moderator effect



Note: PMB: Perceived Mental Benefits, OT: Online Trust, HV: Hedonic Value, ELOY: Electronic Loyalty, ANX levels: Anxiety levels

————— : Direct effect      - - - - - : Moderator effect

Regarding qualitative methods, the research uses historical and phenomenological research by conducting in-depth interviews with five e-commerce business managers, two e-commerce lecturers, and six customers with a precise understanding of e-commerce for the mental benefit, hedonic value, electronic loyalty, and online loyalty trust. Furthermore, the authors held a focus group discussion with eleven experts, customers who often buy online. Sampling for qualitative analysis will use the snowball sampling method. The guide for group discussion and in-depth interviews was based on conducting a semi-structured interview. The discussion results showed that anxiety affects the relationship between the customer and the website when they feel insecure and nervous when they get anxiety. Therefore, they stopped doing business with the website or only shopped in brick-and-mortar stores. Simultaneously, discussion or interview also helps to adjust the content of items appropriate to the Vietnamese context

Meanwhile, quantitative methods are conducted through the consumer survey via questionnaires. Measurement items were coded and used a Likert scale of 5-level (1: completely disagree, and 5: completely agree). Smart-PLS software will be used to analyze the data collected from the survey. The process of evaluating the Partial Least Squares Structural Equation Modeling (PLS-SEM) was based on Hair et al. (2016).

The Hamilton anxiety scale is one of the most used psychological questions to clarify anxiety (Hamilton, 1959). Therefore, it is not a diagnostic tool but a useful and highly effective source for assessing the levels of an individual's anxiety, status, psychological symptoms, fears, and cognitive processes. This instrument includes 14 items. Each item measured by a scale of 5-level (0—none; 1—low; 2—moderate; 3—high; 4—very high). Therefore, a score of 17 or below indicates low anxiety. A score of 18 to 24 will give about moderate anxiety. Finally, if the result gets a score between 24 and 30, it will indicate a deep state of anxiety or a high anxiety level. The higher the score, the greater the anxiety level. Hamilton's study divided it into psychic anxiety (mental



**Table 1. The constructs in the research**

Definition	Item	Source
PMB is the benefits that belong to individuals' psychological and emotional value when shopping online.	... get the enjoyment ... feel social interaction ... can control ... feel perceived discreet	Nguyen and Khoa (2019c)
OT is the consumers' attitudes about online business' ability, the understanding of online merchants, and the presence of a privacy policy.	... honest. ... meet needs ... keep commitment ... is credible ... is capable of fulfilling needs	Liu and Tang (2018)
HV is a behavioral component related to multiculturalism, imagination, and emotions in the consumption process.	... is a pleasure. ... not only buy products but also feel happy. ... feel that product search is entertaining. ... forget all my troubles and discomfort.	C.-H. Lee and Wu (2017)
ELOY is consumer sentiment and support for attitudes towards online service providers and consumer willingness to maintain customer and business relationships.	... preference ... patronage ... premium	Srivastava and Rai (2018)
ANX is a negative emotional response that adversely affects an individual's determination to take a specific action by limiting the judgment of an individual's ability to create performance through emotional stimulation and lower individual expectations of desired performance results.	... worry that the product will not match the description ... feel stressed when ordering new products ... fear my information will be used illegally ... find it difficult to sleep while waiting for the product to be delivered ... could not concentrate on working while I waited for the product ... lost interest after receiving the wrong products, or late delivery	Hamilton (1959)

agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). This research only evaluates psychic anxiety with six items. Therefore, the anxiety level is calculated as follows low ( $\leq 7.29$ ), moderate (7.3–10.7), and high ( $\geq 10.71$ ).

Questionnaires were distributed to 950 respondents using the quota sampling method. Respondents allocated to Vietnam's five largest cities and provinces had the highest e-commerce development index reported by Datareptol.com. (2019). The number of valid questionnaires was 917; through descriptive statistics, the number of male gender in the survey was 458, accounting for 49.9%; The age of respondents is relatively suitable for those under 20 years old (15.2%), from 20 to 24 years old (17%), from 25 to 29 years old (27.7%), from 30 to 34 years old (21%), and over 35 years old (19.1%). In addition, the proportion of education levels are graduated from university or higher (45.2%), college (33.4%), and the rest is high school accounting for 21.5%.

#### 4. Results

This study followed a procedure proposed by Hair et al. (2016) that includes: (1) Assessing the measurement and the collinearity, (2) Analyse the PLS-SEM, and (3) Assessing the  $R^2$ ,  $f^2$ , and  $Q^2$  index. After that, the study presented the mediating role of online trust and hedonic value (4) and the moderating role of anxiety (5).

#### 4.1. The measurement and the collinearity Assessment

The result shows that the research scale is reliable with Cronbach's Alpha, which is higher than 0.7 (the minimum of CA in Table 2 is 0.774). Moreover, all constructs' composite reliability values are more than the threshold of 0.7, which can satisfy the internal consistency reliability (the minimum of CR in Table 2 is 0.878). Therefore, all scales in this study are reliable.

The next step will assess the convergent validity of the items in this research. The average variance extracted (AVE) and the value of the outer loadings will be used. The higher the items' outer loading, the more items will measure the same construct. The research concepts' external loadings values reached the threshold of 0.708, of which the lowest value in Table 2 was 0.76. Moreover, the AVE value of the research concepts is more significant than 0.5 (the smallest AVE value in Table 2 is 0.644), suggesting that the group's items will explain more than half the construct's variance. Hence, all constructs get convergent validity.

Discriminant validity is also a critical criterion in research. Discriminant validity is the degree to which a building is genuinely different from the others by the empirical standard. Therefore, discriminant validity means that a construct is unique in the model and is not duplicated with the other. HTMT value is suggested to check the discriminant validity. The analysis result also showed that the value of HTMT for all pairs of constructs in the matrix is less than the threshold of 0.850 (the most substantial HTMT value in Table 3 is 0.848). From this, we can conclude that the constructs in the research model achieve discriminant validity.

According to the analysis result in Table 3, the VIF coefficients of the constructs are all less than 3, showing that the multicollinearity phenomenon between the independent variables does not affect the testing of research hypotheses.

#### 4.2. The PLS-SEM assessment

The study used a bootstrapping technique with a repeat sample size of 5,000 random subsamples with an initial sample size of 917. The estimation results in Table 4 show that all Beta values were significant in the 99% confidence level ( $p$ -value = 0.000). Except for the relationship between PMB and ELOY with a 95% confidence level, the  $p$ -value = 0.001. Thus, the estimates in the model can be concluded as reliable. Furthermore, the standardized root means square residual (SRMR) is 0.048, which revealed that this study model had a good fit with SRMR must be less than 0.08,

**Table 2. Result of reliability and convergent validity**

	Outer loadings	CA	CR	AVE
HV	[0.861–0.910]	0.899	0.930	0.769
OT	[0.775–0.852]	0.886	0.917	0.689
PMB	[0.760–0.836]	0.815	0.878	0.644
ELOY	[0.818–0.847]	0.774	0.869	0.689

Note: CA: Cronbach's Alpha; CR: Composite Reliability; AVE: Average Variance Extracted

**Table 3. Result of discriminant validity**

	Collinearity			HTMT Value		
	PMB	OT	ELOY	HV	OT	PMB
HV			2.48			
OT	1.988		2.33	0.783		
PMB	1.988	1.0	2.52	0.848	0.829	
ELOY				0.812	0.816	0.797

**Table 4. Result of PLS-SEM**

Relationship	H	Beta	p-value	Result
HV → ELOY	H1	0.329	0.000	Supported
PMB → HV	H2	0.464	0.000	Supported
PMB → ELOY	H3	0.160	0.001	Supported
OT → ELOY	H4	0.333	0.000	Supported
PMB → OT	H5	0.705	0.000	Supported
OT → HV	H6	0.372	0.000	Supported
<b>Model fit:</b> SRMR = 0.048; NFI = 0.906				

whereas the Normed Fit Index (NFI) equal to 0.811 was also measured and satisfied the criterion of NFI must be higher than 0.9. Therefore, the model is fitted with all accepted hypotheses.

#### 4.3. $R^2$ , $f^2$ , $Q^2$ index assessment

The  $R^2$  value is the coefficient of determination, which indicates the research model's relevance, meaning that the independent variables explain the percentage of the dependent variable's variation.  $R^2$  values are assessed as grades 0.25, 0.5, and 0.75, corresponding to weak, moderate, and stable levels. In consumer behavior studies, the  $R^2$  value of 0.2 is considered high. For example, in Table 5, the  $R^2$  of the dependent variables reached the allowable value and nearly reached the level of 0.5; namely, the  $R^2$  value of HV is 0.597, the  $R^2$  value of HV is 0.497, and the  $R^2$  value of HV is 0.550. All  $R^2$  values are on moderate value.

The study will use  $f^2$  to evaluate the effect size recommended by many journalists and reviewers. The levels of  $f^2$  are assessed in order of 0.02, 0.15, and 0.35, respectively, low, moderate, and high. Table 5 pointed out that the effect size of the ELOY factors is small, which is  $f^2_{PMB \rightarrow ELOY} = 0.023$ ,  $f^2_{HV \rightarrow ELOY} = 0.097$ ,  $f^2_{OT \rightarrow ELOY} = 0.106$ . Meanwhile, the  $f^2$  coefficient of influence of factors on HV is at a moderate level  $f^2_{OT \rightarrow HV} = 0.172$ ,  $f^2_{PMB \rightarrow HV} = 0.269$ . PMB has a high effect size on OT with  $f^2_{PMB \rightarrow OT} = 0.988$ .

#### 4.4. The moderator and mediator assessment

This study will use the evaluation method of Andrews et al. (2018) to evaluate the mediating role of the moderator (M) for the independent variable (X) and the dependent variable (Y) with four criteria, including (1) X has a significant effect on M, (2) M has the significant effect on Y, (3) X has the significant effect on Y, and (4) the effect level of X on Y is decreased or no significant with the effect of M. The mediating effect of HV and OT is shown in Tables 4 and 6

For HV in the relationship between PMB and ELOY: (1) PMB has significant effect on HV ( $B = 0.464$ ,  $p\text{-value} = 0.000$ ), (2) HV has the significant effect on ELOY ( $B = 0.329$ ,  $p\text{-value} = 0.000$ ), (3) PMB has the significant effect on ELOY ( $B = 0.160$ ,  $p\text{-value} = 0.001$ ), and (4) the effect level of PMB on ELOY is

**Table 5. Result of  $R^2$ ,  $f^2$ ,  $Q^2$**

	$R^2$	$f^2$	$Q^2$
HV	0.597	0.172/0.269 (OT/PMB)	0.442
OT	0.497	0.988 (PMB)	0.313
ELOY	0.550	0.097/0.106/0.023 (HV/OT/PMB)	0.353

**Table 6. Result of mediating assessment**

Relationship	Beta	p-value	Result
PMB → OT → HV	0.262	0.000	Supported
OT → HV → ELOY	0.281	0.000	Supported
PMB → OT → HV → ELOY	0.086	0.000	Supported
PMB → HV → ELOY	0.153	0.000	Supported
PMB → OT → ELOY	0.235	0.000	Supported

decreased with effect of HV ( $B = 0.153$ ,  $p\text{-value} = 0.000$ ). Therefore, HV is a mediator in the relationship between PMB and ELOY.

For OT in the relationship between PMB and ELOY: (1) PMB has significant effect on OT ( $B = 0.705$ ,  $p\text{-value} = 0.000$ ), (2) OT has the significant effect on ELOY ( $B = 0.333$ ,  $p\text{-value} = 0.000$ ), (3) PMB has the significant effect on ELOY ( $B = 0.160$ ,  $p\text{-value} = 0.001$ ), and (4) the effect level of PMB on ELOY is increased with effect of OT ( $B = 0.235$ ,  $p\text{-value} = 0.000$ ). Therefore, OT is not a mediator in the relationship between PMB and ELOY.

For HV and OT in the relationship between PMB and ELOY: (1) PMB has significant effect on HV through OT ( $Beta = 0.262$ ,  $p\text{-value} = 0.000$ ), (2) OT through HV has the significant effect on ELOY ( $Beta = 0.281$ ,  $p\text{-value} = 0.000$ ), (3) PMB has the significant effect on ELOY ( $Beta = 0.160$ ,  $p\text{-value} = 0.001$ ), and (4) the effect level of PMB on ELOY is increased with effect of OT and HV ( $Beta = 0.086$ ,  $p\text{-value} = 0.000$ ). Therefore, OT and HV are two mediators in the relationship between PMB and ELOY.

Based on the method of determining the anxiety level presented in the method section based on Hamilton's assessment method, the study has divided the three groups of anxiety levels in the survey, which include low anxiety level, moderate anxiety level, and high anxiety level, as shown in Table 7.

This study used multi-group analysis to check whether the pre-determined anxiety group of data had significant differences in their group-specific parameter estimates (e.g., path factor). SmartPLS provides results based on bootstrapping results from each group. PLS-MGA (PLS Multi-Group Analysis) is proposed as a non-parametric significance testing tool for the difference of specific group results based on the bootstrapping PLS-SEM results. The result is a significant difference in the probability of a 5% error if the  $p\text{-value}$  is less than 0.05 or greater than 0.95 for a specific difference of a specific group path factor. PLS-MGA is used for assessing the moderating role of anxiety via three comparative groups, namely low-moderate, moderate-high, and low-high.

Table 8 shows a difference in the relationships between low and moderate anxiety and high anxiety. For customers with a low level of anxiety, all hypotheses are supported. However, the perceived mental benefits significantly impact electronic loyalty, online trust, and hedonic value. Moreover, the perceived mental benefits have a more substantial influence than online trust in the impact of the hedonic value. All hypotheses are also accepted for customers with a high level of

**Table 7. The anxiety levels statistic**

Level	Frequency	The research score (6 items)	The Hamilton score (14 items)
Low	508	$\leq 7.29$	$\leq 17$
Moderate	172	7.3–10.7	18–24
High	237	$\geq 10.71$	$\geq 24$

**Table 8. The result of MGA based on the anxiety levels**

	Relationship	$\beta$ (LOW)	$\beta$ (MOD)	$\beta$ (HIGH)	p-value			Result
					(LOW)	(MOD)	(HIGH)	
H7a	HV → ELOY (H1)	0.224	0.468	0.369	0.000	0.000	0.000	Rejected
H7b	PMB → HV (H2)	0.44	0.282	0.316	0.000	0.000	0.000	Rejected
H7c	PMB → ELOY (H3)	0.434	0.243	0.264	0.02	<b>0.178</b>	0.023	Supported
H7d	OT → ELOY (H4)	0.416	0.542	0.495	0.000	<b>0.063</b>	0.013	Supported
H7e	PMB → OT (H5)	0.714	0.704	0.693	0.000	0.000	0.000	Rejected
H7f	OT → HV (H6)	0.143	0.135	0.211	0.000	0.001	0.000	Rejected

anxiety. However, the online trust had the most substantial impact on electronic loyalty, followed by hedonic value and perceived mental benefit. As for influencing hedonic value, the impact level is still the perceived mental benefit, then online trust.

In contrast, these relationships persist for groups with low and high anxiety levels; for the group with moderate anxiety levels, only the hedonic value affects electronic loyalty. The perceived mental benefits and online trust still impact the hedonic value. Specifically, for a group of customers with moderate anxiety, the study result showed that hypotheses H3 and H4 were rejected, meaning there is no relationship between perceived mental benefits and electronic loyalty, and there is no relationship between online trust and electronic loyalty.

## 5. Discussion

The perceived risks in online transactions also always exist for the customers (To et al., 2007). They are quite cautious when searching, viewing product images on the website, then going to the seller's store to buy instead of ordering online (Ashrianto & Yustitia, 2020). About 62% of online purchases are currently Cash on Delivery (COD), a big challenge for e-commerce (Khoa, 2020). It is challenging to change the habit of consumer behavior. Because most customers still want to hold the product and then decide to pay for shopping. Customers lack trust in online services and the online providers' support. Besides, personal information on e-commerce transactions has also received much negative consumer feedback (H. M. Nguyen & Khoa, 2019a). Accordingly, many pressing consumers, when their names, ages, phone numbers, and addresses may be provided to third parties by e-commerce enterprises, affecting customers' information security and confidentiality. Also, buying at stores is still most popular with many consumers because they can quickly evaluate the product or service they want to buy. Subjective aspects of consumers, especially the anxiety of online victims, were significantly concerned in criminological literature until things got worse for them; instead of using the Internet as the most effective solution for trading, customers returned to the traditional direct trading solution (M. Lee & Mythen, 2017; Spithoven, 2017). As online victims become an emerging area of research, the obsession with credit card theft or terrorism by advertising messages is increasing daily. It is worth noting that only a limited number of empirical studies are available on how online threats and dangers are experienced by online shoppers (Brands & van Wilsem, 2019; Raji et al., 2020)

The study's result pointed out that the electronic loyalty was impacted by the hedonic value (Beta = 0.329, sig. = 0.000), perceived mental benefits (Beta = 0.160, sig. = 0.001), and online trust (Beta = 0.333, sig. = 0.000); consequently, the hypothesis H1, H4 was supported in the 99% of confidence level, and H3 in the 95% of confidence level. Firstly, the hedonic value positively impacts electronic loyalty in the e-commerce market; this conclusion was accepted by prior studies in the traditional and online environment (Bolton & Drew, 1991; Sirdeshmukh et al., 2018). In marketing definition, the mission of the business is to create value for the customer and capture the value from the customer (Kotler et al., 2021); in this case, the online business will create the

hedonic value for the customer to get the customers' electronic loyalty from the customer as e-WOM or online repurchase in the online market (Kartajaya et al., 2019). Moreover, the result expands the S-O-R model, which was proposed by Mehrabian and Russell (1974); the hedonic value is the Organism of the online customer after the Stimulus from the online seller as the enjoyment, control, discreet shopping, and social interaction; finally, the electronic loyalty is the response of customer under Organism as hedonic value. It is easy to realize that as the pragmatic values that businesses bring to customers reach the limit, that is, almost similar to each other, the factor of hedonic value is meaningful when creating customer loyalty when buying from e-commerce sites or online shopping applications (Albayrak et al., 2019; S. Lee & Kim, 2018). In the relationship between online trust and electronic loyalty, the result found that online trust positively affected electronic loyalty, which is presented in prior studies as the framework of relationship marketing in the traditional environment (Palmatier et al., 2018) as well as the online environment (Verma et al., 2015). The online market has many e-commerce sites providing goods and services to customers, however, returning to the previous e-commerce site to buy goods depends on the customer's trust in that page (Pan et al., 2012). Many customers complain that online sales pages are not clear regarding goods return, keeping customers' information confidential, leading to insecurity in transactions with that website and switching to suppliers when there is a need to purchase (Westaby et al., 2016). At the same time, trust in the website's privacy policy also creates the intention of providing more private information to serve the loyalty programs of online businesses. Lastly, the perceived mental benefits were found to positively impact electronic loyalty in this research. Mimouni-Chaabane and Volle (2010) mentioned the monetary and non-monetary benefits as money saving, entertainment, recognition, and social benefits will attract customers and make them return to transacting the previous e-commerce website. The perceived benefits will create positive comments on the website after purchasing the product/service. At the same time, perceived mental benefits enhance target product reviews by engaging people in post-purchasing behaviors, such as narrating, persuading others through positive emotions, and reducing negative thinking (Apenes Solem, 2016; Hajli et al., 2017; Kang et al., 2014).

Perceived mental benefits have a positive effect on hedonic value in e-commerce (Beta = 0.464, sig. = 0.000) and online trust (Beta = 0.705, sig. = 0.000); therefore, the hypothesis H2 and H5 were also supported through research results in the 99% of confidence level. The hedonic value is seen as a user's overall assessment of the benefits they receive in comparison to the costs; hence, online shoppers feel happy, comfortable, or excited to use e-commerce sites to select and shop for products by features such as entertainment, personalization, privacy, or development friendship in the shopping process (Chen & Dubinsky, 2003; Sánchez-Fernández & Iniesta-Bonillo, 2016). Furthermore, the perceived mental benefits are the premise of trust in online shopping. The same is valid for developing countries, where the benefits are always prioritized in trusting an online seller (Park et al., 2019). Consumers often feel confident that online suppliers bring them the right products they need at a reasonable price, shopping for privacy or easy control (Kim & Peterson, 2017). When businesses provide the right products/services that customers need through perceived quality, these products/services will help the customers deal with the problems, worries, and pressures in life (Brown & Jayakody, 2008); or online businesses ensure privacy and security in transactions is also seen as a factor in creating an online trust for customers (Bart et al., 2018).

The research results in Table 4 also show that online trust positively affects consumers' hedonic value when shopping from online sites (Beta = 0.372, sig. = 0.000); hence, hypothesis H6 was accepted at a 99% of confidence level. Furthermore, a trustworthy sales site reduces customer anxiety about risks or losses, increasing mental values such as happiness, satisfaction, and entertainment (Albayrak et al., 2019). Previous studies have also shown that trust will make customers feel more secure when making online transactions; thereby, the value of the transaction will increase not only in terms of utilitarian value but also in hedonic value (Rouibah et al., 2021). Consumers are less likely to be wary of an organization after developing confidence in it because of the relational advantages they get from the contact between the company and the

consumer (Hao et al., 2015). Customers have a more favorable impression of the online business and its services when their purchases have a high success rate. That is why trust is crucial in determining how much anything is worth (Chai et al., 2015). This contribution is important for businesses to realize that value and trust have a positive relationship.

The study also confirmed mediating effects such as hedonic value, a mediator between perceived mental benefits and electronic loyalty, or the mediation of online trust and hedonic value in the long-term relationship between a business and a customer. This result confirms the irreplaceable mediating role of hedonic value and online trust in developing relationship marketing strategies (Sirdeshmukh et al., 2018; Verma et al., 2015). Of course, benefits are still part of maintaining the relationship between the seller and the buyer. However, if it comes with online trust and hedonic value, it makes sense and is more relevant for emerging markets like Vietnam and other developing countries.

According to Table 8, anxiety levels impact the relationship between perceived mental benefits and electronic loyalty, as well as online trust and electronic loyalty. Hence, hypotheses H7c and H7d were supported; hypotheses H7a, H7b, H7e, and H7f were rejected. For groups of customers with moderate anxiety levels, perceived mental benefits (Beta = 0.243, sig. = 0.178) and online trust (Beta = 0.542, sig. = 0.063) were not seen as antecedents for their loyalty, only hedonic value (Beta = 0.468, sig. = 0.000) was the only positive premise for their electronic loyalty. Gupta and Arora (2017) showed that consumers do not accept online shopping on mobile devices because of (1) self-efficacy, (2) anxiety, and (3) the relative advantages of shopping. In the online environment, the high-anxiety customer needs online trust and hedonic value to be loyal to an online supplier; meanwhile, the perceived mental benefits and online trust are extremely important for customers with low anxiety. Bridges and Florsheim (2008) look at the factors of flow theory in the online context to better understand how being in a flow state can affect buying behavior in the Internet environment. They found that some flow elements (such as a sense of skill, control, and effective interaction) can increase the utilitarian value of the online shopping experience, leading to a higher likelihood of buying online. A difficult or challenging interaction can negatively impact the functional value of the online experience (Senecal et al., 2002). Factors related to the hedonic value of the flow can enhance the enjoyment of the online experience on the flow but may not lead to an increase in purchasing. Online shopping in some developing countries, such as Vietnam, is a state of flow that acts as a precursor to compulsive behavior (Faber & O'Guinn, 1991); hence, marketers are trying to create direct flow online to avoid negative social feelings toward consumers, including anxiety. It is policies aimed at increasing perceived hedonic value, such as fun, with entertainment categories that will not reduce any benefits accrued when potential customers are in a flow state even though they are risky. That is why there are different anxiety levels; there is no difference in the relationship between perceived mental benefits and hedonic value in this study (H7b) and the relationship between hedonic value and electronic loyalty (H7a). Besides, benefits in shopping are the prefixes that positively affect supplier trust (Nguyen & Khoa, 2019b; Park et al., 2019). Investment in trust in abstract systems, especially online trading systems, is a central feature of modern life. No one can completely deny the abstract systems associated with modern organizations; their function knowledge is necessarily limited because of their diversity and complexity. Consequently, trust, or anonymous commitments, becomes a very important means of leapfrogging the user-system relationship (Rempel et al., 1985). Trust is considered the highest guarantee for e-commerce sites, so customers can easily ignore the anxiety when shopping online if they realize the benefits, get the hedonic value, and trust the seller (H7e and H7f).

## 6. Conclusion

Perceived mental benefit, hedonic value, online trust, and electronic loyalty were all identified as elements in the study's findings responsible for establishing and maintaining long-term connections between companies and their online customers. All of the theories tested out to be correct. It is also established that online trust has a positive hedonic value and mediation function in the connection



between perceived mental advantages and electronic loyalty. Anxiety levels about the model's relationships are found to vary, as is seen by this research. It turns out that just a small amount of worry affects how faithful an electronic user is. If you continue this pattern at the next tense relationship level, you will not be surprised by anything. Whether or not an electronic loyalty program is affected at all is a key differentiator. Although the psychological advantage is less important to customers with high anxiety, it still plays a significant role in repeatedly determining which websites they return to. On the other side, high-anxiety clients' electronic loyalty is most affected by the online trust.

### **6.1. The theoretical contributions**

The qualitative results revealed a positive relationship between four research constructs: perceived mental benefits, hedonic value, online trust, and electronic loyalty. Besides, the anxiety levels impact the relationship between (1) perceived mental benefits and electronic loyalty and (2) online trust and electronic loyalty. The study's result has contributed some theoretical aspects as below.

Firstly, the relationship between perceived benefits, trust, perceived value, and loyalty has been confirmed by many prior studies. This study expanded the theoretical model by pointing to the new relationship related to mental and psychological antecedents of loyalty, perceived mental benefits, and hedonic value. In modern life, psychological factors have become increasingly important in impacting consumer behavior; consequently, the research added a new contribution to behavior science when it proved that electronic loyalty is significantly affected by the perceived mental benefits of hedonic value online trust. Moreover, the perceived mental benefits of e-commerce have been found as the positive antecedence of online trust and hedonic value. Perceived mental benefits are the novel factor that describes what benefits belong to the hedonic state and flow theory: perceived enjoyment shopping, perceived discreet shopping, perceived social interaction, and perceived control.

Secondly, anxiety is a new topic in prior studies. Unlike previous studies, this study is based on statements on online shoppers' anxiety state of Hamilton (1959) to aggregate and group online consumer anxiety into three groups: low, moderate, and high. Previous studies mainly investigated and assessed anxiety with direct measurement indexes and considered the direction of behavioral theory; however, this study develops a theoretical psychological-based anxiety scale and a subgroup based on principles outlined by Hamilton (1959). The grouping was adjusted based on the emotional and psychological aspects of the consumer and eliminated measures of the behavior of anxiety.

Lastly, the previous studies on technology defined anxiety as the antecedent of the user behaviors as adoption or intention. The others pointed out that anxiety has been the moderator or mediator. In this study, the bond between business and customers was governed by anxiety levels rather than the usual anxiety. The research results also show that different anxiety levels affect the relationship between emotional benefit and electronic loyalty and between online trust and electronic loyalty.

### **6.2. The managerial implication**

Products and services diversification is also a strategy to increase consumer shopping excitement, which Amazon.com is doing very well. First, Amazon offers many products or services, which means they have more product choices for customers than e-commerce sites. It is easier for customers to shop or get almost everything from a store instead of going between multiple people, making it a simple option. The online business attracted customers from a wide range of required products and retained customers for the other items they sold by having such a wide variety of products. This option also benefits the company regarding customer lifetime value; by offering such a wide variety of products, the customer is likelier to continue to buy in the future. This convenience appeals to many consumers looking for the easiest way to obtain their product.

Another direction for online businesses is to convert to social commerce, which allows customers to purchase products at discounted prices compared to individual purchases jointly. Create linkage modes when buying or sharing information about a certain item among people with similar interests in the goods. Businesses also ensure they will not sell their customer information to feel private when interacting with their e-commerce site. In addition, businesses must disclose their privacy policy on their e-commerce site to ensure customer privacy. In short, businesses must pay more attention to customer privacy when buying online. Once they choose an e-commerce site to shop for goods online, they want to keep their buying history a secret. Therefore, businesses must define a more realistic policy to promote customers' spiritual benefits from e-commerce. Research believes that adopting discreet shipping, as suggested above, is a good way to ensure buying privacy for customers online. Furthermore, if online retailers do not easily collect information from consumers because no customers share personal information, the online retailer combines with customers in a more user-friendly way, such as through social networks (Facebook, Instagram, Tweets). By offering personalized or customized shopping experiences, online stores and brands gain real opportunities to differentiate themselves from others. Personalization and customization are new ways to succeed by giving customers a great customer experience.

Businesses must pay more attention to their customers' mental and socio-emotional needs. Businesses need to create online shopping communities by building forums or allowing customers to interact with each other during the purchase process. In addition, businesses organize polls of customers to improve services or support customers to use products correctly with the functions of the product, thereby improving product use efficiency and the client's job. Build regular or year-end customer conferences. They praise the company's high-buying customers as well as honor loyal customers. Businesses need to have many images and clearly describe the product's functions and uses to avoid customer disappointment about product quality and shape. In addition, businesses should provide more evidence from reliable sources to evaluate when choosing to buy products. Moreover, businesses need to build a system of customer comments and reviews to share experiences about products and services; from there, as a basis for other customers to choose products and services.

For low anxiety groups, online businesses should focus on building emotional benefits for customers; The next is to give customers a sense of entertainment value when buying from an e-commerce site. In contrast, for the moderate anxiety group, develop policies that create entertaining perceived value for the customer; Next is creating perceived mental benefits for online customers. Trust is the most important factor, particularly for customers with a high state of anxiety when buying online. Businesses need to build trust online for customers first; the next is to provide values for spiritual benefits and, finally, to entertain perceived values to customers.

### **6.3. Limitations and future research**

The authors' effort has yielded positive results in relationship research in e-commerce and anxiety; however, limitations are inevitable. First, this research focused on the e-commerce industry without going into specific types such as mobile commerce, social commerce, or a specific product/service; this limitation helps the study create generalizations about online transactions but lacks specificity in building scales and research context. Although this study has exploited all the relationships between the factors in the research model, the relationship between hedonic value and online trust only assesses the effect of online trust on hedonic value, which lacks the opposite direction. The research exploits the aspect of anxiety will bring about a negative psychological understanding of online consumers; hence, there is a need for more in-depth studies focusing on evaluating the anxiety factors for online shopping, which can serve as the antecedence of consumer behavior, the moderator or the mediator in the research model. Moreover, further studies focus on both mental and monetary benefits and utilitarian and hedonic value in the long-term relationship between business and customer

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## Author details

Bui Thanh Khoa<sup>1</sup>

E-mail: [buihanhkhoea@iuh.edu.vn](mailto:buihanhkhoea@iuh.edu.vn)

ORCID ID: <http://orcid.org/0000-0002-9878-2164>

Tran Trong Huynh<sup>2</sup>

ORCID ID: <http://orcid.org/0000-0001-9145-2894>

<sup>1</sup> Faculty of Commerce and Tourism, Industrial University of Ho Chi Minh City, Ho Chi Minh City, Vietnam.

<sup>2</sup> Department of Mathematics, FPT University, Hanoi, Vietnam.

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## References

- Abd Aziz, S. (2016). Does fear of new car technologies influence brand loyalty relationship? *Journal of Marketing Management*, 4(1), 125–136. <https://doi.org/10.15640/jmm.v4n1a12>
- Albayrak, T., Karasakal, S., Kocabulut, Ö., & Dursun, A. (2019). Customer loyalty towards travel agency websites: The role of trust and hedonic value. *Journal of Quality Assurance in Hospitality & Tourism*, 21(1), 50–77. <https://doi.org/10.1080/1528008x.2019.1619497>
- Andrews, J. C., Netemeyer, R. G., Burton, S., Moberg, D. P., & Christiansen, A. (2018). Understanding adolescent intentions to smoke: An examination of relationships among social influence, prior trial behavior, and antitobacco campaign advertising. *Journal of Marketing*, 68(3), 110–123. <https://doi.org/10.1509/jmkg.68.3.110.34767>
- Annoni, A. M., Petrocchi, S., Camerini, A.-L., & Marciano, L. (2021). The relationship between social anxiety, smartphone use, dispositional trust, and problematic smartphone use: A moderated mediation model. *International Journal of Environmental Research and Public Health*, 18(5), 2452. <https://doi.org/10.3390/ijerph18052452>
- APA (2019). *APA Dictionary of Psychology*. Washington, DC: American Psychological Association.
- Apenes Solem, B. A. (2016). Influences of customer participation and customer brand engagement on brand loyalty. *Journal of Consumer Marketing*, 33(5), 332–342. <https://doi.org/10.1108/jcm-04-2015-1390>
- Ashrianto, P. D., & Yustitia, S. (2020). The use of social media in searching for information about Papua. *Jurnal The Messenger*, 12(2), 122. <https://doi.org/10.26623/themessenger.v12i2.1939>
- Bagozzi, R. P., Belanche, D., Casaló, L. V., & Flavián, C. (2016). The role of anticipated emotions in purchase intentions. *Psychology & Marketing*, 33(8), 629–645. <https://doi.org/10.1002/mar.20905>
- Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science*, 27(2), 184. <https://doi.org/10.1177/0092070399272005>
- Bart, Y., Shankar, V., Sultan, F., & Urban, G. L. (2018). Are the drivers and role of online trust the same for all web sites and consumers? A large-scale exploratory empirical study. *Journal of Marketing*, 69(4), 133–152. <https://doi.org/10.1509/jmkg.2005.69.4.133>
- Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. International Universities Press.
- Beck, A. T., & Emery, G. (1979). *Cognitive therapy of anxiety and phobic disorders*. Center for Cognitive therapy.
- Bolton, R. N., & Drew, J. H. (1991). A multistage model of customers' assessments of service quality and value. *Journal of Consumer Research*, 17(4), 375–384. <https://doi.org/10.1086/208564>
- Bousbahi, F., & Alrazgan, M. S. (2015). Investigating IT faculty resistance to learning management system adoption using latent variables in an acceptance technology model. *The Scientific World Journal*, 2015, 375651. <https://doi.org/10.1155/2015/375651>
- Brands, J., & van Wilsem, J. (2019). Connected and fearful? Exploring fear of online financial crime, Internet behaviour and their relationship. *European Journal of Criminology*, 1–22. <https://doi.org/10.1177/147737081983961910.1177/1477370819839619>
- Bressolles, G., Durrieu, F., & Deans, K. R. (2015). An examination of the online service-profit chain. *International Journal of Retail & Distribution Management*, 43(8), 727–751. <https://doi.org/10.1108/IJRDM-11-2013-0214>
- Bridges, E., & Florsheim, R. (2008). Hedonic and utilitarian shopping goals: The online experience. *Journal of Business Research*, 61(4), 309–314. <https://doi.org/10.1016/j.jbusres.2007.06.017>
- Brosnan, M. J. (1998). The impact of computer anxiety and self-efficacy upon performance. *Journal of Computer Assisted Learning*, 14(3), 223–234. <https://doi.org/10.1046/j.1365-2729.1998.143059.x>
- Brown, I., & Jayakody, R. (2008). B2C e-commerce success: A test and validation of a revised conceptual model. *The Electronic Journal Information Systems Evaluation*, 11(3), 167–184.
- Chai, J. C. Y., Malhotra, N. K., & Alpert, F. (2015). A two-dimensional model of trust-value-loyalty in service relationships. *Journal of Retailing and Consumer Services*, 26, 23–31. <https://doi.org/10.1016/j.jretconser.2015.05.005>
- Chen, Z., & Dubinsky, A. J. (2003). A conceptual model of perceived customer value in e-commerce: A preliminary investigation. *Psychology & Marketing*, 20(4), 323–347. <https://doi.org/10.1002/mar.10076>
- Datareportal.com. (2019). *Digital 2019: Vietnam*. <https://datareportal.com/reports/digital-2019-vietnam>
- Doney, P. M., & Cannon, J. P. (2018). An examination of the nature of trust in buyer-seller relationships. *Journal of Marketing*, 61(2), 35–51. <https://doi.org/10.1177/002224299706100203>
- Faber, R., & O'Guinn, T. (1991). *A biopsychosocial model of the causation of compulsive buying*. Paper presented at the annual meeting of the Association for Consumer Research. Chicago. IL. Association for Consumer Research.
- Ferm, L.-E. C., & Thaichon, P. (2021). Customer pre-participatory social media drivers and their influence on attitudinal loyalty within the retail banking industry: A multi-group analysis utilizing social exchange theory. *Journal of Retailing and Consumer Services*, 61, 102584. <https://doi.org/10.1016/j.jretconser.2021.102584>
- Gehl, D. (2017). *How to reduce "purchase anxiety."* <http://www.entrepreneur.com/article/187592>
- Gilbert, D., Lee-Kelley, L., & Barton, M. (2003). Technophobia, gender influences and consumer decision-making for technology-related products. *European Journal of Innovation Management*, 6(4), 253–263. <https://doi.org/10.1108/14601060310500968>
- Gupta, A., & Arora, N. (2017). Understanding determinants and barriers of mobile shopping adoption using

- behavioral reasoning theory. *Journal of Retailing and Consumer Services*, 36, 1–7. <https://doi.org/10.1016/j.jretconser.2016.12.012>
- Hackbarth, G., Grover, V., & Mun, Y. Y. (2003). Computer playfulness and anxiety: Positive and negative mediators of the system experience effect on perceived ease of use. *Information & Management*, 40(3), 221–232. [https://doi.org/10.1016/S0378-7206\(02\)00006-X](https://doi.org/10.1016/S0378-7206(02)00006-X)
- Hair, J. F., Jr, Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.
- Hajli, N., Shanmugam, M., Papagiannidis, S., Zahay, D., & Richard, M.-O. (2017). Branding co-creation with members of online brand communities. *Journal of Business Research*, 70, 136–144. <https://doi.org/10.1016/j.jbusres.2016.08.026>
- Hamilton, M. (1959). The assessment of anxiety states by rating. *British Journal of Medical Psychology*, 32(1), 50–55. <https://doi.org/10.1111/j.2044-8341.1959.tb00467.x>
- Handarkho, Y. D. (2020). The factors influencing customer loyalty in social commerce platform: Variety-seeking and social impact perspective. *International Journal of Web Information Systems*, 16(4), 369–386. <https://doi.org/10.1108/ijwis-04-2020-0021>
- Hansen, T. (2005). Perspectives on consumer decision making: An integrated approach. *Journal of Consumer Behaviour: An International Research Review*, 4(6), 420–437. <https://doi.org/10.1002/cb.33>
- Hao, S. S. L., Balaji, M., & Kok Wei, K. (2015). An investigation of online shopping experience on trust and behavioral intentions. *Journal of Internet Commerce*, 14(2), 233–254. <https://doi.org/10.1080/15332861.2015.1028250>
- Hemmings, C., & Bouras, N. (2016). *Psychiatric and behavioural disorders in intellectual and developmental disabilities*. Cambridge University Press. <https://doi.org/10.1017/CBO9781107588714>
- Henson, B., & Reyns, B. W. (2015). The only thing we have to fear is fear itself . . . and crime: The current state of the fear of crime literature and where it should go next. *Sociology Compass*, 9(2), 91–103. <https://doi.org/10.1111/soc4.12240>
- Hirschman, E. C., & Stern, B. B. (1999). The roles of emotion in consumer research. *Advances in Consumer Research*, 26(1), 4–11.
- Joiner, R., Brosnan, M., Duffield, J., Gavin, J., & Maras, P. (2007). The relationship between internet identification, internet anxiety and internet use. *Computers in Human Behavior*, 23(3), 1408–1420. <https://doi.org/10.1016/j.chb.2005.03.002>
- Joiner, R., Gavin, J., Brosnan, M., Cromby, J., Gregory, H., Guiller, J., . . . Moon, A. (2013). Comparing first and second generation digital natives' Internet use, Internet anxiety, and Internet identification. *Cyberpsychology, Behavior, and Social Networking*, 16(7), 549–552. <https://doi.org/10.1089/cyber.2012.0526>
- Kang, Y. S., & Lee, H. (2006). Exploring the role of computer self-efficacy and computer anxiety in the formation of e-satisfaction. Paper presented at the *Proceedings of KMIS (Fall, 2006)*, Korea. The Korea Society of Management Information System.
- Kang, J., Tang, L., & Fiore, A. M. (2014). Enhancing consumer-brand relationships on restaurant Facebook fan pages: Maximizing consumer benefits and increasing active participation. *International Journal of Hospitality Management*, 36, 145–155. <https://doi.org/10.1016/j.ijhm.2013.08.015>
- Kartajaya, H., Kotler, P., & Hooi, D. H. (2019). *Marketing 4.0: Moving From Traditional To Digital*. John Wiley & Sons.
- Khoa, B. T. (2020). The antecedents of relationship marketing and customer loyalty: A case of the designed fashion product. *The Journal of Asian Finance, Economics and Business*, 7(2), 195–204. <https://doi.org/10.13106/jafeb.2020.vol7.no2.195>
- Kim, Y., & Peterson, R. A. (2017). A Meta-analysis of online trust relationships in E-commerce. *Journal of Interactive Marketing*, 38, 44–54. <https://doi.org/10.1016/j.intmar.2017.01.001>
- Kotler, P., Armstrong, G., & Opresnik, M. O. (2021). *Principles of marketing*. Pearson.
- Kotler, P., Keller, K. L., Goodman, M., Brady, M., & Hansen, T. (2019). *Marketing management* (4th ed.). Pearson Education.
- Kuo, Y.-F., & Feng, L.-H. (2013). Relationships among community interaction characteristics, perceived benefits, community commitment, and oppositional brand loyalty in online brand communities. *International Journal of Information Management*, 33(6), 948–962. <https://doi.org/10.1016/j.ijinfomgt.2013.08.005>
- Lee, H., Choi, S. Y., & Kang, Y. S. (2009). Formation of e-satisfaction and repurchase intention: Moderating roles of computer self-efficacy and computer anxiety. *Expert Systems with Applications*, 36(4), 7848–7859. <https://doi.org/10.1016/j.eswa.2008.11.005>
- Lee, S., & Kim, D.-Y. (2018). The effect of hedonic and utilitarian values on satisfaction and loyalty of Airbnb users. *International Journal of Contemporary Hospitality Management*, 30(3), 1332–1351. <https://doi.org/10.1108/IJCHM-09-2016-0504>
- Lee, S. K., & Min, S. R. (2021). Effects of information quality of online travel agencies on trust and continuous usage intention: An APPLICATION of the SOR model. *The Journal of Asian Finance, Economics and Business*, 8(4), 971–982. <https://doi.org/jafeb.2021.vol8.no4.0971>
- Lee, M., & Mythen, G. (2017). *The Routledge international handbook on fear of crime*. Routledge. <https://doi.org/10.4324/9781315651781>
- Lee, C.-H., & Wu, J. J. (2017). Consumer online flow experience. *Industrial Management & Data Systems*, 117(10), 2452–2467. <https://doi.org/10.1108/imds-11-2016-0500>
- Lim, W. M. (2015). Antecedents and consequences of e-shopping: An integrated model. *Internet Research*, 25(2), 184–217. <https://doi.org/10.1108/IntR-11-2013-0247>
- Liu, Y., & Tang, X. (2018). The effects of online trust-building mechanisms on trust and repurchase intentions: An empirical study on eBay. *Information Technology & People*, 31(3), 666–687. <https://doi.org/10.1108/ITP-10-2016-0242>
- Luo, Y., & Ye, Q. (2019). Understanding consumers' loyalty to an online outshopping platform: The role of social capital and perceived value. *Sustainability*, 11(19), 5371. <https://doi.org/10.3390/su11195371>
- Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.
- Mimouni-Chaabane, A., & Volle, P. (2010). Perceived benefits of loyalty programs: Scale development and implications for relational strategies. *Journal of Business Research*, 63(1), 32–37. <https://doi.org/10.1016/j.jbusres.2009.01.008>
- Miranda, N. G., & Balqiah, T. E. (2020). Role of network externalities and innovation characteristics in influencing intentions to use an online bank: moderating technological anxiety. *International Journal of Business & Society*, 21(3), 1352–1365. <https://doi.org/10.33736/ijbs.3354.2020>



- Molinillo, S., Aguilar-Illescas, R., Anaya-Sánchez, R., & Liébana-Cabanillas, F. (2021). Social commerce web-site design, perceived value and loyalty behavior intentions: The moderating roles of gender, age and frequency of use. *Journal of Retailing and Consumer Services*, 63, 102404. <https://doi.org/10.1016/j.jretconser.2020.102404>
- Molinillo, S., Gomez-Ortiz, B., Pérez-Aranda, J., & Navarro-García, A. (2017). Building customer loyalty: The effect of experiential state, the value of shopping, and trust and perceived value of service on online clothes shopping. *Clothing and Textiles Research Journal*, 35(3), 156–171. <https://doi.org/10.1177/0887302X17694270>
- Mosunmola, A., Adegboyi, O., Kehinde, O., Agboola, M., & Olukundun, M. (2019). Perceived value dimensions on online shopping intention: The role of trust and culture. *Academy of Strategic Management Journal*, 18(1), 1–20.
- Mouakket, S., & Al-hawari, M. A. (2012). Examining the antecedents of e-loyalty intention in an online reservation environment. *The Journal of High Technology Management Research*, 23(1), 46–57. <https://doi.org/10.1016/j.hitech.2012.03.005>
- Nagar, K. (2016). Drivers of E-store patronage intentions: Choice overload, internet shopping anxiety, and impulse purchase tendency. *Journal of Internet Commerce*, 15(2), 97–124. <https://doi.org/10.1080/15332861.2016.1148971>
- Nagar, K., & Gandotra, P. (2016). Exploring choice overload, internet shopping anxiety, variety seeking and online shopping adoption relationship: Evidence from online fashion stores. *Global Business Review*, 17(4), 851–869. <https://doi.org/10.1177/0972150916645682>
- Nguyen, H. M., & Khoa, B. T. (2019a). The relationship between the perceived mental benefits, online trust, and personal information disclosure in online shopping. *The Journal of Asian Finance, Economics and Business*, 6(4), 261–270. <https://doi.org/10.13106/jafeb.2019.vol6.no4.261>
- Nguyen, M. H., & Khoa, B. T. (2019b). Customer electronic loyalty towards online business: the role of online trust, perceived mental benefits and hedonic value. *Journal of Distribution Science*, 17(12), 81–93. <https://doi.org/10.15722/jds.17.12.201912.81>
- Nguyen, M. H., & Khoa, B. T. (2019c). Perceived mental benefit in electronic commerce: Development and validation. *Sustainability*, 11(23), 6587–6608. <https://doi.org/10.3390/su11236587>
- Nsairi, Z. B., & Khadraoui, M. (2013). Website Satisfaction: Determinants and Consequences on Website Loyalty. *International Business Research*, 6(9), 77–92. <https://doi.org/10.5539/ibr.v6n9p77>
- Obimbo, J. I., Abanyam, F. E., & Owenbiugie, R. O. (2022). Exploring electronic commerce technology by business education graduates for employment opportunities and self-reliance in Nigeria. *International Journal of Smart Business and Technology*, 10(1), 111–130. <https://doi.org/10.21742/IJSBT.2022.10.108>
- Osswald, S., Wurhofer, D., Trösterer, S., Beck, E., & Tscheligi, M. (2012). Predicting information technology usage in the car: Towards a car technology acceptance model. Paper presented at the Proceedings of the 4th International Conference on Automotive User Interfaces and Interactive Vehicular Applications, New York. Association for Computing Machinery. <https://doi.org/10.1145/2390256.2390264>
- Palmatier, R. W., Dant, R. P., Grewal, D., & Evans, K. R. (2018). Factors influencing the effectiveness of relationship marketing: A meta-analysis. *Journal of Marketing*, 70(4), 136–153. <https://doi.org/10.1509/jmkg.70.4.136>
- Pandey, N., Tripathi, A., Jain, D., & Roy, S. (2020). Does price tolerance depend upon the type of product in e-retailing? Role of customer satisfaction, trust, loyalty, and perceived value. *Journal of Strategic Marketing*, 28(6), 522–541. <https://doi.org/10.1080/0965254X.2019.1569109>
- Pan, Y., Sheng, S., & Xie, F. T. (2012). Antecedents of customer loyalty: An empirical synthesis and reexamination. *Journal of Retailing and Consumer Services*, 19(1), 150–158. <https://doi.org/10.1016/j.jretconser.2011.11.004>
- Pappas, I. O. (2018). User experience in personalized online shopping: A fuzzy-set analysis. *European Journal of Marketing*, 52(7/8), 1679–1703. <https://doi.org/10.1108/EJM-10-2017-0707>
- Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., & Chrissikopoulos, V. (2017). Sense and sensibility in personalized e-commerce: How emotions rebalance the purchase intentions of persuaded customers. *Psychology & Marketing*, 34(10), 972–986. <https://doi.org/10.1002/mar.21036>
- Park, J., Amendah, E., Lee, Y., & Hyun, H. (2019). M-payment service: Interplay of perceived risk, benefit, and trust in service adoption. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 29(1), 31–43. <https://doi.org/10.1002/hfm.20750>
- Raji, R. A., Arikewuyo, O. A., Oladimeji Adeyemi, A. S., & Pahore, M. R. (2020). Unveiling social gratifications sought and obtained from social media utilization. *Journal The Messenger*, 12(2), 168. <https://doi.org/10.26623/themessenger.v12i2.1818>
- Rempel, J. K., Holmes, J. G., & Zanna, M. P. (1985). Trust in close relationships. *Journal of Personality and Social Psychology*, 49(1), 95. <https://doi.org/10.1037/0022-3514.49.1.95>
- Rouibah, K., Al-Qirim, N., Hwang, Y., & Pouri, S. G. (2021). The determinants of eWoM in social commerce: The role of perceived value, perceived enjoyment, trust, risks, and satisfaction. *Journal of Global Information Management (JGIM)*, 29(3), 75–102. <https://doi.org/10.4018/JGIM.2021050104>
- Sánchez-Fernández, R., & Iniesta-Bonillo, M. Á. (2016). The concept of perceived value: A systematic review of the research. *Marketing Theory*, 7(4), 427–451. <https://doi.org/10.1177/1470593107083165>
- Scarre, C. (2012). *Chronicle of the Roman Emperors: The Reign-by-reign Record of the Rulers of Imperial Rome*: Thames & Hudson. <https://books.google.com.vn/books?id=s1tspwAACAAJ>
- Senecal, S., Gharbi, J.-E., & Nantel, J. (2002). *The influence of flow on hedonic and utilitarian shopping values*. ACR North American Advances.
- Sirdeshmukh, D., Singh, J., & Sabol, B. (2018). Consumer trust, value, and loyalty in relational exchanges. *Journal of Marketing*, 66(1), 15–37. <https://doi.org/10.1509/jmkg.66.1.15.18449>
- Spithoven, R. (2017). *Keeping trouble at a safe distance: Unravelling the significance of the fear of crime*. (Doctoral Thesis). Vrije Universiteit Amsterdam.
- Srivastava, M., & Rai, A. K. (2018). Mechanics of engineering customer loyalty: A conceptual framework. *IIMB Management Review*, 30(3), 207–218. <https://doi.org/10.1016/j.iimb.2018.05.002>
- To, P.-L., Liao, C., & Lin, T.-H. (2007). Shopping motivations on Internet: A study based on utilitarian and hedonic value. *Technovation*, 27(12), 774–787. <https://doi.org/10.1016/j.technovation.2007.01.001>

- Tseng, S., & Fogg, B. (1999). Credibility and computing technology. *Communications of the ACM*, 42(5), 39–44. <https://doi.org/10.1145/301353.301402>
- Turban, E., Outland, J., King, D., Lee, J. K., Liang, T.-P., & Turban, D. C. (2018). *Electronic Commerce 2018*. Springer. <https://doi.org/10.1007/978-3-319-58715-8>
- Verma, V., Sharma, D., & Sheth, J. (2015). Does relationship marketing matter in online retailing? A meta-analytic approach. *Journal of the Academy of Marketing Science*, 44(2), 206–217. <https://doi.org/10.1007/s11747-015-0429-6>
- Westaby, J. D., Woods, N., & Pfaff, D. L. (2016). Extending dynamic network theory to group and social interaction analysis. *Organizational Psychology Review*, 6(1), 34–62. <https://doi.org/10.1177/2041386614551319>
- Wu, L.-Y., Chen, K.-Y., Chen, P.-Y., & Cheng, S.-L. (2014). Perceived value, transaction cost, and repurchase-intention in online shopping: A relational exchange perspective. *Journal of Business Research*, 67(1), 2768–2776. <https://doi.org/10.1016/j.jbusres.2012.09.007>
- Yang, K., & Forney, J. C. (2013). The moderating role of consumer technology anxiety in mobile shopping adoption: Differential effects of facilitating conditions and social influences. *Journal of Electronic Commerce Research*, 14(4), 334–347.
- Yuan, C., Zhang, C., & Wang, S. (2022). Social anxiety as a moderator in consumer willingness to accept AI assistants based on utilitarian and hedonic values. *Journal of Retailing and Consumer Services*, 65, 102878. <https://doi.org/10.1016/j.jretconser.2021.102878>



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